Abstracts and Highlight Papers of the 33rd Annual European Society of Regional Anaesthesia & Pain Therapy (ESRA) Congress 2014: ePoster Discussion

ESRA1-0010
Peripheral Nerve Blocks

INTRODUCING A STANDARDISED REGIONAL ANAESTHESIA RECORD FORM FOR CATARACT SURGERY

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Background and aims: Cataract surgery is the commonest ophthalmic surgical procedure and >90% are performed under regional anaesthesia (RA) without sedation[1].

To comply with clinical audit, governance, and for patient safety, record keeping must be comprehensive, clear and unambiguous [1].

Currently there is no 'gold standard' for RA documentation [2].

We audited the current practice of RA documentation for cataract surgery in our hospital and designed/introduced a standardised record form based on recent royal college guidelines [1].

Methods: We reviewed RA documentation of patients who had undergone cataract surgery over a two-week period. A standardised form was designed/ introduced, and documentation practice was re-audited over two-weeks.

Results: 50 anaesthetic charts were analysed initially, followed by 50 charts in the re-audit.

Asepsis was recorded in 70% before versus 100% after new forms were introduced. Entry site of needle was recorded in 34% versus 80% while record of needle type/length was recorded in 2% versus 94%. 100% documentation of the volume/concentration of lignocaine used was observed before and after the new forms. Hyraluronidase use/dose was recorded in 86% versus 100% while sedation or lack of it was recorded in 6% versus 100%.

Finally, quality of the block was recorded in 70% versus 92% while complications or lack of it was recorded in 34% versus 100% following introduction of new forms.

Conclusions: The initial audit demonstrated the variable extent of documentation, which may be indirectly seen as a poor standard of anaesthetic care[3]. There was a vast improvement in documentation following the introduction of a standardised form.

ESRA1-0012
Pediatric

EFFECTS OF DEXMEDETOMIDINE ADDED TO CAUDAL BUPIVACAINE ON POSTOPERATIVE ANALGESIA AND STRESS RESPONSE IN PEDIATRIC LOWER ABDOMINAL SURGERIES

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Background and aims: This study investigated the efficacy of caudal dexmedetomidine added to bupivacaine on postoperative pain relief and stress response in pediatric lower abdominal surgeries.

Methods: This study was done after hospital ethical committee approval and informed written consent from the parents. In a randomized, prospective study, 100 children were recruited and allocated into two groups in a double-blinded study. After sevoflurane inhalational induction, an appropriate size LMA was inserted. All patients received a single caudal dose of bupivacaine 0.25% (1 ml/kg) combined with either dexmedetomidine 2 ug/kg in normal saline 1 ml in group Dexmedetomidine, or corresponding volume of normal saline in group Bupivacaine. Postoperative pain score, time to first request of analgesia, analgesic consumption and adverse effects were recorded for 24 hours. Behavior during emergence was rated with a 5-point scale. Blood samples were withdrawn before induction of sevoflurane anesthesia and at 1 hour after the end of surgery for measurement of blood cortisol level.

Results: The duration of postoperative analgesia was significantly longer in group Dexmedetomidine compared to group Bupivacaine. Postoperative fentanyl consumption was significantly higher in group Bupivacaine compared to group Dexmedetomidine. There was higher incidence of postoperative emergence agitation in group Bupivacaine compared to group Dexmedetomidine. Postoperative serum cortisol level was significantly higher in both groups, but in group Bupivacaine the level was significantly higher compared to group Dexmedetomidine.

Conclusions: Caudal dexmedetomidine with bupivacaine improves postoperative analgesia, reduces incidence of emergence agitation and decreases the stress response in pediatric lower abdominal surgeries.

ESRA1-0015
Case Reports

NEUROTOXIC EFFECTS OF ELEVATED CSF ASPARTIC AND GLUTAMIC ACIDS IN CEREBRAL MALARIAL PATIENTS

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Background and aims: Cerebral malaria (CM) is the most serious and life-threatening complication of malaria, caused by plasmodium falciparum.To know the significance of excitatory amino acids, the Aspartic acid (Asp) and the Glutamic acid (Glu) in causing neurotoxic effects, we analyzed their levels in the CSF of cerebral malarial patients.

Methods: We developed a High-performance liquid chromatographic method, based on a precolumn derivatization with o-phthalaldehyde to quantitate levels of those amino acids.

Results: In comparison to the control subjects, the levels of both amino acids (Asp and Glu) were found to be highly elevated in cerebral malarial patients.

Conclusions: The patients showed aggravating neurogenic signs and symptoms. The significant elevation reflects the neurotoxic effects of these amino acids in cerebral malarial patients.

ESRA1-0028
Obstetric

CRYSTALLOID VERSUS COLLOID COLOAD WITH PHENYLEPHRINE INFUSION DURING SPINAL ANAESTHESIA FOR ELECTIVE CAESAREAN DELIVERY: THE EFFECTS ON MATERNAL HAEMODYNAMICS AND FOETAL ACID-BASE STATUS

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Background and aims: We designed a double-blind randomized controlled study to compare the effects of crystalloid versus colloid coload in combination with a prophylactic phenylephrine infusion. The primary outcome was the incidence of maternal hypotension . The secondary outcomes were incidence of reactive hypertension, bradycardia, nausea and vomiting, umbilical artery and vein gas analysis and neonatal Apgar score at 1 and 5 minutes.

Methods: 60 ASA physical status I and II parturients with singleton pregnancies scheduled for elective caesarean delivery under spinal anaesthesia were recruited in this study. Group A patients received coload with 500 ml of lactated Ringer's solution whereas Group B patients received 500 ml of 6% Hydroxyethyl Starch solution at the start of spinal injection and infused within 5–7 minutes. The phenylephrine infusion was started simultaneously in a dose of 1 ml/min (50 µg/min) and was either on or off according to BP and HR measurements at 1-minute intervals till the uterine incision.
Results: Maternal demographics, surgical times, foetal acid base status and Apgar scores were similar between groups.The incidence of maternal hypotension was 20% in Group A and 10% in Group B (P>0.05).The incidence of bradycardia was more in Group A(6.6% VS 0%. P <0.05). The episodes of reactive hypertension, maximal and minimal recorded SBP and total dose of phenylephrine required did not differ statistically between the two groups (P>0.05).
Conclusions: Crystalloid or colloid infusion, administered as coload in a volume of 500 ml along with a prophylactic phenylephrine infusion shows no difference in the incidence and severity of hypotension with similar neonatal outcome.

ESRA1-0029
Chronic Pain Management

AN AUDIT OF PATIENT SATISFACTION WITH SPINAL CORD STIMULATION

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Background and aims: Chronic pain is common, with an estimated prevalence of 1–1.5%. Symptoms include shooting or burning pain, allodynia and hyperalgesia. Spinal cord stimulation (SCS) is a type of neuromodulation used for the treatment of chronic pain. Neuroodulation alters of the activity of a nerve as a result of electrical or pharmacological stimulation. SCS is based on the gate-control theory of pain but it is believed that endogenous inhibitory pathways, neurotransmitters and the autonomic nervous system may also be involved.
Methods: We analyzed all patients who had a spinal cord stimulator implanted at Beaumont Hospital in Dublin, Ireland. This involved review of the patient's medical record and a telephone questionnaire. Only patients known to be actively using the device were contacted. Parameters evaluated included:
- Demographics
- Indication for SCS
- Symptoms duration
- Reduction in VAS
- Analgesia requirement
- Performance of activities of daily living
- Mood
- Employment status
- Ease of use
- Infection rate
- Would they recommend the SCS?
- Would they have the SCS again?
- Overall satisfaction rating

Results: N = 72
Average age 54 years.
Indications were FBSS (46%) and CRPS (19%).
60% of patients currently using SCS
VAS scores reduced by > 50% in 63% of patients.
Opiate consumption reduced in 72%.
Improved ability to perform ADLs was reported in 93%
19% returned work.
Satisfaction rating greater than 70% in 67% of patients
Conclusions: SCS appears to be an effective method for the treatment of chronic pain. Patient satisfaction rates with the device are high.

ESRA1-0034
Case Reports

CHRONIC ANAL PAIN; APPLICABILITY OF CAUDAL NEUROMODULATION, CASE SELECTION

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Background and aims: Chronic idiopathic anal pain (CIAP) remains a diagnosis of exclusion. Its study and management still lack a standardized protocol. The aim of this case presentation is to evaluate the results obtained with the diagnostic-therapeutic protocol established in our service.
Methods: We performed a retrospective study of patients diagnosed with CIAP. We were able to select three cases to implant caudal electrical neuromodulation as a modality for long term pain relief.
Results: Three cases of caudal electrical nerve stimulation implants showed great pain reduction with improved depression scale , daily social activities, functionality and great satisfactory rate. We used a set of neural blockade protocol to have the ability to identify the nociceptive transfer conduit system.
Conclusions: Through physical examination and complementary tests it may be possible to diagnose CIAP. Using neural blockade to discover peripheral sensitization or central component of pain is tremendously helpful. Conservative measures combined with biofeedback achieved an improvement in pain. Sacral nerve stimulation can be considered as a treatment option in properly selected cases. We will discuss about how to make a selection for optimum response.

ESRA1-0035
Chronic Pain Management

PAIN MANAGEMENT WITH ULTRASOUND GUIDED ELECTRICAL PERIPHERAL NERVE STIMULATION, TECHNICAL ASPECT

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Background and aims: Peripheral nerve stimulation (PNS) is a well-established yet underutilized method of addressing chronic neuropathic pain.
Methods: The authors review their single institution experience of peripheral nerve neuromodulation between July, 2012 and June, 2013.
Results: A total of 17 patients underwent ultrasound-guided PNS implantation during a one year period. Of the 17, 82% had either an excellent (11), good (1) or fair (2) outcome. In the remaining 3 patients, 1 had a poor outcome, and 2 had bad outcomes (1 requiring explantation for infection, and 1 lead migration requiring ultimate explantation). Of those with a good or excellent outcome, the average length of pain suffering prior to implantation was 5.1 years, compared to 10.1 years in the group with bad outcome ($p < 0.001$). Mean follow-up was 118 days (range 8–313).
Conclusions: Peripheral neuromodulation is an underutilized technology for carefully selected patients. The authors were able to develop a successful peripheral neuromodulation program. Factors leading to good success rate include a low lead migration rate due to ultrasound guided placement of the lead, novel method of intra-clinic trialing leading to insurance pre-approval for all successfully trialed patients, and a novel method for greater auricular nerve stimulation in cases of migraine.

ESRA1-0036
Chronic Pain Management

PREDICTIVE FACTORS FOR THE OUTCOME OF MULTIDISCIPLINARY TREATMENT IN CHRONIC LOW BACK PAIN

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Background and aims: Multidisciplinary treatment is recommended to treat chronic low back pain (LBP). The aim of the present study was to show the associations among multidisciplinary treatment outcomes, pretreatment psychological factors, self-reported pain levels and history of pain in chronic LBP patients.
Methods: A total of 221 new chronic LBP patients were chosen for the study. The pretreatment scores of 10-cm Visual Analogue Scale (VAS), Hospital Anxiety and Depression Scale (HADS), Pain Catastrophizing Scale (PCS), Short-Form McGill Pain Questionnaire (SF-MPQ), Pain Disability Assessment Scale (PDAS), pain-drawings and history of pain were extracted from medical records. The patients were divided into two treatment outcome groups a year later: a good outcome group, for patients whose pain level in the VAS decreased by at least 50% compared with pre-treatment and; a poor outcome group for patients who did not. Pretreatment scores between the two outcome groups were then compared.
Results: Scores of VAS, PDAS, the affective subscale of SF-MPQ, and non-organic pain-drawings in the good outcome group were significantly lower than those in the poor outcome group. Duration of pain in the good outcome group was significantly shorter than in the poor outcome group. The patients who claimed that their pain was becoming progressively worse for days had poorer outcomes.
Conclusions: These findings have helped us better predict the efficacy of multidisciplinary treatment in chronic LBP patients.

ESRA1-0042
Case Reports

EXCELLENT POSTOPERATIVE ANALGESIA WITH THE ADDITION OF HYALURONIDASE TO LIGNOCAINE FOR SUBCOSTAL TAP BLOCK USED IN CONJUNCTION WITH SYSTEMIC ANALGESIA FOR LAPAROSCOPIC CHOLECYSTECTOMY

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Background and aims: We hypothesized that the addition of hyaluronidase to local anaesthetic may improve the spread and efficacy of local anesthetic in the TAP.

Our aim was to perform a postoperative TAP block and record postoperative pain scores. In addition we measured serial serum lignocaine levels after the block.

Methods: Bilateral subcostal approach TAP blocks were performed for post operative analgesia following an elective laparoscopic cholecystectomy in a 56 year old female using ultrasound imaging. 20 mL of 1% lignocaine with 1500 units of hyaluronidase (75 units/mL) was injected bilaterally. Peripheral blood samples were taken at 1, 5, 15, 30 and 60 min and tested for lignocaine levels. VAS pain scores were recorded postoperatively.

The patient also received 1g of paracetamol, 75mg of diclofenac & 5mg of morphine intravenously prior to skin incision. Postoperatively the patient recieved 1g of paracetamol intravenously 6 hourly for 24 hours.

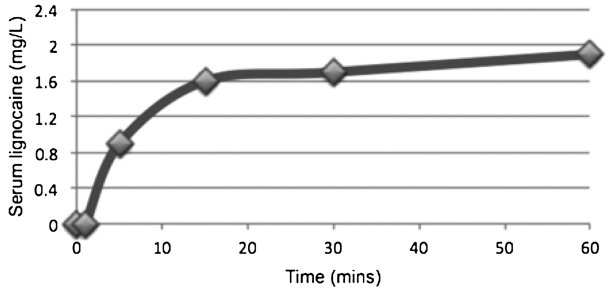

FIGURE 1.

Results: Serum lignocaine concentrations did not exceed safe levels. VAS scores were 0/10 at all measurements until discharge, and after discharge via telephone follow up.

Serum lignocaine plotted versus time after performance of transversus abdominis plane block. (Therapeutic range as antiarrhythmic 1.5–5mg/L).
Conclusions: Hyaluronidase may improve the efficacy of subcostal transversus abdominis plane (TAP) blocks.

In this case study, serum lignocaine concentrations were comparable to previous studies of lignocaine levels without hyaluronidase.

Addition of hyaluronidase to local anaesthetic TAP blocks may present an important alternative to opioid-based analgesia for postoperative laparoscopic cholecystectomy.

ESRA1-0055
Peripheral Nerve Blocks

THE MODULATING EFFECT OF THE ADJUVANTS CLONIDINE AND EPINEPHRINE ON THE INFLAMMATORY RESPONSE CAUSED BY INTRANEURAL BUPIVACAINE INJECTIONS

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Background and aims: Intraneural as well as perineural injected local anesthetics are known to produce a relevant inflammation which might be the link to adverse neuropathic sequelae after performing nerve blocks. Adjuncts are widely used in regional anesthesia to enhance block time or reduce amount of local anesthetics. However, their influence on neuroinflammation is poorly understood.
Methods: Intraneural injection was performed in twelve anesthesized pigs to a total of 64 axillary brachial nerves and 18 tibial nerves. Either 1ml of Bupivacaine 0.5% alone or in combination with Epinephrine 1:100.000 or Clonidine (3.75µg/ml) or saline solution were injected intraneural with a 30G cannulae. After 48 hours of maintaining general anesthesia, nerves including negative and positive controls were excised and underwent subsequently histological examination. Signs of inflammation, intraneural hematoma and myelin damage caused by the trauma were evaluated using an established histological score ranging from 0 (no lesion) to 4 (severe lesion). Experiments were permitted by local authorities.
Results: Statistical analysis showed a mild inflammation after injection of plain bupivacaine (score median (25th -75th IQR) 1(1–2)) that does not differ significantly from Bupivacaine with Epinephrine (score 2(1–2), p=0.51) or Bupivacaine with Clonidine (score 1 (1–2), p=0.37). Ligation of the nerve (positive control) caused a relevant inflammation (score 4(4–4, p=0.001) whereas intraneural saline injection caused only mild inflammatory response (score 0,5 (0–1), p=0.007).
Conclusions: In our experimental animal model, the addition of epinephrine or clonidine has no relevant modulating effect on the local inflammation caused by the local anesthetic bupivacaine.

ESRA1-0057
Case Reports

MIGRATION OF A CAUDALLY INSERTED EPIDURAL CATHETER INTO PRESACRAL AREA

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Background and aims: Thoracic epidural anaesthesia via caudal route in infants is described in literature as early as 1988. This is a case report of a 3 month old baby boy of 4.34 kilograms who underwent a Duhamel pull through for Hirschprung's disease. The surgery was planned as an elective procedure under general anaesthesia and with a caudal epidural.

Methods: The patient underwent a routine gas induction. After securing airway the patient was positioned left lateral in preparation for placement of a caudal epidural catheter. The sacral hiatus was identified with the guidance of anatomical landmarks. An 18G Abbocath was inserted and once the space was identified by perforating the sacrococcygeal ligament the cannula was advanced and the needle removed. Blood or cerebrospinal fluid was not detected via the cannula. A 20G caudal epidural catheter was inserted with ease.
Results: The catheter placement was thought to be appropriate because of no difficulty during insertion, a dropping fluid meniscus in the epidural catheter and a slight reduction of blood pressure after the first bolus of local anaesthetics. All seemed well and caudal analgesia was planned for postoperative pain relief. To our surprise the epidural catheter was found by the surgeon in the presacral area.
Conclusions: The caudal epidural catheter seemed to have migrated to the presacral space via the anterior intervertebral foramina of the sacrum. This illustrates the uncertainty of the final cephalad position of caudal epidural catheters and highlights the importance of confirming the placement formally.

ESRA1-0073
Peripheral Nerve Blocks

FASCIA ILIACA BLOCKS IN FRACTURED NECK OF FEMUR: AN OPIOID SPARING ADJUNCT?

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Background and aims: Fascia iliaca blocks (FIB) have been used as an opioid sparing technique for fractured neck of femur (NoF) repair. At East Surrey FIBs are routinely combined with general anaesthesia, whilst at Tunbridge Wells a single shot spinal (SSS) is preferred. We conducted a retrospective survey evaluating postoperative opioid consumption following these contrasting techniques.
Methods: The anaesthetic and drug charts of fracture NoF patients between March-July 2013 were examined. Opiate consumption during the immediate 48-hour postoperative period was recorded. Opiate consumed was calculated in oral morphine equivalent (OME), where 1mg of oral morphine equated to: 10mg codeine, 5mg tramadol and 0.5mg oxycodone orally, and 0.5mg SC/IV/IM morphine.
Results: 104 patients were surveyed. 40 patients underwent combined general anaesthesia with FIB, and 46 SSS. 18 patients were excluded: 9 received alternative anaesthetic techniques, 5 were on long-term opioid patches, in 2 individuals data was incomplete, and 2 died postoperatively within 48-hours. The OME was (Fig 1):

	1st 24 hours post op	2nd 24 hours post op
GA and FIB	7	5
Spinal	14	17

Table 1: Non-cumulative equivalent oral morphine consumption (mg) by intraoperative anaesthetic technique

FIGURE 1.

Conclusions: FIB augmented general anaesthesia appears to be opiate sparing compared to SSS within the 48-hour follow up period. A potential weakness of our survey is the variation in intra-operative opioid used intrathecally or intravenously, however the influence on postoperative opioid consumption, particularly in the second 24-hour period is likely to be minimal.

ESRA1-0074
Chronic Pain Management

RADIATION EXPOSURE OF THE EYE AND THYROID DURING FLUOROSCOPY-GUIDED CERVICAL EPIDURAL STEROID INJECTIONS

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Background and aims: Cervical epidural block requires frequent x-ray imaging and the operator performing the procedure is susceptible to frequent and high doses of radiation compared to other procedures. We evaluated the radiation exposed to the head of pain physicians when performing cervical epidural block.
Methods: The study was conducted on two pain physician who performed C-arm fluoroscopy-guide cervical epidural block. Among total of 6 dosimeters, 5 dosimeters were placed on the forehead, inside and outside of the thyroid protector, and inside and outside of the lead apron. A control dosimeter was placed in the procedure room. The dosimeters on the forehead and thyroid represented radiation exposure to the eyes and thyroid respectively. Also, age, sex, height, weight of patients and radiation exposure time, absorbed dose, distance from the center of the X-ray field to the physicians.
Results: There were no significant differences in the demographic datas and radiation related data among two physicians (Table 1). Only distance from the center of the X-ray field to the physicians showed significant difference, statistically (P=0.03). The level of radiation measured on the dosimeters were also no significant difference (Table 2).
Conclusions: This study reveals radiation exposure level of eyes and thyroid is far below the annual maximum permissible radiation doses.

Physician	1	2	P value
Patients	51	30	
Age (yr)	56.64 ± 12.40	53.25 ± 14.38	0.94
Sex (Male/Female)	25/26	17/13	
Height (cm)	163.02 ± 7.90	167.35 ± 2.763	0.14
Weight (kg)	63.05 ± 12.66	70.28 ± 6.79	0.19
Total time/procedure (min)	13.39 ± 1.70	10.64 ± 2.90	0.37
Time of radiation exposure/procedure (sec)	22.96 ± 8.83	18.75 ± 3.20	0.24
eGy/procedure (eGy/cm2)	95.42 ± 66.15	76.94 ± 14.89	0.16
Distance (cm)	37.5 ± 2.04	41.5 ± 4.68	0.03

Physician	TLD position	Radiation dose (mSv)	Calculated annual equivalent dose (mSv)
1	Forehead	0.74	4.44
	Outside of thyroid protector	0.55	3.33
	Inside of thyroid protector	0.43	2.58
	Outside of apron	0.71	4.26
	Inside of apron	0.47	2.82
2	Forehead	0.57	3.42
	Outside of thyroid protector	0.45	2.7
	Inside of thyroid protector	0.25	1.5
	Outside of apron	0.62	3.72
	Inside of apron	0.38	2.28
Room control	Inside	0.4	2.4s
	Outside	0.37	2.22

FIGURE 1.

ESRA1-0080
Peripheral Nerve Blocks

CURRENT STANDARD OF CONSENT AND DOCUMENTATION OF INTERSCALENE AND SUPRACLAVICULAR NERVE BLOCKS: A SURVEY OF ANAESTHETISTS IN SCOTLAND

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Background and aims: 3 key elements of the General Medical Council guidance on consent for medical procedures are:

- Clinicians should discuss any possible significant adverse outcomes including the possibility of the intervention failing
- Key elements of that discussion should be recorded
- Written information on the procedure should be available to patients

The aim of this survey was to compare current practice with these published guidelines.

Methods: An online questionnaire was sent to all anaesthetic departments in Scotland which provide anaesthesia for orthopaedic surgery.

Results: 161 anaesthetists completed the questionnaire (response rate ~14%).

91 (57%) were consultants.

15% of respondents stated that written information on nerve blocks was given to patients prior to surgery.

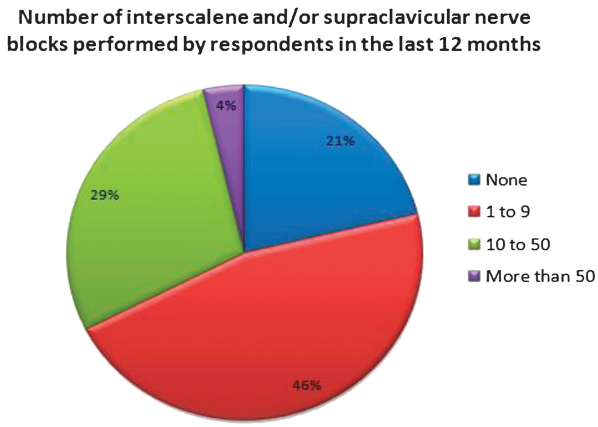

FIGURE 1.

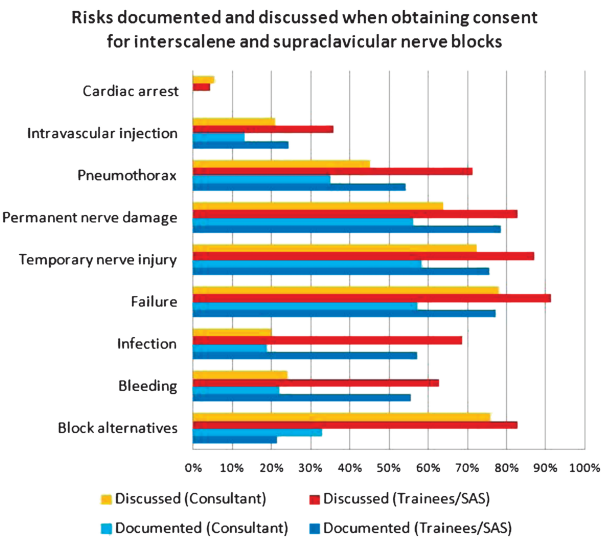

FIGURE 2.

The 2 most common reasons for not discussing specific risks were:

· Risk(s) considered to be rare 34/72

· Not wanting to unduly worry patients 19/72

Conclusions: There is significant variation in individual anaesthetic practice when discussing and documenting risk. Many anaesthetists consider it inappropriate to unduly worry patients on the day of surgery, giving patients written information at preassessment may circumvent this issue.

An example of a patient information leaflet is available on the Royal College of Anaesthetists website.

http://www.rcoa.ac.uk/document-store/brachial-plexus-block-arm-hand-or-shoulder-surgery

ESRA1-0081
Central Nerve Blocks

ESTIMATION OF MINIMUM DOSE OF BUPIVACAINE IN DAY-SURGERY PATIENTS UNDERGOING HERNIORRHAPHY UNDER SPINAL ANESTHESIA

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Background and aims: The aim of the study was to find minimal effective dose of spinal hyperbaric bupivacaine (ED50) which is also referred to as the minimum local anesthetic dose; in order to reduce the duration and cost of hospitalization and resume quickly the daily life activities.

Methods: In this prospective, up–down sequential allocation study, we enrolled 20 patients undergoing herniorrhaphy under spinal anesthesia. Patients received intrathecal hyperbaric bupivacaine 0.5% coadministered with 25 gamma fentanyl. The dose of local anesthetic was varied using up-down sequential allocation technique. The dose for the first patient was 7,5 mg, and the dosing variation was set at 0,5 mg. Subsequent dose were determined by the outcome in the previous patient using success or failure of the spinal anesthesia as the primary end point. A success was recorded if the surgery proceeded successfully after the intrathecal injection without supplementary analgesia. The median effective dose of Bupivacaine was calculated.

Results: The calculated ED50 of hyperbaric bupivacaine was 7,41 (95% confidence interval: 7.06–7.77) mg. The median upper limit of the sensory block was T8, recovery of motor function took place in 133±27min, Recovery of sensory function was 194±67min. Time to start walking was 233(155–315) min. Up to now, no one needed to be catheterized because of their inability to pass urine. All outpatients were discharged home as planned, and none of the study patients were readmitted to the hospital.

Conclusions: A low dose of bupivacaine allow safe ambulatory herniorrhaphy under spinal anesthesia; reducing the level of recovery of daily life activities without analgesic consumption increase.

ESRA1-0083
Chronic Pain Management

PREVENTING THE DEVELOPMENT OF POSTOPERATIVE CHRONIC PAIN WITH TEBANTIN: EFFICIENCY

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Background and aims: Chronic pain after surgery (postoperative chronic pain - PCP) is a significant problem. According to some studies, preoperative use of Tebantin reduces pain intensity postoperatively. Nevertheless, researches of prevention of PCP are fewer.

The aim is to study the possible prevention of PCP by Tebantin.

Methods: A prospective, double-blind, case-control randomized study has been carried out. 145 patients (44.8% female, 55.2% male) at age 49,1±14,5, who underwent cholecystectomy, hernioplasty, venectomy, appendectomy, are randomized into 2 groups. Patients of the first group (n = 57) have received Tebantin 300 mg per os in 2 hours after extubation, further twice by 8 hour

interval in the same dose. Second (control) group patients (n=88) were given placebo in appropriate schedule. Pain occurrence was assessed by phone in subsequent 1, 3, 6 months using questionnaire (QN4). The t-test was used for statistical analysis.
Results: The PCP was recognized after 1 month in 19.3% and 13.6% in the first and control groups, respectively. In 3 months PCP existed in 10.5% patients of the first group and 10.2% in control. These results didn't change after six months. There is no significant difference between the results of the two groups after 1 (differ 5.7%, t = 0.9, P>0.05) and 3 or 6 (differ 0.3%, t = 0.06, P>0.05) months.
Conclusions: Tebantin in dose of 900 mg/day isn't effective for PCP prevention after cholecystectomy, hernioplasty, venectomy and appendectomy.

ESRA1-0084
Obstetric

EPIDURAL COMPLICATIONS- DOES IT MATTER HOW MANY ATTEMPTS WE HAVE?

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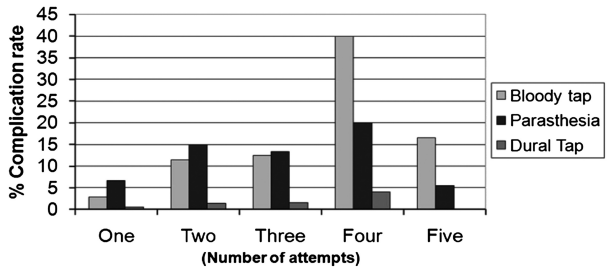
Background and aims: There are many potentially serious complications that can occur after regional anaesthesia. It is known that rates vary between novices or 'difficult-epidurals' and good technique and supervision.

Does increasing the number of attempts increase these complications? If so, should we limit how many times we try epidural insertion?
Methods: We collected data on epidural insertions in labour over a 5-year period in our unit. We looked at who was inserting the epidural, how many attempts, and documented initial complications. Follow-up data was also collected.
Results: 2122 epidurals were inserted. 82.5% were inserted by trainee, 9.3% by staff-grades and 8.2% by consultants. 73% of epidurals were inserted at first attempt, 19% at second, 5.9% at third, 1.2% at forth and 0.9% at fifth or more attempts. There was no significant difference in number of attempts and grade of anaesthetist. Unsurprisingly difficulties were noted with increased insertion attempts. Maternal satisfaction revealed 59% of epidurals were very-good and 29% good. Increased attempts did not alter the block quality. There were no immediate complications in 86%. There was an overall 5.6% bloody-tap rate, 8% parasthesia rate and 0.8% dural-tap rate. There were no known long-term neurological complications. As the number of epidural insertion attempts increased, immediate insertion complications increased as detailed below.
Conclusions: For anaesthetists to gain informed consent for epidural insertion, various risks and complications are discussed. Our audit shows these risks may vary with increased number of epidural attempts. This should be bourne in mind when obtaining informed consent especially when an epidural is predicted to be a challenge.



Immediate complications of epidural insertion against number of insertion attempts

FIGURE 1.

ESRA1-0087
Peripheral Nerve Blocks

SURVEY OF EDUCATION PRACTICES FOR REGIONAL BLOCK TECHNIQUES IN A UK UNIVERSITY TEACHING HOSPITAL

Chazapis M.[1], Kaur N.[1], West S.[1], Kamming D.[1]. [1]*Anaesthetics, University College Hospital, London, United Kingdom.*
Background and aims: Recent years have led to an unprecedented and daunting increase in the availability of educational materials for anaesthesia and medicine in general. The aim was to survey anesthetist's primary information source for regional anaesthesia while at work and at home.
Methods: A questionnaire was produced asking participants to rank their preferred source of information for regional anaesthesia when at home, and when at work. The five options were: Book, Internet Search, Colleague, Journal and Course materials.
Results: Forty anaesthetists responded to the questionnaire. When at home, the primary information source was an internet search (n=30, 75%). Of this, 53% (n=16) use the NYSORA website, 30% (n=9) use a Google search, and the remainder 16.7% (n=5) a You-tube search. The secondary choice at home was Books (n=8). At work, Internet search remains the primary source for 62.5% (n=25), being an even split between NYSORA and a Google / You-tube search. However, the secondary choice was discussion with Colleagues (37.5%, n=15).

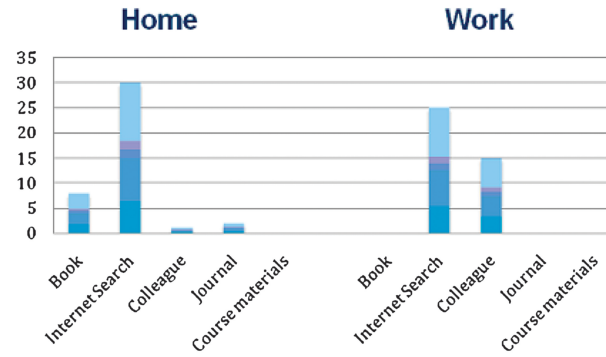


FIGURE 1.

Conclusions: Internet searches are the primary source of information for regional anaesthesia when at home and at work. This is split between the well-regarded NYSORA website and just generic Google searches. We are concerned about the quality of information available, and we will assess this in future work.

ESRA1-0088
Miscellaneous

WHO IS THE ANAESTHETIST? A PATIENT SURVEY

Chazapis M.[1], Patel J.[1], Kaur N.[1]. [1]*Anaesthetics, University College Hospital, London, United Kingdom.*
Background and aims: Anaesthetists are highly trained peri-operative physicians. However, patients remain relatively unaware of the anaesthetist's role within and outside the operating theatre despite efforts by professional bodies worldwide [1]. We present results of a survey of current patient's understanding on the role of anaesthetists.
Methods: In a UK university teaching hospital, we surveyed patients admitted for elective surgical procedures, before their operations, over a period of two weeks.
Results: 134 patients responded to the survey. 92% of patients with previous anaesthetic experience stated that they understood the role of the anaesthetist,

but only 73% were able to provide an adequate description. 86% of patients presenting for their first operation, stated they understood the role of the anaesthetist, but only 50% were able to give an adequate description.

In both groups, most patients recognized that the anaesthetist is present throughout the operation. 55% of patients who had no prior experience of anaesthesia did not know that anaesthetists were doctors. 20% of patients were unaware that anaesthetists have a role outside the operating theatre.

Patients who HAVE had an anaesthetic before
Total: 112 Male: 58% Female: 42%

Speciality	Total No in each speciality group	Know the role of an anaesthetist? YES	Does the anaesthetist Stay throughout - YES?	Know when role ends? YES	Does A stay throughout operation? YES
Gynaecology	9	8	5	7	6
Orthopaedics	27	25	25	23	25
Urology	25	24	24	20	23
Bariatrics	3	3	3	3	3
Unsure/misc	11	9	10	8	10
Colorectal	10	10	10	10	8
General	19	18	16	16	16
dental	7	6	6	5	7
TOTAL	112	103 (92%)	100 (89%)	92 (82%)	98 (87.5%)

Fig 1. 73% of patients gave an adequate description of the anaesthetists' role

FIGURE 1.

Conclusions: Nearly half of patients could not give an adequate description of the role of anaesthetists. We will produce a patient information leaflet describing our roles, and distribute it in the pre-assessment clinic.

Reference:

1. Swinhoe CF, Groves ER. Patients' knowledge of anaesthetic practice and the role of anaesthetists. Anaesthesia, 1994 Feb; 49(2):165–6.

ESRA1-0089
Peripheral Nerve Blocks

SPINAL ANAESTHESIA FOR ENDOSCOPIC UROLOGICAL SURGERY: A COMPARISON OF 2% HYPERBARIC PRILOCAINE WITH 0,5% HYPERBARIC BUPIVACAINE

Cannata F.[1], Costantini M.[1], Spinoglio A.[1], Rocco A.[1], Canneti A.[1], Luzi M.[1], Di Marco P.[1], Reale C.[1]. [1]*Anaesthesiology Pain Medicine and Intensive care, Policlinico Umberto I, Roma, Italy.*

Background and aims: Hyperbaric prilocaine is a short-acting local anaesthetic. The aim of this study was to compare the characteristics of subarachnoid block using hyperbaric prilocaine or bupivacaine in outpatients undergoing transurethral resection of prostate (T.U.R.P) and of bladder (T.U.R.B.).

Methods: In this prospective randomized controlled trial, 60 patients undergoing endoscopic urological surgery received subarachnoid anaesthesia with either 2% hyperbaric prilocaine 60 mg (Group P) or 0,5% hyperbaric bupivacaine 15 mg (Group B). Primary endpoints included times for onset of sensory and motor block, duration of motor and sensory block and possible side-effects. Motor block was assessed using the modified Bromage scoring system. A global patient satisfaction score was also obtained using the five-points Likert scale. Comparisons between the groups were made by t- Student test.

Results: Onset time of sensory and motor block was faster in the group that received prilocaine. The duration of sensory block was also shorter in the prilocaine group (mean 91 vs 100 min, respectively, $P<0.05$. Time to full motor function recovery was shorter after prilocaine than bupivacaine (mean 72 vs 95 min, respectively, $P<0.05$)(figure 1). Incidence of side effects like hypotension and bradicardia was significantly higher in bupivacaine group.

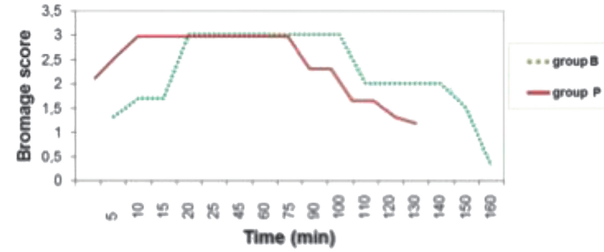


FIGURE 1.

Conclusions: This study demonstrated intrathecal prilocaine was a better alternative to bupivacaine for spinal anesthesia in endoscopic urological surgery due to faster onset and resolution of motor and sensory block together with greater haemodynamic stability.

ESRA1-0093
Peripheral Nerve Blocks

EFFECTIVENESS OF A MULTI-HOLE CATHETER FOR CONTINUOUS OBLIQUE SUBCOSTAL TRANSVERSUS ABDOMINIS PLANE BLOCK: A RETROSPECTIVE COMPARATIVE STUDY

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Background and aims: We hypothesized that continuous oblique subcostal transversus abdominis plane (TAP) blocks using multi-hole catheters would provide superior analgesia after laparotomy because of a wider infiltration of anaesthetic than provided by epidural catheters.

Methods: The Research Ethics Committee at our institute approved this study. This retrospective, comparative study included 2 groups of patients who were administered bilateral continuous oblique subcostal TAP blocks using either epidural (10 patients with 20 catheters, E group) or multi-hole (10 patients with 20 catheters, M group) catheters after gynaecological cancer surgery. The epidural catheter included 3 holes around the tip, while the multi-hole catheter included 8 holes within 15 cm of the tip. All patients received 0.1% ropivacaine through each TAP catheter at 10 mL/h, combined postoperatively with patient-controlled intravenous morphine. Postoperative morphine consumption and anaesthetized dermatome distribution were assessed. A p value < 0.05 was considered statistically significant.

Results: Cumulative morphine consumption (mean [SD] mg/kg) 24 h after surgery was higher in the M group (0.45 [0.28]) than in the E group (0.23 [0.17]) ($p < 0.05$). The median (range) of anaesthetized dermatomes per catheter 24 h after surgery was 2.5 (0–6) in the M group and 2 (1–3) in the E group ($p = 0.22$). Dermatomes of the upper abdominal wall were anaesthetized more frequently in the M group than the E group.

Conclusions: Contrary to our expectations, administration of bilateral continuous oblique subcostal TAP blocks with multi-hole catheters increased post-laparotomy morphine consumption compared to epidural catheter administration.

ESRA1-0094
Case Reports

ULTRASOUND GUIDED DEEP PERONEAL NERVE BLOCK FOR METATARSALGIA

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Background and aims: Metatarsalgia is a common cause of forefoot pain involving plantar aspects of second through to fourth metatarsal heads. Conservative management includes medications, modifying footwear and physical therapy. Surgery may be warranted with the inherent risk of non-union

or mal-union. Deep peroneal nerve supplies metatarsophalangeal joints of the great toe and the middle three toes. Deep peroneal neurectomy is reported to be effective for midfoot and tarsometatarsal arthrosis.[1] we propose that deep peroneal block may be an effective alternative in selected patients with metatarsalgia.

Methods: Written informed consent was obtained for three adult patients with persistent metatarsalgia for more than two years. One patient had previous surgery on metatarsals with ongoing, constant sharp pain. The second patient had secondary arthritis of 1st and 2nd metatarsophalangeal joints with persistent pain. The third patient had constant metatarsalgia but was not willing for any surgical procedure. Ultrasound guided deep peroneal block was performed using 5millilitres of 0.25%levobupivacaine and 40mg of triamcinolone.

Results: First two patients received the block twice over a period of one year and reported VAS scores.

Conclusions: We report our early experience with the use of deep peroneal block for intractable metatarsalgia. Preliminary results indicate significant benefit in terms of pain and functional improvement and may be a valid option in selective cases but further evaluation needs to be conducted.

Reference:

1. Blacklidge DK et al. J Foot Ankle Surg. 2012; 51(4):464–7.

ESRA1-0095
Chronic Pain Management

FURTHER RESEARCH ON THE EFFICACY OF A NEW NAVIGABLE PERCUTANEOUS DISC DECOMPRESSION DEVICE (L'DISQ) IN PATIENTS WITH LUMBAR RADICULAR PAIN (2-YEAR FOLLOW-UP)

Jeong Y.[1], Lee S.[1], Park H.[1], Yoo H.[1]. [1]*Physical medicine & rehabilitation, Korea university Anam hospital, Seoul, Korea.*

Background and aims: The L'DISQ device is specifically designed to remove herniated disc using a navigable wand into a herniated intervertebral disc. This study evaluated the efficacy of a new navigable percutaneous disc decompression device (L'DISQ) in patients with lumbar radicular pain.

Methods: We evaluated the efficacy of L'DISQ with 23 patients (male=14, female = 9, mean age=44.17±13.00) who had visited Korea University Anam hospital rehabilitation department. All the patients had been diagnosed as herniated intervertebral disc through physical examinations and magnetic resonance image study. Patients who had prior surgery at herniated level, psychological issues, tumor, vertebral fractures and other peripheral neuropathies were excluded.

In contrast to most percutaneous nucleoplasty devices, the tip of L'DISQ can be curved to the desired angle under fluoroscopic guidance. Clinical outcome was analyzed by using visual analogue scale (VAS), straight leg raising (SLR) test, Oswestry disability index (ODI) and Roland-Morris disability questionnaire (RM), pain-related quality of life (Bodily Pain scale in Short Form-36 version 2, SF-36 BP), serially assessed before the procedures, at 1 week, 1month, 6 months, 1 year, and 2 year.

Results: The VAS fell from 7.00±1.41 to 2.23±1.97 scores at 2 year post procedure. The ODI fell from 46.27±17.75 to 15.90±13.15%, and the RM fell from 13.96±5.37 to 3.59±5.11 points. The SF-36 BP showed significant improvement from 34.25±7.17 to 50.00±7.42. No major procedure-related complications were reported.

Conclusions: This study suggests that decompression with L'DISQ device is relatively safe and effective in relieving pain and decreasing disability of patients with lumbar radicular pain.

(Ethics committee approval is attached.)

ESRA1-0096
Miscellaneous

QUALITY IMPROVEMENT PROJECT TO IDENTIFY AND IMPROVE THE ACCURACY OF COMPLETING CRASH TROLLEY CHECKLISTS

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Background and aims: Crash Trolleys are vital for providing Basic and Advanced Life Support. Poorly stocked Crash Trolleys can increase morbidity and mortality, and in addition, increase stress levels in an already difficult situation. Therefore, the Resuscitation Council UK recommended that the responsible Clinical Team must check the resuscitation equipment on Crash Trolleys daily. We aimed to perform a Quality Improvement project to identify the accuracy of these daily checks and make changes to improve results.

Methods: 5 Nurses and 5 Health Care Assistants (HCA) were assessed in their accuracy of marking the checklist. Several alternative items that were not on the checklist were placed in the Crash Trolleys. We produced a new checklist with pictures next to the item name and repeated the assessments. Comparisons in accuracy between using a checklist with no pictures, with one containing pictures, were made.

Results: The Crash Trolley checklists differed throughout the wards; 2 wards had out-of-date lists that were not compliant with current Resuscitation Council evidence. When assessing the accuracy of completion of the checklist with no pictures, the Nurses correctly identified all items, but the 3 HCA's made 5 errors. Re-evaluation following insertion of pictures on to the checklist showed 100% accuracy for both Nurses and HCA's.

Conclusions: The high staff turnover and requirement for bank staff resulted in staff that were unfamiliar with the equipment and the list. We speculate that introducing a Crash Trolley with pictures will result in a reduced intervention time at Cardiac Arrests, giving improved patient care.

ESRA1-0105
Peripheral Nerve Blocks

QUADRATUS LUMBORUM BLOCK II US GUIDED DESCRIPTION

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Background and aims: The original concept of an ultrasound-guided (USG) quadratus lumborum block (QLB) indicated for postoperative analgesia after abdominal surgery was conceived by Rafael Blanco (ESRA XXVI, 2007) known as posterior TAP block or QLB I. We describe USG QLB II a variation of the original block.

Methods: The patient's position is supine. A linear or convex probe is placed between the 12th rib and the iliac crest (fig 1). At this point the three layers of abdominal muscles are ending: the external, the internal and the transversus abdominis. Opposite to the abdominal muscles lay the quadratus lumborum muscle and above it the latissimus dorsi muscle (fig 2).

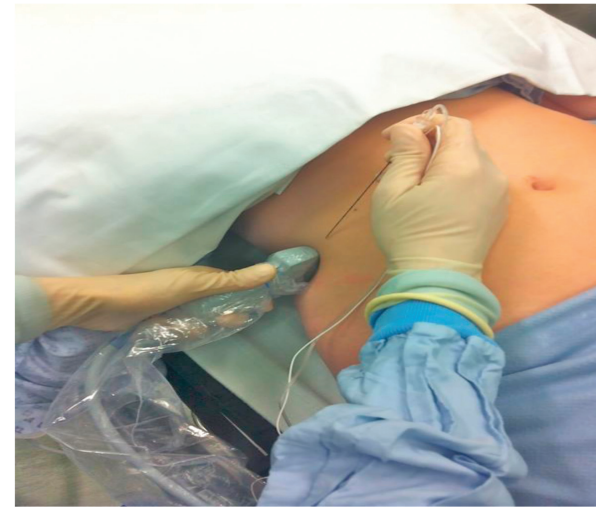

FIGURE 1.

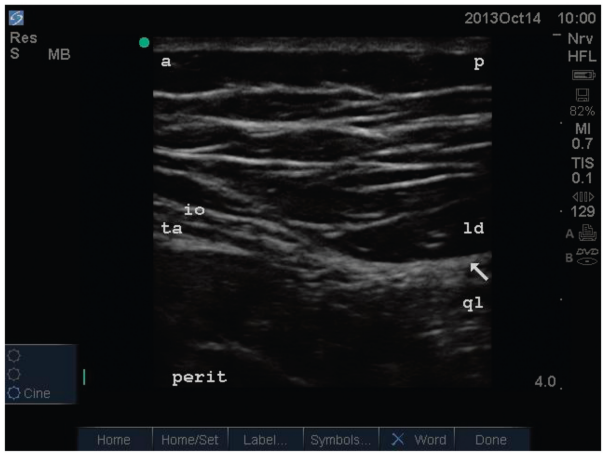

FIGURE 2.

An 80–100 mm needle is inserted in plane to the transducer and the tip of the needle is advanced to the posterolateral aspect of quadratus lumborum muscle, injecting the local anaesthetic 0.125% Levobupivacaine, 3.5–4 ml/kg between QL and latissimus dorsi muscle.

Results: The local anaesthetic spread reaches the paravertebral space. This provides pre, intra and postoperative analgesia for femoral neck fracture, abdominal surgery, LSCS and inguinal hernia.

Conclusions: This is one of the fascial trunk blocks. Good knowledge of sonoanatomy is essential to perform the block with safety.

ESRA1-0110
Case Reports

STELLATE GANGLION BLOCK FOR CONGENITAL VENOUS MALFORMATION OF THE UPPER LIMB

Woo A.[1], Vargulescu R.[1], Zyada A.[1]. [1]*Anaesthesia, Kings College Hospital, London, United Kingdom.*

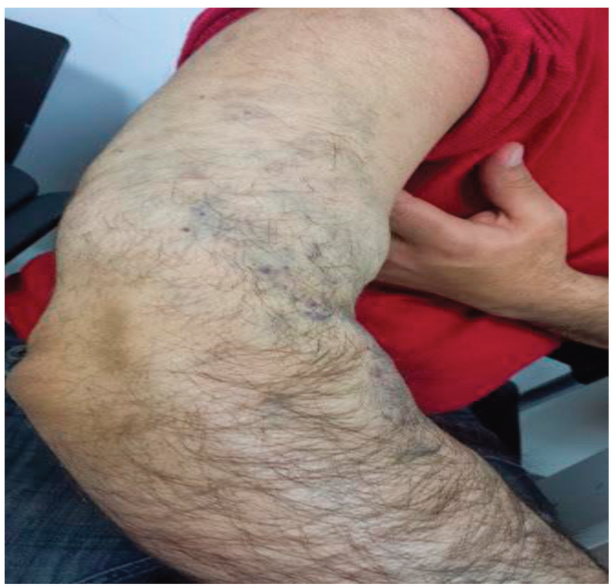

FIGURE 1.

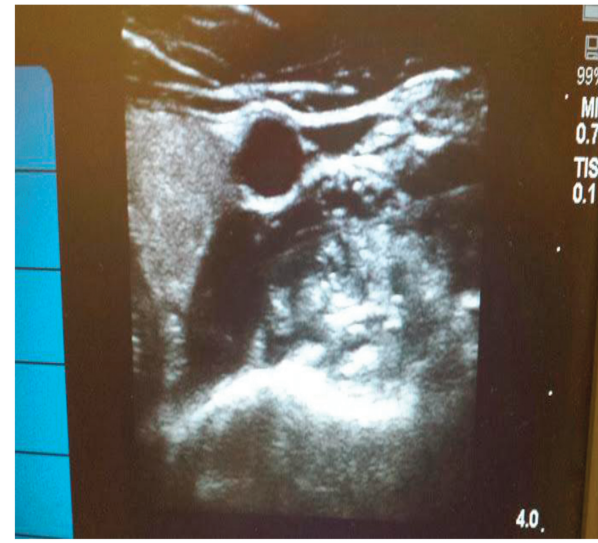

FIGURE 2.

Background and aims: A 27 year old male was referred by vascular surgeons for pain due to congenital venous malformation of the right forearm. This involved superficial tissues as well as infiltration of muscles, humerus and radius. The pain was described as burning and worse in the cold. He had tried many analgesics and was on pregabalin and ibuprofen with very mild analgesia but suffered side effects. He wakes up from sleep with pain.

Methods: Under local anaesthesia and ultrasound guidance a stellate ganglion block (SGB) was performed. Using an in-plane technique with a 21g sonoplex stim needle, a total of 5mls of .25% bupivacaine with 20mg of triamcinolone was injected at the C6 level superficial to the longus colli muscle.

Results: A ptosis and miosis was noticed 20 minutes after the injection. On follow up 6 weeks later he had stopped off all his analgesics and reported the pain as better by 80%. He no longer wakes up in pain.

Conclusions: SGB is known to be useful for arterial vascular insufficiency but to our knowledge this is the first case report of SGB for venous malformation. Its use should be explored in similar cases.

ESRA1-0111
Case Reports

OBSTETRIC ANESTHESIA FOR A PATIENT WITH BROWN-SÉQUARD SYNDROME AND EPILEPSY

Barros A.[1], Vico M.[1], Ventura C.[1], Assunção J.[1]. [1]*Anesthesiology, Centro Hospitalar Tondela-Viseu, Viseu, Portugal.*

Background and aims: Brown-Séquard is a rare syndrome characterized by an incomplete spinal cord lesion. Women with this condition presenting for obstetric anesthesia is even rarer, so evidence-based management of complicated cases is limited and treatment continues to be individualized with experience from case reports.

Methods: Case Report

Results: A 39 year old woman 37 weeks pregnant presented for c-section. She suffered a horse fall 18 years before with craneoencephalic and spinal cord injury at cervical level developing Brown-Séquard syndrome with left hemiparesia and loss of pain and temperature sensation on the right side of the body. Any algic cutaneous stimulus on the right side causes spasm of the musculature. She had a C2-C7 fixation plate with cervical movement limitation. Since 6 years ago she developed epilepsia controlled with levetiracetam. Seizure episodes occurred during pregnancy with need of dose adjustment. Whether we chose general or regional anesthesia there would be a unique set of challenges. We performed an epidural block in lateral decubitus. Initially the skin infiltration with local anesthetic elicited muscular spams, but later the

Tuhoy needle was inserted without problem. We used initially lidocaine 2% 140mg and ropivacaine 0,75% 37,5 mg, complemented by bolus as needed. C-section was performed uneventfully, postoperative period was calm and we verified the return to her previous neurologic condition.
Conclusions: Individual case reports may be the only available evidence relating to the effect of regional analgesia and anesthesia in this group of pregnant women. Regional blocks have been used in this context without any deterioration in their previous condition.

ESRA1-0116
Chronic Pain Management

PERIPHERAL SUBCUTANEOUS NERVE STIMULATION (PNFS) IN NEUROPATHIC, ORTHOPAEDIC PAIN - 8 YEARS OF EXPERIENCE

Koulousakis D.[1], **Koulousakis A.**[2]. [1]*Clinic of Neurosurgery, Academic Teaching Hospital of the TU Munich Bogenhausen, München, Germany,* [2]*Clinic of Stereotaxy and Functional Neurosurgery, University of Cologne, Cologne, Germany.*
Background and aims: After the introduction of stimulation techniques for the treatment of chronic pain by means of SCS and PNS in the 70s, PNS-stimulation for treating mononeuropathy, as well as sympathetic pain, underwent a renaissance.
Methods: We performed a "Periphere Field Nerve Stimulation" pilot study from May 2005 to February 2006 in 31 patients and due to the encouraging results in a further 45 patients mainly with neuropathic pain until January 2010.

Indication was a well described exactly localized area of pain. After the exclusion of radicular pain, this method was considered the first step of invasive pain therapy on the neurosurgical pain scale. Leads were implanted , allowing accessing the outer border of the pain area.

After a one-week trial-phase, the trial electrodes were removed and replaced by permanent subcutaneous electrodes, connected to a generator.

The patients were assessed, both post-operatively and after a follow-up period of 6 mo,12 mo and 3 years, using the VAS scale, Drug-reduction and improvement in QoL.
Results: Approximately 70% of the patients displayed a pain relief of more than 50% for a period of up to three years. We show an improvement in VAS as well in CSS by older patients with orthopedic problems like spinal stenosis. Since an adequate pain relief could not be achieved by either SCS or IDD, it can be assumed that simple subcutaneous stimulation can serve as a predictor for the complete invasive therapy.
Conclusions: PNFS is a simple, promising method, with the best indication being a well localizable pain.

ESRA1-0117
Peripheral Nerve Blocks

THE EVALUATION OF ANALGESIC EFFICACY OF ULTRASOUND GUIDED PREOPERATIVE THORACIC PARAVERTEBRAL BLOCK FOR LAPAROSCOPIC CHOLECYSTECTOMY SURGERY

Kosar B.[1], **Gurkan Y.**[1], Toker K.[1], Solak Z.M.[1]. [1]*Anesthesiology and Reanimation, Kocaeli University Faculty of Medicine, Kocaeli, Turkey.*
Background and aims: Although laparoscopic cholecystectomy (LC) is a minimally invasive surgical procedure, postoperative pain continues to be a common problem. The study aimed to evaluate the efficacy of preoperative paravertebral block (PVB) on postoperative pain and opioid requirements for the patients undergoing LC.
Methods: After obtaining ethical committee approval and written informed consent, 70 patients (ASA I–II), aged 18–70 scheduled for elective LC were included into this study. The study was prospective, randomized, single-blinded and the patients were divided into two groups. Control group was assigned to receive general anesthesia alone and PVB group received PVB before general anesthesia. Ultrasound guided PVB was performed at the T7 level using 20 ml of 0.5% bupivacaine. Patient controlled analgesia was performed using morphine iv in the postoperative period. Postoperative pain was measured using VAS for pain at 1, 6, 12, 24 postoperative hours. Statistical Analysis was performed using Student's t test and Mann Whitney U Test.
Results: Demographic data were similar in both groups. Morphine consumption in the first 24h period is significantly less in PVB group compared to the control group (median 7,5 mg and 19 mg in groups PVB and control respectively) ($p< 0,001$). VAS scores were lower in PVB group compared to the control group at 1h and 6h ($p<0.05$). Shoulder pain was not observed in PVB group while 3 patients had shoulder pain in the control group.
Conclusions: Single level ultrasound guided PVB reduced postoperative opioid consumption in patients undergoing LC.

ESRA1-0119
Peripheral Nerve Blocks

DOCUMENTATION OF REGIONAL ANAESTHESIA

Sinovich G.[1], Krol A.[1], Tredray A.[1], Tong D.[1]. [1]*Regional Anaesthesia, St George's Hospital NHS Trust, London, United Kingdom.*
Background and aims: For consent to be valid it must be voluntary and informed and documentation of the adequacy of this is a challenge. The person consenting must have the capacity to make the decision and discussion should be clearly documented for medico-legal purposes.[1]

We re-audited the quality of documentation of consent in a London Teaching Hospital after implementing readily accessible regional consent stickers on the various regional anaesthetic trolleys throughout the trust.
Methods: Conducted a re-audit of random sample of anaesthetic charts. Aim to assess if there was an improvement in documentation of consent after implementing the changes recommended from the previous audit. The audit did not require ethical approval.
Results: -Analysed 50 random set of notes of patients who had all undergone upper limb surgery, 35 in Day Surgery and 15 in Main Theatre. Of these, 40 had a peripheral nerve block and 10 had a general anaesthesia combined with a peripheral nerve block.

-Documentation from Day Surgery versus Main Theatre revealed the following:

:Block Failure, Nerve Injury, Prolonged Block, LA Toxicity, Infection, Care Mobilizing, and Difficulty in Breathing was documented in 35 notes (100%) versus 11 notes (73%).

:Adequacy of block documented in 34 notes (97%) versus 9 notes (60%).

:Site blocked documented in 33 notes (94%) versus 9 notes (60%).
Conclusions: Our audit showed that the quality of documentation of consent for regional anaesthesia has significantly improved throughout the trust since the introduction of the regional consent stickers. Future improvements could be achieved by having the consent stickers printed into the Anaesthetic charts.

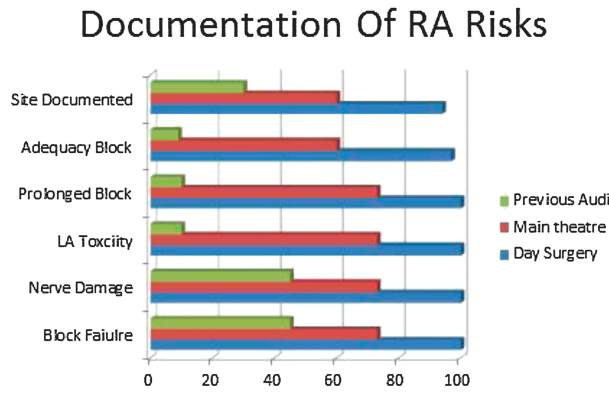

FIGURE 1.

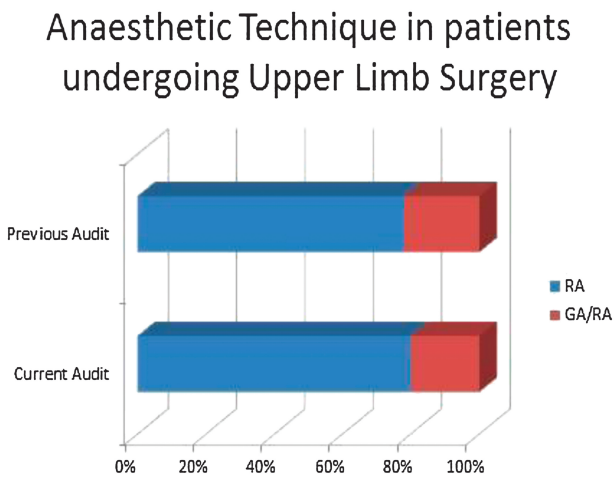

FIGURE 2.

References: 1. Consent for Anaesthesia,AAGBI guidelines, section 6.

ESRA1-0120
Peripheral Nerve Blocks

INFRACLAVICULAR BLOCK VERSUS AXILLARY BLOCK FOR UPPER LIMB SURGERY

Sinovich G.[1], Syeed K.[1], Krol A.[1], Tredray A.[1], Tong D.[1]. [1]*Regional Anaesthesia, St George's Hospital NHS Trust, London, United Kingdom.*

Background and aims: We sought to audit regional block techniques and performance for upper limb surgery in our day case unit.

Methods: We conducted a prospective audit of our practice in the Day Surgery Unit (DSU).We collected data on type of block performed, performance and onset times for operations confined to below the shoulder joint over a period of 2 months.

Results: 32 regional techniques were recorded. 20 Infraclavicular and 12 Axillary. Infraclavicular Blocks were found to be performed quicker than axillary blocks and tended to be performed with less requirements for sedation, further results are given in the table below:

	Infraclavicular Block	Axillary Block
Number of blocks performed	20	12
Average age of patient	46	43
Percentage of Patient seen in the pre-assessment clinic	12%	25%
Blocks done with sedation	37%	75%
Blocks done without sedation	66%	25%
Average Local anaesthetic Dose used	32ml	31ml
Performance time[1]	6 min	14min
Onset time [2]	15min	20min
Cumulative time[3]	21min	34min
Percentage that needed a supplement block	12%	37%
Percentage converted to GA	0%	12%
Motor score achieved after the block[4]	1	1
Time spent in recovery -Sedation group	14 min	15min
-No Sedation Group	< 5min	<5min

FIGURE 1.

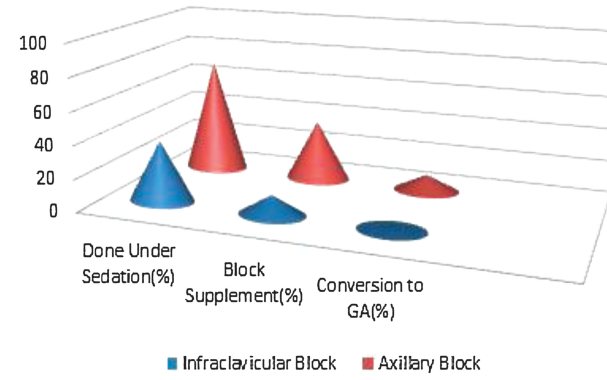

FIGURE 2.

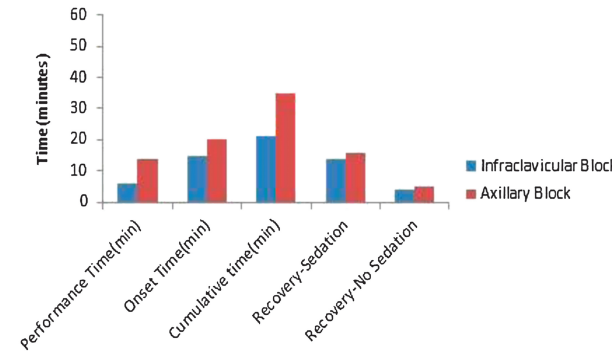

FIGURE 3.

[1]Performance time: time that the needle puncture the skin to the end of the local anaesthetic injection.

[2] Onset time: Removal of needle to complete sensory and motor block

[3]Cumulative time: Onset time to surgical knife to skin

[4]Motor Block: score 1-unable to move finger, 2-able to move fingers but weaker than other side, 3-equal strength in both hands

Conclusions: Infraclavicular blocks are quicker to perform and provide better analgesia cover than Axillary Blocks. Infraclaviculuar Blocks saved 13 minutes of theatre time per patient and if the patients had no sedation there would be a total of 22 minutes saved on theatre time per patient. There was a 100% satisfaction score recorded whether the patients had sedation or not during the procedure.

This could mean more patients could be done on a DSU list and thereby increase theatre efficiency requiring surgery below the shoulder joint.

ESRA1-0121
Peripheral Nerve Blocks

DIFFERENT TYPES OF LOCAL ANAESTHETICS USED IN INFRACLAVICULAR BLOCKS FOR UPPER LIMB SURGERY

Sinovich G.[1], Syeed K.[1], Krol A.[1], Tredray A.[1]. [1]*Regional Anaesthesia, St George's Hospital NHS Trust, London, United Kingdom.*

Background and aims: There are a number of different local anaesthetic mixtures available for regional blockade. We sought to audit our use of local anaesthetics during regional anaesthesia for upper limb surgery.

Methods: We conducted a prospective audit of our use of local anaesthetics in the Day Surgery Unit (DSU) in infraclavicular blocks for upper limb surgery. We also collected data on onset of surgical anaesthesia , time to resolution of block and patient experience.
Results: 24 Infraclavicular blocks were performed .There were mixtures of 1.5% Lidocaine, 1.5% Lidocaine with 0.5% Levobupivacaine, and 2% Lidocaine with 0.5% Levobupivacaine. The characteristics of the mixtures used are given in the table below:

	1.5% lidocaine	1.5% lidocaine plus 0.5% Levobupvaciane	2% lidocaine plus 0.5% Levobupvacaine
Number of cases that the mixture was used in	13	7	4
Onset Time [1]	13 min	19min	17min
Cumulative Time[2]	19min	25min	24min
Motor score achieved [3]	Score 1	Score 1	Score 1
Rescue analgesia in recovery	None	None	None
Extra Analgesia requirement 24hrs post surgery	53%	28%	26%
Time heaviness of Arm disappeared	4.5hrs	6.4hrs	7hrs
Time feeling returned to fingers	7.5hrs	15hrs	12hrs
Sleep Disturbance	None	None	None
Any complications	None	Episode Bradycardia	None

FIGURE 1.

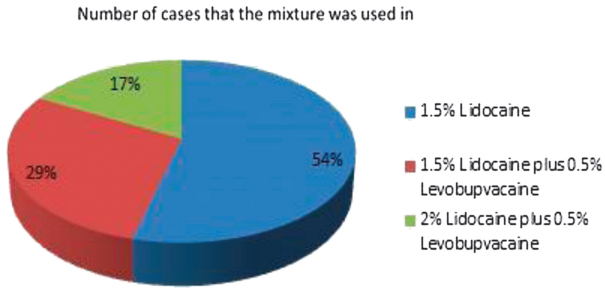

FIGURE 2.

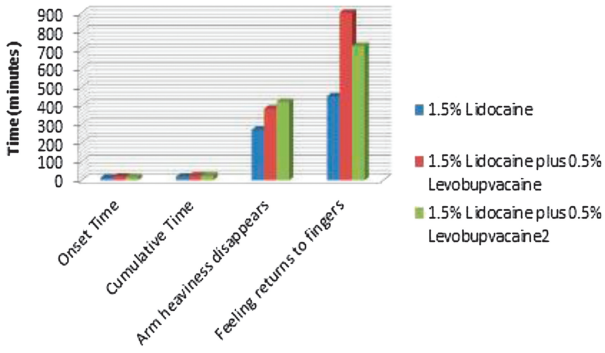

FIGURE 3.

[1] Onset time: Removal of needle to complete sensory and motor block
[2]Cumulative time: Onset time to surgical knife to skin
[3]Motor Block: score 1-unable to move finger, 2-able to move fingers but weaker than other side, 3-equal strength in both hands
Conclusions: 1.5% Lidocaine provided the quickest onset surgical anaesthesia, but those patients required more analgesia in the first 24 hours post-surgery, 2% Lidocaine plus 0.5% Levobupvacaine seems to provide the most effective onset time while maintaining the effects of the analgesia 24 hours post-surgery.
The Mixture of Local Anaesthetic used has to be tailored to the duration and complexity of the Surgery being done.

ESRA1-0123
Peripheral Nerve Blocks

TYPES OF ANAESTHESIA FOR UPPER LIMB SURGERY

Sinovich G.[1], Syeed K.[1], Tredray A.[1], Krol A.[1], Tong D.[1]. [1]*Regional Anaesthesia, St George's Hospital NHS Trust, London, United Kingdom.*

Background and aims: Practice of regional anaesthesia is becoming more popular after the introduction of ultrasound. The biggest obstacle in conducting regional anaesthesia is the delay in operating room time and the unpredictable success of nerve blocks.
Methods: Conducted a retrospective audit of random sample of patients having upper limb surgery in Day Surgery Unit. Primary aim to assess type of anaesthesia given, performance time, time spent in recovery and patient satisfaction score. No ethical approval needed.
Results: −65 patients, were sampled ,13 had GA, 7 had GA+block, 15 had sedation+block, 30 had regional block.
-The average performance time (in minutes) was 4.6 (GA only), 11 (GA +block), 8.5 (sedation+block) and 7.2 (block only).
- The total time from obtaining iv access in the anaesthetic room to patient being ready for surgery (in minutes) on average was 12.8 (GA only), 20 (GA +block), 27.3 (sedation+block), 22.6 (regional block only).

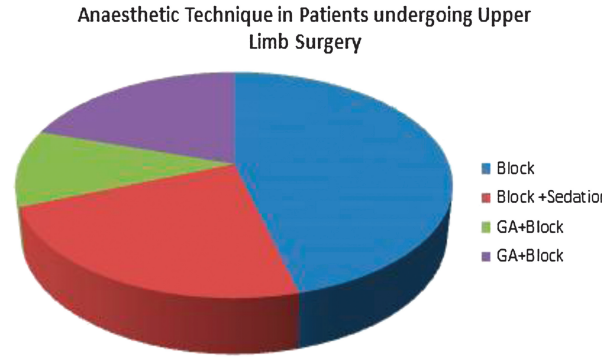

FIGURE 1.

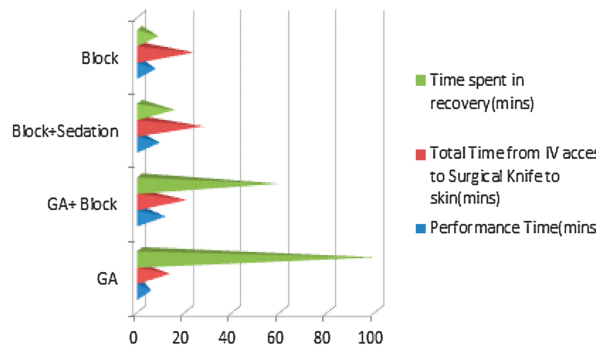

FIGURE 2.

-Average time spent in recovery (in minutes), 94.2 (GA only), 58.6 (GA +block), 14.9 (sedation+block) and 7.6 (regional block only). The GA patients experience more pain ,nausea and vomiting,

−100% patient satisfaction score regardless of the technique

Conclusions: GA has a shorter performance time and onset time but a disproportionately longer period of time in recovery. Regional anaesthesia allows patients to be discharged home quicker and required less analgesia especially in the first 24 hours. The results highlight a need for a separate block area to be developed which would improve theatre efficiency and thereby reducing NHS patient waiting times for surgery.

ESRA1-0125
Case Reports

EPIDURAL HAEMATOMA AFTER SPINAL BLOCK IN A PATIENT TREATED WITH THREE DOSES OF CLOPIDOGREL

Novacek M.[1]. [1]*Anaesthesia and Critical Care, General Hospital in Kolin, Kolin, Czech Republic.*

Background and aims: 77 years old woman received spinal block for femoro-popliteal bypass due to superficial femoral and popliteal artery closure.

Methods: Because of artery closure, dual antiplatelet therapy was started six days before the operation. This involved clopidogrel 75 mg and Acetylosalicylic acid 100 mg. The three doses of clopidogrel (last dose was given three days before the surgery) were inadvertently disregarded in pre assessment clinic.

Results: Spinal block using 23-gauge Quincke needle was performed. At the level L 4–5 first attempt failed because of bone contact, second puncture was performed uneventfully and 2.2 ml of Marcain Spinal 0.5% Heavy was injected. During the surgical procedure bolus of 7500 IU of unfractionated Heparin was given and after 30 minutes subsequently antagonized with 7500 IU of Protamin ME. On the morning of the second day after the surgery patient complained of weakness and sensory loss of both lower limbs. Lower paraplegia was diagnosed by a neurologist. Emergency magnetic resonance showed large spinal epidural haematoma T9 – L2. Patient was transferred to the university hospital and urgent laminectomy was performed. Motor and sensitive block up to T 10 was documented, AIS C. Four months after laminectomy patient was able to walk about 50 meters with a Zimmer frame.

Conclusions: The risk of epidural haematoma after spinal anaesthesia increases in patient who receive anti-coagulants. In our case patient received dual antiplatelet therapy and unfractioned heparin during the surgical procedure. Therapy – free interval of 7 days for clopidogrel was no observed.

ESRA1-0126
Case Reports

THE ROLE OF MODIFIED PECTORAL NERVES (PECS) BLOCK IN BILATERAL SIMPLE MASTECTOMY

Phoon H.Y.P.[1], Tay C.Y.W.[1], Ng O.[1], Chan X.H.D.[1]. [1]*Anaesthesiology, Singapore General Hospital, Singapore, Singapore.*

Background and aims: The modified PECS block is a novel interfascial plane block which can provide analgesia during and after breast surgery. We report a case of a 46-year-old Chinese female with right breast carcinoma who underwent bilateral simple mastectomy and received bilateral modified PECS blocks as part of her analgesic regimen.

Methods: This was a ASA 1 patient (weight 48.4kg) from whom informed consent was obtained. Bilateral modified PECS blocks under ultrasound guidance were done after induction of general anaesthesia. Each modified PECS block consisted of 10ml bupivacaine 0.175% injected between pectoralis major and pectoralis minor muscles and another 20ml bupivacaine 0.175% in-between pectoralis minor and serratus anterior muscles. IV morphine 1mg bolus was given if mean arterial blood pressure (MAP) or heart rate exceeded 20% of the pre-operative value.

Results: A total of IV morphine 4mg and IV paracetamol 1g was given for intra-operative analgesia. Post-operative sensory level testing with ice pack in the post-anaesthetic care unit (PACU) showed reduced sensation in bilateral T2-T4 dermatomes extending towards the axillae. Numerical rating score (NSR) was recorded every 6 hours for the first 24hrs. NSR at rest was 0 for the first 24hrs and 2 on movement at 18 and 24hrs. No oral analgesics was required in the first 12hrs post-operatively. There was no post-operative nausea or vomiting.

Conclusions: The modified PECS block is a useful analgesic adjunct for reducing both intra- and post-operative pain after bilateral breast surgery. Decreased opioid consumption can lead to better side-effect profile and enhance patient recovery.

ESRA1-0127
Peripheral Nerve Blocks

WHICH IS MORE SUFFICIENT FOR OPEN REDUCTION AND INTERNAL FIXATION OF HIP FRACTURE IN ELDERLY PATIENTS , ULTRASOUND GUIDANCE LPB OR CLSB?

Jiang W.[1], Zhao D.Q.[1], Zhou Q.H.[1]. [1]*Department of anesthesiology, Shanghai Jiaotong University Affiliated Sixth People's Hospital, Shanghai, China.*

Background and aims: Lumbar plexus block(LPB) or combined lumbar and sacral plexus block(CLSB) could be performed during surgery of hip fracture, but which nerve block is more sufficient has no conclusion. The aim of this study was to evaluate which nerve block was sufficient for this surgery in elderly patients, LPB or CLSB; and to assess target-controlled propofol infusion(TCI) as a technique of anesthesia for surgery of hip fracture in elderly patients under ultrasound guidance LPB or CLSB.

Methods: Sixty patients(>70 years old)with ASA physical status of II–III, scheduled for surgery of hip fracture randomly received ultrasound guidance LPB(LPB group, n=30) or CLSB(CLSB group, n=30).TCI was started immediately after positioning the patient on the fracture table. The minimal, maximal, optimal target concentration, cumulative propofol dose, postoperative visual analog scale(4th,8th,16th,24 th hour), morphine consumption were recorded.

Results: The minimal, maximal, optimal target concentration and cumulative propofol dose in LPB group were significantly higher than those in CLSB groups.14 patients in LPB group had representation of sacral plexus block and the other 16 patients didn't have. The minimal, maximal, optimal target concentration and cumulative propofol dose in these 14 patients in LPB group were significantly higher than those in the other 16 patients in LPB group. There was no significant difference between two groups in postoperative visual analog scale(4th,8th,16th,24thhour),morphine consumption.

Conclusions: For the surgery of hip fracture in elderly patients , CLSB is more sufficient than LPB. In addition,TCI as a technique of anesthesia for surgery of hip fracture in elderly patients under ultrasound guidance LPB or CLSB is efficacious.

ESRA1-0133
Case Reports

ULTRASOUND-GUIDED RETROGRADE INTUBATION

Vieira D.[1], Lages N.[1], Maria L.[1], Dias J.[1], Correia C.[1]. [1]*Anesthesiology, Centro Hospitalar Alto Ave Guimarães, Guimarães, Portugal.*

Background and aims: Retrograde intubation is included in the difficult airway algorithm of the American Society of Anesthesiologists and has been used successfully in pharyngeal and laryngeal tumour surgery. The use of ultrasound in airway management is growing applications once the trachea and paratracheal soft tissues can be examined with ultrasound probes due to their superficial position.

Methods: The authors present a case report that demonstrates the applicability of ultrasound in retrograde intubation. A 63-year-old male patient presents with ulcer-vegetating neoformation of the oropharynx and hypopharynx that required tracheostomy. Ultrasound-guided bilateral superior laryngeal nerve block and trans-cricothyroid membrane block relieved stridor and permitted laryngoscopy, which revealed a vegetating, haemorrhagic tumour that preclude the view of the glottis. Under ultrasound guidance, a 16-G Tuohy needle was

inserted into the tracheal lumen via the cricothyroid membrane, through which a guidewire was inserted past the tumour, emerging into the oral cavity. A 6.5-mm orotracheal tube was maneuvered into position using traction applied to the guidewire once fixed to the Murphy's eye of the tube.
Results: Tracheal intubation was confirmed by capnography, general anesthesia induced and tracheostomy performed successfully.
Conclusions: Ultrasound demonstration of the trachea and surrounding structures increases the success rate of correctly locating the Tuohy needle tip in the tracheal lumen. It may also decrease the likelihood of complications compared with 'blind' retrograde intubation, although further studies are required to confirm these benefits. The authors consider that, for this case, ultrasound was a valid tool and may in the future be applied in similar situations.

ESRA1-0134
Case Reports

ULTRASOUND GUIDED PSOAS BLOCK USING SHAMROCK METHOD FOR DEVELOPMENTAL DYSPLASIA OF THE HIP: CASE REPORT

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Background and aims: Surgical procedures for developmental dysplasia of the hip (DDH) in pediatric population present a challenge to the anesthesiologist for postoperative analgesia as these procedures produce significant pain. Systemic analgesics and regional methods could be used for postoperative analgesia. Psoas compartment block is one of the regional methods and it was shown as an effective way of providing analgesia in children undergoing hip surgery (1).
Methods: A 4-year-old patient with DDH was scheduled for Pemberton osteotomy for right hip who had been operated for meningomyelocele and has a ventriculoperitoneal shunt for hydrocephalus. Psoas compartment block (PCB) was performed to provide postoperative analgesia. Lumbar plexus was easily visualized using Shamrock method and the block was performed under real time USG under general anesthesia in lateral decubitus position (2) (fig 1). Surgical procedure lasted for 2 hours without any complications. The time for the first analgesic was 6 hours after the surgery. The patient was in a quiet and peaceful mood for first 24 hours after the surgery.
Results: Regional methods like caudal, epidural or psoas compartment blocks are used for maintaining the postoperative analgesia after hip surgeries in pediatric population. Patients operated for meningomyelocele have a changed anatomy due to the surgical site.
Conclusions: We think that USG PCB using Shamrock method is an effective and safe method for analgesia for patients with difficult anatomy.

ESRA1-0140
Chronic Pain Management

CONTINUOUS SUPRASCAPULAR NERVE BLOCK IN THE MANAGEMENT OF FROZEN SHOULDER

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Background and aims: Frozen shoulder is a condition characterized by stiffness and pain in the shoulder. Treatment focuses on pain control and improving motion using physical therapy. Continuous suprascapular nerve block (CSB) with local anaesthetic allows pain free shoulder manipulation. However, long-term effects of CSB on the outcome of such patients have not yet been assessed. The aim of this retrospective study was to determine the effects of CSB combined with physical therapy on the outcome of patients with frozen shoulder.
Methods: With the ethics committee approval, we reviewed 24 records of patients with frozen shoulder whose condition had not improved for 12 months with conventional treatment. These patients received a CSB. Ropivacaine 0.2% was continuously infused via a catheter for 9 days. During the infusion, the patients received standardized physical therapy. Pain and range of motion of the shoulder were assessed before initiating the block, at the end of the infusion period and 3 months after. Adverse events were also recorded.
Results: In 2 patients the catheter was withdrawn before the 9th day because of signs of infection at the site of catheter insertion. In the 22 remaining patients, pain and shoulder motion were improved at the 9th day and 3 months later. No significant difference was observed between the latter two time points.
Conclusions: These results suggest that the combination of CSB and physical therapy may be beneficial in patients with frozen shoulder. Further randomized studies are needed to confirm the results of this pilot study.

	Results in degree (data are median [95% CI])		
	Before nerve blockade	At the end of local anaesthetics infusion	3 months after local anaesthetics infusion
Anterior elevation	90 [83-99]	115 [112-131] *	125 [112-143] *
Abduction	55 [53-75]	97 [88-118] *	100 [96-134] *
External rotation	7.5 [7.1-21]	30 [26-44] *	45 [28-49] *

** $p < 0.001$ versus before nerve blockade*

FIGURE 1.

ESRA1-0144
Postoperative Pain Management

A COHORT STUDY COMPARING CONTINUOUS VERSUS PATIENT-CONTROLLED EPIDURAL ANESTHESIA IN A THIRD LINE HOSPITAL

van Samkar G.[1], Lirk P.[1], Hollmann M.W.[1], Stevens M.F.[1]. [1]*Anesthesiology, Academic Medical Center, Amsterdam, Netherlands.*
Background and aims: Postoperative epidural anaesthesia can be inadequate and often needs to be readjusted by increasing the speed of infusion, combined with top ups of local anaesthetics, given by a physician, manually. Continuous epidural anaesthesia (CEA) is said to provide less effective analgesia than patient controlled epidural anaesthesia (PCEA).
Methods: In a cohort study, we prospectively analysed patients receiving CEA or PCEA. Our aim was to reduce the number of physician intermediated (PI) top ups. Primary endpoint was the difference in number of (PI) top ups. Secondary endpoints were pain scores, side effects and opiate usage. A waiver for the study was provided by the institutional medical ethics committee (W14-051 # 14.17.005).
Results: 281 patients with CEA and 115 patients with PCEA were analysed. Pain scores were similar in both groups. The frequency of (PI) top ups was 26.6% in patients with CEA versus 12.1% in patients with PCEA. ($p = 0.002$, Chi Square test) Side effects (nausea, sedation, itching) were more frequent in patients with CEA.
Conclusions: The reduction in (PI) topups through PCEA, leads to decreased time investment by medical and nursing staff. Therefore PCEA is more efficient than CEA.

ESRA1-0149
Postoperative Pain Management

COMPARISON OF THE EFFECT OF ONDANSETRON AND COMBINED ONDANSETRON AND BETAHISTINE ON PONV AFTER GYNECOLOGICAL LAPAROSCOPY

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Background and aims: Postoperative nausea and vomiting remain the most common adverse events following anesthesia, and analgesia, with an estimated incidence of 70-80% among high risk group. Betahistine, an analog of histamine with H_1 agonist and H_3 antagonist activity, is effective anti-vertigo treatment for its H_1-mediated vasodilatation and H_3-related histamine synthesis. Despite the lack of explanation for its mechanism, betahistine has been shown to be effective in decreasing vertigo and preventing PONV. This study focused on the role of combined ondansetron and betahistine on PONV after gynecological laparoscopy surgery, the highest risk surgery for PONV.
Methods: Eighty-eight patients scheduled for gynecological laparoscopy surgery were randomly assigned to two groups, ondansetron (O) or ondansetron with betahistine (OB). Patients received either placebo or betahistine 18mg at three hours before and 24 hours after the surgery. Both group of patients received 4mg of ondansetron 15 minutes before the end of surgery. Patients were evaluated for the incidence and degree of PONV, pain, dizziness at 30 minutes, 1–6, 6–24, 24–48 hours postoperatively.
Results: The overall complete response for PONV was higher in the group OB, compared with the group O (67 vs 33%, p=0.068). The overall complete response for dizziness was higher in the group OB, compared with the group O (76 vs 39%, p=0.013). There were no significant differences in the needs for rescue antiemetics, postoperative pain score, and the Quality of recovery score-40.
Conclusions: Betahistine as an add-on to ondansetron can significantly reduce PONV and perioperative dizziness after high PONV risk gynecological surgery.

ESRA1-0153
Miscellaneous

REGIONAL AGAINST GENERAL ANESTHESIA IN BREAST SURGERY THE IMPORTANCE OF BEING EARNEST

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Background and aims: Breat surgery can be performed using general or regional anesthesia. When combined to sedation, PECS II block, allows to keep the patient in spontaneous breathing, decreases the incidence of general anesthesia complications, the drugs adopted, recovery times and cost of operating room, increases the patient safety.
Methods: We considered 112 breast interventions implemented in our Operative Rooms (January-March 2014). The interventions were divided according to anesthesia technique; then we recorded the times of induction and recovery from anesthesia and calculated the average time of and their standard deviation.
Results: Regional anesthesia is safer and reduces operative room times. Furthermore, a significant time sparing was recorded in breast surgery performed under regional anesthesia. Induction and awake time during general anesthesia had shown a 21 min average (±7 min SD); while we recorded a 11min average (±5 min SD) during regional anesthesia. The effectiveness of the techniques of regional anesthesia and a smart organization of operating room can lead to these results. Before surgery, in the pre-operating room it is possible to perform peripheral nerve blocks safely through patients' continuous monitoring, without affecting final surgical time; while after surgery, a nurse observes the patient in the PACU and signal pain signs.
Conclusions: PECS II block in breast surgery has leaded to an improvement in the efficiency of the use of operating room. A mean of 10 min time sparing has been recorded for each intervention. The operative room organization remarks its importance and regional anesthesia starts to be the earnest solution also in breast surgery.

ESRA1-0155
Case Reports

EPIDURAL ANAESTHESIA FOR CAESAREAN SECTION IN A PATIENT WITH SEVERE AORTIC STENOSIS AND TWIN PREGNANCY FROM OVODONATION: CASE REPORT

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Background and aims: Anaesthesia for caesarean section in patients with severe aortic stenosis and twin pregnancy is at very high risk of mortality from the pathophysiology of the cardiac lesion, cardiovascular changes of pregnancy and haemodynamic anaesthesia-related aberrations. With the patient's consent, we present a report of successful epidural anaesthesia in such a case.
Methods: After multidisciplinary consultation, at onset of labour a 44-yr-old primigravida, pregnant with podalic-presenting twins from ovodonation, with severe bicuspid aortic valve stenosis (area: 0.5 cm^2; peak gradient: 80–90 mmHg; mean gradient: 30–40 mmHg), left ventricular hypertrophy and preserved ejection fraction was scheduled for caesarean section at 34 weeks gestation. In the presence of a cardiac surgical team, after invasive cardiac monitoring and prophylactic right femoral artery and vein catheterization in the urgency of ExtraCorporeal Membrane Oxygenation (ECMO), epidural anaesthesia was performed in two divided doses with lidocaine 80 mg + levobupivacaine 40 mg + fentanyl 100 mcg. Phenylephrine was infused at 0.3 – 0.6 mcg/Kg/min to prevent hypotension.
Results: Two healthy infants (a male and a female) were delivered. No haemodynamic instability was observed and the caesarean section was without complications. In the Intensive Care Unit (ICU) the postoperative course was complicated only by basal pleural effusion without hemodynamic worsening. The patient was discharged from ICU on postpartum Day 7 and from hospital on postpartum Day 9. The follow up echocardiogram conducted before discharge was unchanged.
Conclusions: Epidural anaesthesia performed under cardiac monitoring is effective and safe also in severe aortic stenosis.

ESRA1-0156
Peripheral Nerve Blocks

RETROBULBAR ULTRASOUND VIEW FOR REAL-TIME ULTRASOUND-GUIDED BLOCKADE: A CASE SERIES.

Martín Lorenzo M.C.[1], Montón Giménez N.[1], González Fariña V.[1], **Martínez Parra L.M.**[1], Pineda ´Bolívar P.A.[1], Montón Giménez C.[2], Ferrer Pallás A.[1]. *[1]Anesthesiology, Hospital Universitario de Canarias, Tenerife, Spain, [2]Ophtalmology, Hospital De la Cruz Roja, Madrid, Spain.*
Background and aims: Retrobulbar anaesthesia allows eye surgery in awake patients. Ultrasound-guided needle introduction and direct visualization of the spread of local anaesthetic may improve quality and safety of retrobulbar anaesthesia.
Methods: After patient consent, we collect4 patients diagnosed with cataract and 2 with retinal detachment. The ultrasound device used was a Quantel Medical ® (Compac Touch) with a 10 MHz curved array transducer. The ultrasound transducer was placed over the eyelid. During injection, the spread of the fluid could be observed by real-time sonography.

The injection was performed in the inferotemporal cuadrant with a 25 gauge needle (Stimuplex â D Plus, Braun, Melsungen, Germany) . We injected 4 ml of local anesthetic mixture consisted of equal proportions of lidocaine 1% and bupivacaine 0,5%.
Results: Results are described in table 1. In all 6 cases, the placement of the needle and the infiltration of the local anesthetic could be easily visualized during the whole procedure. We obtained overall block in all cases and total akinesia in 2 and parcial in 4 cases.
Conclusions: The ultrasound-guided technique improve safety and efficacy of the procedure by direct visualization of the needle placement and the distribution of the injected fluid. Furthermore, the precise injection near the optic nerve could lead to a reduction of the amount of the local anaesthetic needed decreasing complications.

	Case1	Case 2	Case 3	Case 4	Case 5	Case 6
Age (years)	73	62	73	54	54	61
Surgery procedure	cataract	cataract	retinal detachment.	retinal detachment.	cataract	cataract
Axial Lenth diameter (mm)	21,3	23,05		25	23,01	24,88
ASA	III	III	III	II	II	II
Surgery time (min)	45	55	65	210	30	40
Needle profundity (mm)	35	35	35	35	35	35
Local anesthetic volumen (ml)	4	4	4	4	4	4
Ocular anesthesia	total	total	total	parcial	total	total
Ocular akinesia	total	parcial	total	parcial	parcial	parcial

FIGURE 1.

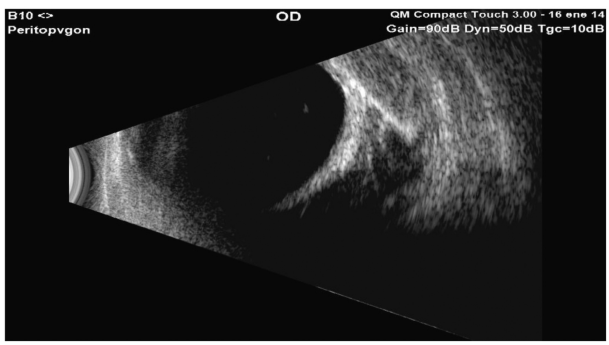

FIGURE 2.

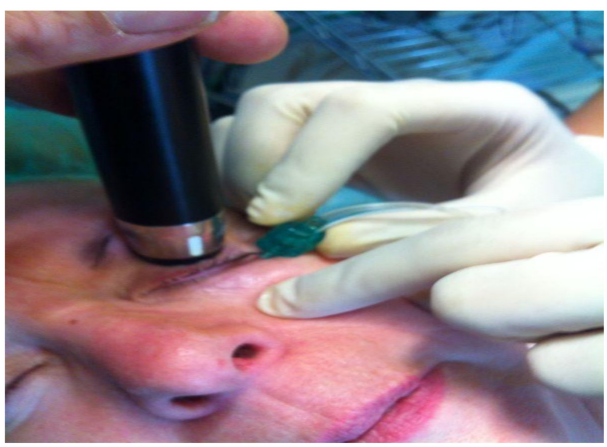

FIGURE 3.

ESRA1-0158

Postoperative Pain Management

POSTOPERATIVE THORACIC EPIDURAL ANALGESIA; A PROSPECTIVE AUDIT OF 1,515 PATIENTS

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Background and aims: Postoperative epidural analgesia has been shown to have a significant impact on morbidity and length of hospital stay. If properly managed by acute pain teams, it is well established as a highly effective and safe method when used on surgical wards. We report our experience along complications incidence in 1,515 patients during a period of 51 months.

Methods: Epidural catheters (20G BBraun Epidural Perifix ®) were inserted via 18 G Tuohy needle at a spinal level appropriate for the proposed surgery. All patients received 0.2% ropivacaine with 2 μg.ml-1 fentanyl prepared in elastomeric pumps with adjustable flow rate. Every 8 h the acute pain team nurse recorded pain, sedation, nausea, respiratory depression, hypotension, weakness and tingling in the legs. The initial infusion rate (mean 5ml/h) was modified daily in response to patients' pain or side-effects.

Results: Median (range) age of the patients was 67 (17–94) years. The duration of catheter placement was 5.0 (2–14) days. Sites of surgery were: colorectal 613(40%); upper abdominal 371(25%); urology 472(31%); thoracic 50(4%). The maximum pain score was <3 in 1408 (93%) patients. Complications occurred in 198 patients (13%) as follow: catheter accidental removal/disconnected 108 (7.1%); insertion site subcutaneous swelling 27 (1.7 %); weakness 6 (0.4%); hypotension 23(1.5%); nausea 18(1.2%); sedation 12(0.8%); postepidural headache 3(0.2%). There was a case of epidural abscess that led to an emergency laminectomy. There were no cases of epidural hematoma or respiratory depression.

Conclusions: Postoperative thoracic epidural analgesia with ropivacaine/fentanyl is effective and can be properly managed in surgical wards with minimal complications.

ESRA1-0163

Case Reports

ULTRASOUND GUIDED PARASTERNAL CATHETERS FOR MANAGEMENT OF STERNAL FRACTURE PAIN

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Background and aims: Sternal fracture pain can impair respiratory function leading to morbidity and mortality. Opioid and NSAIDs cause numerous complications in elderly patients. Regional anaesthesia techniques may offer a solution. We report the first case of ultrasound to place a periosteal catheter over a sternal fracture haematoma to manage pain effectively.

Methods: A 92-year-old female sustained a sternal fracture after a car accident. Opioid analgesia resulted in confusion and drowsiness. NSAIDs were contra indicated. Her only analgesia was Paracetamol. Inadequate pain control led to respiratory insufficiency and hypoxia. She could not tolerate chest physiotherapy or mobilization. Under aseptic conditions and ultrasound guidance, a periosteal catheter was placed over the fracture haematoma using an 18G Touhy needle. 3 cm of catheter was left above the haematoma. The catheter was tunneled for comfort and prevent migration. 10 mls of 0.5% L-bupivacaine reduced the pain score from 10 to 0/10. A continuous infusion of 0.1% L-bupivacaine at 5 ml/hour provided excellent analgesia. Oxygen supplementation stopped after 12 hours. She was mobilized by physiotherapy and discharged after 5 days with no respiratory complications.

Results:

FIGURE 1.

Conclusions: Whilst the placement of periosteal catheters has been previously documented, use of ultrasound to direct precise placement has not been described before. Since the use of ultra sound is becoming very popular, this technique can be easily adapted.

ESRA1-0168
Postoperative Pain Management

A COMPARISON OF TWO DIFFERENT CONCENTRATIONS OF LEVOBUPIVACAINE IN CONTINUOUS FEMORAL BLOCK FOR POSTOPERATIVE ANALGESIA AFTER TOTAL KNEE REPLACEMENT

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Background and aims: To study the minimum effective concentration of levobupivacaine in continuous femoral block after TKR.

Methods: This is a prospective, randomized, double blind study. We studied 48 patients, ASA II-III who were scheduled for TKR. All patients had spinal anaesthesia for the operation. In the PACU after sensory and motor blockade had worn off a femoral block was performed with a nerve stimulator using an aseptic technique. The patients were randomly allocated in two groups. Group A received 20 ml bolus dose levobupivacaine 0.5% and a continuous infusion of levobupivacaine 0.125% with a rate of 5ml per hour for 26h. Group B received 20 ml bolus dose levobupivacaine 0.25% and a continuous infusion of levobupivacaine 0.0625% with a rate of 5ml per hour for 26h. Both groups received PCA pethidine. The consumption of pethidine and the evaluation of pain according to the VAS scale were recorded 2 hours after initiation of the analgesia and then every 4 hours for the first 26 hours.

Results: There were no statistical differences of the pethidine consumption between the two groups. The average pain score was the same in both groups. There were no complications attributable to the femoral block.

Conclusions: The levobupivacaine of 0.0625% used for femoral block had equally analgesic effect as the levobupivacaine of 0.125% and there were no side-effects. We consider that the more diluted local anaesthetic can be used with the same efficacy in femoral block for postoperative analgesia in Total Knee Replacement.

ESRA1-0169
Chronic Pain Management

ANALGESIC EFFECT OF EPIDURAL INJECTION OF STEROIDS/LOCAL ANAESTHETIC/ADHESIOLYTIC AGENTS DURING EPIDUROSCOPY IN PATIENTS WITH DISEASE OF SPINE

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Background and aims: It is used a relatively new minimally invasive diagnostic and therapeutic procedure, epiduroscopy with the use of a flexible endoscope. For the pain relief of the patients, we performed targeted epidural injection of steroids/local anaesthetic/adhesiolytic agents in combination with endoscopic adhesiolysis. It was investigated the immediate, long-term results and epiduroscopic findings.

Methods: Contraindications were patients with coagulopathies, severe renal failure, pregnancy and patients under treatment with anticoagulants. The surgical technique included the introduction of a flexible endoscope to the epidural space via the sacral hiatus, under local anaesthesia, sedation and fluoroscopy. Mechanical adhesiolysis was performed with an endoscope and the infusion of N/S 0,9%. At the end, in the epidural space were targeted injected steroids/local anaesthetic/adhesiolytic agents.

Results: We studied 94 patients (16 have had FBSS, 11 foraminal stenosis, 49 spinal stenosis and 18 disc herniation) median age 67 years old. The decision for the further treatment was based to the epiduroscopic findings. In all cases we observed immediate relief to the symptoms after epiduroscopy for a variable period of time, 74% of the patients were relieved from their symptoms 4 months to 2,5 years. 2 patients were further treated surgically.

Conclusions: Epiduroscopy is a safe diagnostic method and it can be used as a therapeutic treatment option if conservative treatment fails. Our findings of epiduroscopy corresponded to the symptoms of the patients. Especially in elderly patients and patients who can't be operated is a good alternative.

ESRA1-0171
Central Nerve Blocks

BENEFICIAL EFFECTS OF REGIONAL ANESTHESIA ON OUTCOME AFTER MAJOR SPINAL FUSION

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Background and aims: The aim of prospective, randomized, comparative study was to assess the effects of two anesthetic methods on surgical outcome in patients undergoing major spine surgery.

We hypothesized that continuous epidural anesthesia after major spine surgery could impact on blood loss, postoperative pain and morbidity.

Methods: 335 patients were randomly allocated to two equal groups as follows: Group E (n=170) had continuous epidural analgesia and endotracheal anesthesia with sevoflurane during surgery and continuous epidural analgesia with ropivacaine, fentanil and epinephrine after surgery; Group G (n=165) had general anesthesia with sevoflurane and fentanil and systemic administration of opioids after surgery. Blood loss, coagulation and systemic hemodynamic parameters, demographics, pain at rest and in motion and morbidity were assessed before, during and after surgery and on postoperative days.

Results: The study has demonstrated that in Group E intraoperative blood loss has significantly decreased on 50% (568 ml, p=0.0013). Noninvasive hemodynamic monitoring has shown that EA did not lead to life-threatening disorders in myocardial contractility, cardiac output, and systemic vascular resistance and did not critically increase the extravascular lung water.

Patients in Group E had significantly less pain at rest and in motion, improved bowel activity, and higher patient satisfaction. In comparison with Group G, they had significantly less such complications as deep vein thrombosis, pulmonary embolism, vomiting and nausea, and wound dehiscence.

Conclusions: Epidural anesthesia and PCEA with ropivacaine and opioids through the placed epidural catheters before surgery provided better analgesia, less postoperative morbidity, blood loss decreasing, patient satisfaction and early discharge from hospital.

ESRA1-0172
Miscellaneous

REGIONAL ANAESTHESIA DOCUMENTATION RE-AUDIT

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Background and aims: The importance of clear and thorough documentation in regional anaesthesia (RA) cannot be overemphasized in current ethical and medico-legal practice.

A new RA documentation form which contains a list to check, was introduced in our department following a previous audit in 2008 to improve compliance with documentation and it was based on general consensus by practitioners, the key elements of which were obtained from national and local guidelines.

Methods: After approval from our Audit department, 50 consecutive anaesthetic notes that involved either central neuraxial blocks (CNB) or peripheral RA were audited.

Anaesthetists were not aware that this audit was in progress so as not to interfere with record keeping.

Results:

TABLE 1. demonstrates improved compliance with documentations using the new forms.

Total patients	50
CNB	16
Peripheral RA	38
Consent	47/54 (87%)
Laterality	50/54 (92.5%)
Side confirmation	30/38 (78.9%)
Patient's position	39/54 (72.2%)
Asepsis	48/54 (88.8%)
Awake/asleep	41/54 (75.9%)
Needle type/length	47/54 (87%)
Negative aspiration	32/38 (84.2%)

Asepsis was previously documented in 17% of cases compared to 88.8% currently and examples of good practice such as negative aspiration pre-injection was then documented in 57% of the cases as opposed to 84.2% currently.

Conclusions: This re-audit has demonstrated a leap forward in accuracy of documentation aided by a standard anaesthetic proforma which has helped all practitioners, across all grades, to keep high quality record keeping in an accurate and a consistent manner.

ESRA1-0174
Miscellaneous

COMPOUND IMAGING TECHNOLOGY AND ECHOGENIC NEEDLES: A COMPARATIVE STUDY IN PORK PHANTOMS AND THIEL-EMBALMED CADAVERS.

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Background and aims: High visibility of the needle is mandatory for ultrasound-guided nerve block (USG-NB). The efficacy of echogenic needles and spatial compound imaging (SCI) were investigated.

Methods: A simulation of USG-NB was performed using pork phantoms and Thiel-embalmed cadavers. Four kinds of needle were used according to thickness and echogenic properties: A) 18-gauge non-echogenic Tuohy; B) 18-gauge non-echogenic Tuohy for NBs; C) 22-gauge echogenic short-bevel; and D) 22-gauge non-echogenic short-bevel. A needle guidance was used to perform accurate insertions at precise angles. USG-NB was performed at 15°–60°. Brightness of needles was evaluated using pixel intensity (0–255) of the corresponding areas, and by the maximum angle at which needles could be observed.

Results: The shafts of all four needles were poorly seen at steep angles in the pork phantom, and SCI was insignificant (Fig. 1). Tips of the two thicker needles were visible at steep angles. In contrast, shafts and tips of all four needles gained visibility with SCI in the Thiel-embalmed cadaver model (Fig. 2).

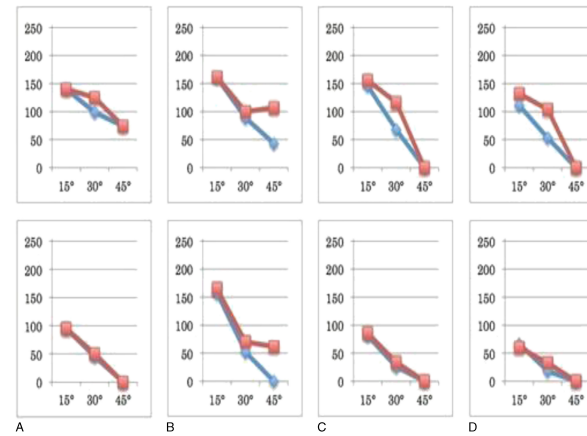

FIGURE 1.

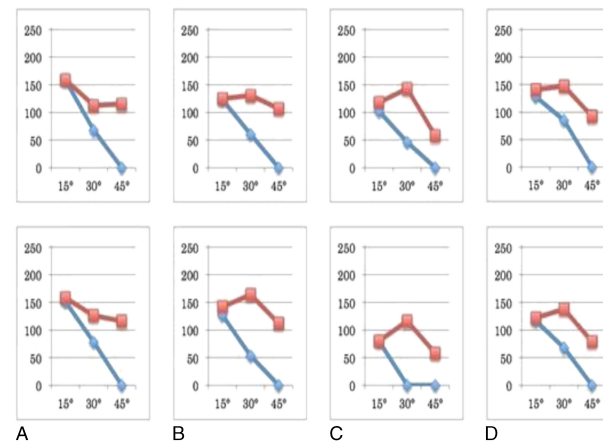

FIGURE 2.

Conclusions: This study showed that an 18-gauge non-echogenic Tuohy needle was the most appropriate for USG-NB. Patient postures and shallow needle angles should be emphasized for best results.

ESRA1-0175
Peripheral Nerve Blocks

THE ANALGESIC EFFICACY OF ULTRASOUND-GUIDED SUBCOSTAL TAP-BLOCK COMPARED WITH THORACIC EPIDURAL AND GENERAL ANESTHESIA IN PATIENTS UNDERGOING EXTREME-LATERAL INTERBODY FUSION

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Background and aims: Today, procedure XLIF is often used as minimally invasive lateral access to the spine surgery. Subcostal TAP block has also been proposed as a new technique to provide analgesia for the supraumbilical abdomen. We compared the analgesic and opioid-sparing effects of a single-injection US subcostal TAP block with continuous thoracic epidural analgesia.

Methods: 85 patients undergoing XLIF were randomized to receive either combined general and subcostal TAP anesthesia (Group T), combined general and epidural anesthesia (Group E), or general anesthesia (Group G). In Group T, a unilateral US subcostal TAP block was performed after induction of general anesthesia using 30 ml of 0.75% ropivacaine. In Group E, a thoracic epidural was placed between T8 and T9 and bolused with 10 ml of 0.5% ropivacaine and 2 ml of fentanil before induction of general anesthesia. Group G received standard general anesthesia. Patients were assessed at 48 hours postoperatively. Primary outcomes measured were opioid consumption at 24 hours and all VAS pain scores.

Results: Group T has reduced morphine consumption to 10 hours as compared with Group G, but increased morphine consumption for 10 to 24 hours as compared with Group E. Group T has also demonstrated decreased VAS pain scores at all measurement times, as compared with Group G with standard opioid analgesia, but as compared with Group E, Group T has shown the same VAS pain scores only to 6 hours.

Conclusions: Single-injection US subcostal TAP-block was more effective than IV opioid analgesia, while continuous thoracic epidural analgesia was more effective than the single-injection subcostal TAP-block.

ESRA1-0176
Pediatric

PAIN PERCEPTION EVALUATION IN 0–5 MONTH OLD PATIENTS WITH CLEFT LIP AND PALATE (CLP) UNDERGOING PRESURGICAL ORTHOPEDIC TREATMENT (POT)

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Background and aims: Considering that newborns are not able to verbalize feelings and express pain, there is a need to identify a primary measure of infant pain. The aim of the present study was to assess presurgical orthopedic pain using the Face, Legs, Activity, Cry, Consolability (FLACC) scale and to determine the reliability of this scale in such patients

Methods: Six independent observers rated pain from videotapes in 20 I CLP infants aged 0–5 months during 3 time points: 1) feeding technique (FT), 2) alveolar ridges impressions (ARP) 3) mouth plaque placement (MPP). The FLACC scale was scored at every time point throughout the procedure. And measurement of ARP and MPP were compared to FT using Wilcoxon paired test. Intraclass correlation coefficients (ICC) were used to assess confiability of the FLACC scale.

Results: Significant increases in FLACC scores during ARP and MPP vs FT were found. (median, 6 ; vs median 0 ; $P < .001$ and median, 6 ; vs median 0 ; $P < .001$) respectively. ICC (2, k) results were 0.76 (95% CI 0.56, 0.89), 0.83 (95% CI 0.68, 0.92); 0.82 (95% CI 0.66, 0.92) for FT, ARP and MPP respectively.

Conclusions: The general pain report during ARP and MPP in presurgical orthopedic treatment and good scale reliability in these patients and settings, provide preliminary support to consider alternative or pharmacological procedures to complement patient's treatment, This study creates awareness about pain perception by parents, medical and dental staff involved in inter and multidisciplinary treatment.

ESRA1-0182
Case Reports

INFERIOR MESENTERIC PLEXUS BLOCK FOR LOW BACK PAIN IN PATIENTS WITH RETROPERITONEAL FIBROSIS: A REPORT OF TWO CASES

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Background and aims: Retroperitoneal fibrosis (RPF) is a rare fibrosing disease of the retroperitoneal tissue. The most common symptom is low back pain.

Methods: Two cases of RPF with severe low back pain that was effectively decreased by inferior mesenteric plexus block (IMPB) are reported.

Results: Case 1: A 39-year-old man with idiopathic RPF had a 2-year history of low back pain. Corticosteroids improved the fibrosis, but the severe low back pain remained. There was fibrosis at the 1st to 3rd lumbar vertebral levels on the CT scan. Lumbar epidural block relieved his pain for 3 days. IMPB then reduced the intensity of the pain and the amount of oxycodone. Case 2: A 70-year-old man with a bladder tumor and low back pain was found on CT to have RPF at the 2nd to 3rd lumbar vertebral levels. A one shot lumbar epidural block allowed him to sleep well at night for several days. His low back pain then resolved completely after IMPB.

Conclusions: About two-thirds of RPF cases are idiopathic. Remaining causes include drugs, abdominal aortic aneurysm, infection, and retroperitoneal malignancy. Low back pain in RPF sometimes has a poor response to pharmacotherapy. IMPB is usually used for patients with lower abdominal pain from colon cancer, but it is also effective for low back pain due to RPF. It is valuable to try this neural block for patients with intractable low back pain due to PRF.

ESRA1-0184
Peripheral Nerve Blocks

INCIDENCE OF SURGICAL SITE PAIN AND TOURNIQUET PAIN IN PATIENTS UNDERGOING UPPER LIMB SURGERY UNDER ULTRASOUND GUIDED AXILLARY BRACHIAL PLEXUS BLOCK

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Background and aims: Regional anaesthesia facilitates shorter recovery times and increases patient satisfaction. The literature regarding ultrasound guided axillary brachial plexus block (ABPB) related tourniquet pain (TP) is limited however an incidence of 3-65% is reported. We report on quality of ABPBs by quantifying the incidence of intra-operative surgical site pain (SSP) and TP in a specialist unit. We describe management approaches to these problems, which reduce tolerance of regional anaesthesia.

Methods: Anaesthetists performing awake regional blocks as the sole anaesthetic technique in upper limb surgery were asked to complete a procedural proforma.

Intra-operative SSP and TP were recorded every fifteen minutes. Additional interventions required for intra-operative pain management were noted.

Results: 100 questionnaires were returned. 85 patients underwent ultrasound-guided ABPBs.

Intra-operative pain is summarized in Table 1.

TABLE 1. Incidence of intra-operative pain.

	SSP			TP		
Pain severity	Mild	Moderate	Severe	Mild	Moderate	Severe
Number of patients	11	3	0	5	1	4
Percentage	16%			12%		

Twenty-eight additional interventions were required in 23 patients.

Eight patients had secondary blocks due to missed nerves following ABPB.

SSP was managed with local anaesthetic infiltration by surgeons in 10 patients. Two of these also required midazolam and 1 fentanyl.

TP (all after 60 minutes) was managed with alfentanil and midazolam in 2 patients but 4 had the tourniquet deflated early.

These effective interventions meant no conversions to general anaesthesia were needed.

Conclusions: The incidence of TP with ABPBs in our specialist hospital is lower than published literature. TP could be further reduced by forearm tourniquets and limiting inflation pressures to 200mmHg instead of 250mmHg.

ESRA1-0185
Case Reports

EPIDURAL CATHETER MIGRATION DURING PATIENT CONTROLLED EPIDURAL ANALGESIA

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Background and aims: Epidural catheter migration is a rare, but if unidentified, potentially disastrous complication of epidural analgesia. We report such an event in the case of a patient who required a 'category 2' caesarean section ('urgent operative delivery for maternal or fetal compromise, not immediately life-threatening') for failure to progress in labour.

Methods: Earlier insertion of a lumbar epidural had been uneventful and patient-controlled epidural analgesia (PCEA) had been working well without reported ill effect. Prior to bolusing the epidural however, significant sensory and motor block was identified and the catheter was suspected to be intrathecal. On aspirating the epidural catheter, a continuous column of clear straw-coloured fluid was obtained, which tested 1+ on a glucose strip equating to glucose concentration of 2.8 mmol/l, suggestive of cerebrospinal fluid. 0.5ml of 0.5% bupivacaine was given via the intra-thecal catheter to provide regional anaesthesia.

Results: The block ascended to T4 bilaterally for cold sensation within five minutes, and the operation was performed without incident. Mother and baby had an uneventful post-operative recovery.

Conclusions: This case highlights the importance of vigilance when converting from epidural analgesia to anaesthesia. We advocate 1) a mandatory neurological examination, and 2) the careful aspiration of all epidural catheters before, 3) giving a conservative test bolus. The continued education of allied health professionals is essential in the early identification of developing complications.

ESRA1-0189
Case Reports

THE RELATIONSHIP BETWEEN POSTSPINAL PUNCTURE HEADACHE AND BREAKAGE OF SPINAL NEEDLE TIP IN CAESAREAN SECTION CASES: A SCANNING STEREOMICROSCOPY STUDY

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Background and aims: The tips of 27G spinal needles may be easily damaged during spinal needle insertion. There is also a relationship between the tip of the spinal needle and postspinal puncture headache(PSPH). This study aimed to determine whether deformation of the spinal needle tip leads to PSPH.

Methods: The needle tips of the 27G, 3.5 inch Whitacre spinal needles used in the routine spinal anaesthesia of 21 Caesarean section cases were inspected by scanning stereomicroscopy.

Results: Bone contact occurred in 11 cases during spinal needle insertion and 5 needles were broken at the tip. Three of these 5 patients had PSPH.

No bone contact occurred in 10 patients and none of the needles were broken at the tip. Four patients had PSPH.

All anaesthesia procedures were satisfactory and no patient had any adverse sequelae.

Conclusions: Great care must be taken to avoid bone contact of the spinal needle as the needle tip may be broken and provoke PSPH.

ESRA1-0195
Miscellaneous

MANAGEMENT OF LOCAL ANAESTHETIC SYSTEMIC TOXICITY (LAST) AT A TERTIARY CENTRE IN UK

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Background and aims: Although uncommon LAST can be potentially life threatening. Therefore anaesthetists should recognise signs and symptoms and initiate management appropriately.

Methods: Two questionnaires were designed. First was aimed at anaesthetists on their knowledge of Association of Anaesthetist of Great Britain and Ireland (AAGBI) Safety Guideline on LAST and location of intralipid under stopwatch condition. Second questionnaire was aimed at operating department practitioners (ODP) to test knowledge of location of intralipid in various theatre complexes.

Results: 52 anaesthetists took part in first questionnaire. 100% recognised the signs and symptoms of LAST and could initiate immediate management. However, only 44% knew initial dosage and rate of infusion of intralipid, 34% of number of repeat boluses and 30% of maximum cumulative dose. All would refer to AAGBI guideline to find out dosage in emergency. 53% knew the closest location of intralipid. 20 ODPs took part in second questionnaire, only 45% could correctly identify the location of intralipid.

Conclusions: All anaesthetists had good knowledge of management of LAST and awareness of AAGBI guideline, but only a proportion knew bolus dosage or infusion rate of intralipid. The patchy knowledge of location of intralipid could be explained by existence of various theatre complexes in our tertiary centre, with each stocking intralipid in different locations. To improve patient safety, we reorganised the location of intralipid and standardised it across our centre, and ensured that each regional anaesthetic trolley was stocked with intralipid and a laminated copy of AAGBI guideline for ease of use in case of LAST.

ESRA1-0196
Miscellaneous

MSC IN REGIONAL ANAESTHESIA- A STUDENT'S PERSPECTIVE

Tong D.[1] [1]*Anaesthetics, St Georges Hospital NHS Trust, London, United Kingdom.*

Background and aims: The MSc in Regional Anaesthesia (RA) at University of East Anglia is a three-year course that has been running since September 2012. As one of the first cohort of students that are undertaking the course, I am privileged to offer a unique view of the course and how it has affected my career.

Methods: The MSc comprises of 6 core modules in RA. The practical arm consists of direct observed procedural skills (DOPS) at individual students' base hospital, and OSCE examination at the end of the 2 years. In the third year, we are expected to complete a dissertation.

Results: The course is assessed by several means: through problem based learning and online participation of virtual learning environment (VLE), summative assessments at the end of each module and course works ranging from writing up of research proposal to service improvement business plan. So far, I have completed 4 out of 6 modules, and will be starting my dissertation in September 2014.

Conclusions: Overall, the course has been thoroughly enjoyable, and allowed me to meet like-minded anaesthetists, had shared learning experience in multiple areas of regional anaesthesia through VLE and kept up to date with latest techniques and technology. It complemented my concurrent clinical experience as Fellow in RA at St George's Hospital in UK. In particular, Clinical Leadership & Service Delivery Module enabled me to gain invaluable experience in improving the RA service and boosted my preparedness to lead RA service in a hospital at consultant level.

ESRA1-0198
Miscellaneous

REGIONAL ANAESTHETIC TECHNIQUES FOR THE RISK OF MALIGNANT TUMOUR RECURRENCE: PRELIMINARY FINDINGS OF A COCHRANE SYSTEMATIC REVIEW AND META-ANALYSIS

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Background and aims: Surgery for malignant tumours leads to significant systemic release of tumour cells. Perioperatively, surgical stress, anaesthetic agents and the administration of opioids can compromise immune function and might promote tumour cell proliferation. In recent years, the potential benefits of regional anaesthesia techniques (RA) on tumour recurrence were intensely discussed. We aimed to comprehensively summarize current evidence.
Methods: The review was conducted using Cochrane Collaboration guidelines for systematic reviews. Methods and analysis plan have been published elsewhere (Cochrane Database of Systematic Reviews, CD008877).

We considered randomized controlled trials (RCTs) or controlled clinical trials in patients undergoing resection of primary malignant tumours.

Eligible interventions: general anaesthesia (GA) *versus* GA combined with one or more RA; GA combined with one or more RA *versus* one or more RA; GA *versus* one or more RA.

Primary outcomes: overall survival (OS), progression free survival (PFS), time to tumour progression (TTP).
Results: Four studies with 746 participants met inclusion criteria. All compared GA *versus* GA combined with epidural analgesia. All studies were secondary data analyses of previous RCTs.

Meta-analysis did not show an advantage for either group for the outcomes OS (HR 1.05, CI 95% 0.85-1.30) and PFS (HR 0.88, CI 95% 0.56-1.38). Pooled data for TTP showed a slightly favourable outcome for the GA group compared to the GA plus epidural group (HR 1.50, CI 95% 1.00-2.25).
Conclusions: Currently, there is no high level evidence for the benefit of RA on tumour recurrence. There is an encouraging number of RCTs ongoing whose first results will hopefully be available soon.

ESRA1-0199
Miscellaneous

PATIENT SURVEY ON SEDATION SATISFACTION DURING REGIONAL NERVE BLOCKS

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Background and aims: It is a common belief that the tolerance of Regional anaesthesia (RA) and satisfaction is better with sedation than without.

Aim is to find out how well the patients who received regional anaesthesia block for hand operation are satisfied during the procedure with or without sedation.
Methods: We used patient satisfaction questionnaire to be filled by the patients before they go to home.
Results: In total 39 adult patients (all received US guided brachial plexus block) took survey.

Among which 15 patients requested for sedation in pre-op visit. During the RA procedure 23 received sedation and 16 did not. We used satisfaction scale of Poor, Less than satisfactory, Satisfactory, Good and Very good for assessment. During the block 32 patients expressed very good satisfaction and 7 said good.

During operation only 13 received sedation and 26 did not. Regarding satisfaction 33 said very good and 6 said good and none of them scored poor during the above-mentioned periods.

Overall satisfaction for anaesthetic service including pre-op information, block, sedation and communication: 34 said 'very good' and 5 said 'good'.

Regarding their future preferences all 39 said they would opt for regional anaesthesia and 21 will request for sedation and 18 will not and only a very few changed their decision about their preference for sedation.
Conclusions: Our patients were very satisfied either with or without sedation during the procedures. Their sedation preference did not change much despite good satisfaction. Therefore sedation service must be individualized and not as a routine.

ESRA1-0201
Case Reports

ROPIVACAINE ANAPHYLAXIS

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Background and aims: Allergic reactions to local anesthetics (LA) are extremely rare, representing less than 1 % of all adverse reactions to these drugs. This case describes an anaphylactic reaction after administration of epidural ropivacaine.
Results: An 8 year old boy, with atopic dermatitis, proposed for circumcision in an outpatient setting; without anesthetics or surgical history. After inhalational induction with sevoflurane and placement of laryngeal mask airway, a caudal epidural was performed with 10.5 ml of 0.2% ropivacaine and paracetamol was administered intravenously (IV). About 5 minutes after the blockade, he developed generalized erythema, facial edema, bronchospasm, desaturation, hypotension and tachycardia. Facing the clinical picture of anaphylaxis, we proceeded to tracheal intubation and IV administration of adrenaline, clemastine, hydrocortisone and inhaled bronchodilators. Blood was collected for determination of total IgE (639 kU/L) and tryptase (15.60 ug/L). There was a progressive improvement on ventilation and oxygenation, regression of erythema and edema, and recovery of the initial hemodynamic status. We proceed with surgery that held without other complications. He was oriented to Immunoallergology consultation. Further study revealed tryptase assay basal 2.64 ug / L, negative latex specific IgE and skin prick tests (SPT), positive SPT for ropivacaine. It was concluded with high probability for hypersensitivity to ropivacaine.
Conclusions: Amide LAs have been preferred as they are associated with fewer allergic reactions. However there are reports of true allergic reactions and documented cross-reactivity between drugs of this group. Anesthesiologists must be able to identify and treat such cases.

ESRA1-0203
Miscellaneous

CORDOTOMY FOR BILATERAL PAIN- INCREASE IN PAIN AFTER UNILATERAL CORDOTOMY AND NEW PAIN AFTER BILATERAL CORDOTOMY-

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Background and aims: New pain, usually at mirror-image positions of the original pain site occurs following unilateral cordotomy in patients suffering from unilateral pain, which may be referred pain from the originally painful region enhanced by cordotomy. In this study, we investigated the pain following cordotomy for bilateral cancer pain and speculated its pathogenesis.
Methods: Retrospective analysis of twenty six patients suffering from cancer pain in the lumbosacral nerve region on both sides who received unilateral or bilateral percutaneous cordotomy(PCC) from 1981 to 2009 at Ehime University Hospital or associated hospitals. Clinical features and causes of the pain following cordotomy were examined.
Results: Unilateral PCC relieved the pain immediately after PCC in all patients. The pain on the opposite of the relieved pain increased in 21 patients and did not change in five patients. Bilateral PCC was performed in thirteen patients; two patients complained of residual pain, four patients complained of recurred pain having been relieved by unilateral PCC, and the remaining seven patients complained of new pain. The new pain located cephalad to the region rendered hypalgesic or analgesic by PCCs, and had no organic causes on roentgenography, and referral of pain from the originally painful region to the new pain was observed in three patients.

Conclusions: This study shows that increase in pain following unilateral PCC and new pain following bilateral PCC occurred in most of patients. No organic cause and distinct referred pain suggest that the new pain following bilateral PCC was referred pain from the originally painful region.

ESRA1-0204
Chronic Pain Management

LUMBAR EPIDURAL INJECTION FOR THE MANAGEMENT OF PAIN OF SPINAL ORIGIN IN ADULTS: A SURVEY OF UK PRACTICE

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Background and aims: In 2011, the Faculty of Pain Medicine of the The Royal College of Anaesthetists published recommendations regarding epidural injections in adults. This consensus related to 'single-shot' injections at any level of the neuraxis (cervical, thoracic, lumbar and caudal). With lumbar epidurals we recognised that our own practice did not meet all the recommendations. We performed a survey to ascertain the current practice of pain physicians based on aspects of the recommendations.

Methods: The British Pain Society provided addresses of practicing consultants in pain management and a postal questionnaire was sent to each. Microsoft Excel was used to aid data analysis.

Results: We received 83 replies from 207 questionnaires giving a response rate of 40%. Written consent for epidural injections was obtained by 95% (79/83) of respondents. Patients were informed of the 'off-label' nature of the epidural steroid by 26.5% (22/83). 65% (54/83) routinely sited a peripheral cannula prior to performing an epidural. 53% (44/83) routinely fasted their patients prior to injection. Fluoroscopy was routinely used by 62.7% (52/83). The use of aseptic precautions is illustrated below. 13.3% (11/83) of respondents were not aware of the recommendations.

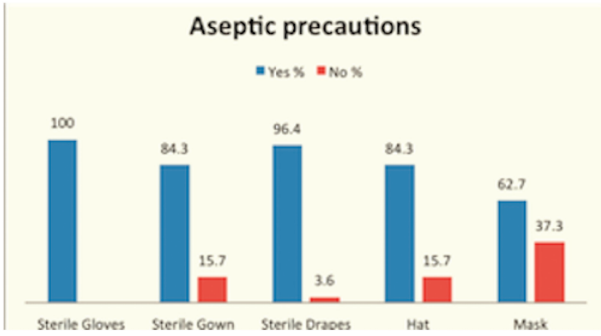

FIGURE 1.

Conclusions: The survey demonstrates marked non-compliance with national recommendations. Some dissatisfaction with the evidence-base behind the recommendations was expressed. Further studies to reinforce this evidence may help to improve compliance.

ESRA1-0207
Obstetric

THE ANALGEIC EFFICACY OF ILIOINGUINAL-ILIOHYPOGASTRIC NERVE BLOCK ADDED TO A MULTIMODAL REGIMEN IN PATIENTS UNDERGOING CAESAREAN SECTION - RANDOMISED DOUBLE BLINDED CONTROLLED TRIAL

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Background and aims: Most Caesarean sections are performed under spinal anaesthesia with the addition of intrathecal opioids followed by non-steroidal anti-inflammatory agents and systemic opioids.

It is unclear whether the addition of truncal blocks to the standard analgesic protocols including intrathecal morphine brings any further benefits. We hypothetise that regional anaesthesia techniques aiming specifically for nerves innervating T12/L1 dermatomes could be more effective than previously investigated TAP block.

Methods: Following ethical approval and written informed consent 60 patients were enrolled and randomized to two groups using computer generated numbers.

Group B, standard postoperative analgesia protocol, including spinal morphine (150mcg administered with spinal anaesthetic 2–2.5 ml of 0.5% Bupivacaine), paracetamol, diclofenac 50mg three times a day and oxynorm if requested. Additionally bilateral ilioinguinal and iliohypogastric blocks were performed postoperatively using 10mls of 0.5% bupivacaine under ultrasound guidance.

Group S, standard postoperative protocol as described above. An injection of Normal saline done instead of local anaesthetic.

A blinded assessor measured patients VAS pain scores (at rest and on movement) at 6h intervals for the first 48h postoperatively. Oxycodone consumption measured at 6h, 12h, 24h and 48h was also measured along with time to the first analgesic request.

Results: Pain scores and oxycodone consumption were lower in the Block group as in the attached files. Median time to first analgesic requests was also significantly prolonged in the block group (1000min vs. 500min p=0.009)

Conclusions: Ilioinguinal-Iliohypogastric nerve blocks were safe and led to easier patient mobilisation following the surgery.

ESRA1-0208
Obstetric

EFFICACY OF LOW DOSE HEAVY BUPIVACAINE WITH FENTANYL IN SPINAL ANAESTHESIA FOR CAESAREAN DELIVERY

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Background and aims: Spinal anaesthesia is preferred anaesthetic technique for elective Caesarean deliveries hypotension remains an important side effect. Our study was designed to compare the efficacy of low dose heavy bupivacaine with fentanyl compares to standard dose in avoiding hypotension during spinal anaesthesia.

Methods: Hundred patients were randomized into two groups

Patients in group A (n=50) were given spinal anaesthesia using 10 mg heavy Bupivacaine with 25 µg fentanyl. Patients in group B (n=50) were given spinal anaesthesia using 7.5 mg heavy Bupivacaine with 25 µg fentanyl free preservative.

Vital signs were monitored as recommended for caesarean sections. We recorded the blood pressure of each patient every two minutes until the baby was delivered and the fetal Apgar score was recorded.

We observed the maximal level of sensory block and duration.

Results: Duration of effective anaesthesia (block to cold sensation above or at T3) was longer in the A group as compared with B group, P (0.05> When comparing the changres in blood pressure, more patients in the A group experienced hypotension compares with the B group P (0.05> however, Neonatal outcomes were similar in both groups.

Conversion to general anaesthesia occurred only in B group (only one case).

Conclusions: small-dose spinal anaesthesia (group B) better preserve maternal hemodynamic stability with equally effective anaesthesia that is of shorter duration, it may be feasible only when the block can be reinforced using a functional epidural catheter.

ESRA1-0214
Chronic Pain Management

COMPARISON OF LANDMARK AND FLUOROSCOPIC TECHNIQUES FOR SACROILIAC JOINT INJECTIONS

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Background and aims: Accurate intra-articular needle placement without fluoroscopy has been shown to be as low as 12%. Yet in our centre some operators continue to use a landmark technique. We conducted a retrospective study to compare outcome by these two techniques.

Methods: We searched for all sacroiliac joint injections on the Glasgow chronic pain database. These were categorized depending on whether or not x-ray was used. The primary outcomes measures were degree of pain relief and duration of pain relief.
Results: A total of 469 cases were identified. Of these, 116 were performed by a landmark technique and 353 were performed by fluoroscopy. A good outcome for degree of pain relief was taken to be over 30% relief. This was achieved in 67% under landmark and 62% under fluoroscopy. Pain relief over 8 weeks was considered to be necessary for successful treatment and was obtained in 22% of landmark techniques and 19% of fluoroscopic techniques.
Conclusions: It is surprising to find that an unguided technique can be equally effective without the benefit of fluoroscopy. It has been shown that peri-articular injection can produce a comparable clinical outcome to intra-articular injection which may account for these findings. Indeed a combined intra- and peri-articular technique may even be better. Exposure to radiation and cost are additional factors to suggest that clinic based treatment may be underestimated.

ESRA1-0218
Miscellaneous

NON-INVASIVE BLOOD HAEMOGLOBIN (SPHB) AND PLETH VARIABILITY INDEX (PVI) DURING BRACHIAL PLEXUS BLOCK

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Background and aims: Plethysmographic measurements of haemoglobin concentration (SpHb), pleth variability index (PVI) and perfusion index (PI) with the Radical-7 apparatus is becoming popular. Poor precision in SpHb has been found, especially when PI is low. It has been proposed that peripheral haematocrit actually might increase with increasing vessel diameter. We wanted to discern what effect sympathetic block and the thereby induced vasodilation has on SpHb, PVI and PI.
Methods: Twenty patients (aged 17-86 years) receiving brachial plexus blocks for surgery were studied bilaterally with Radical-7 apparatuses. Measurements were taken before the block and then for 20 minutes after the block was completed.
Results: Within 3 minutes after the block the PI was significantly increased, reaching stable values (+188%) after 10 minutes. SpHb increased (+12.3 g/L) and PVI decreased (-54%) significantly but slower (see graphs 1A-B). Measurements in the unblocked arm did not change significantly.

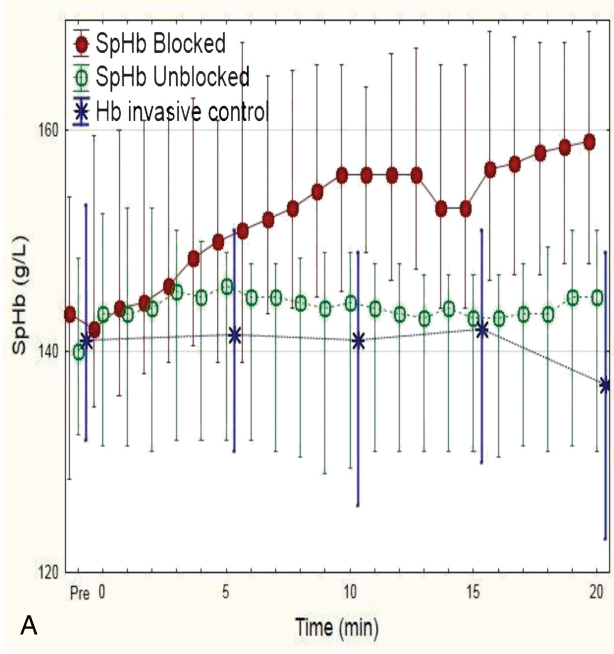

FIGURE 1.

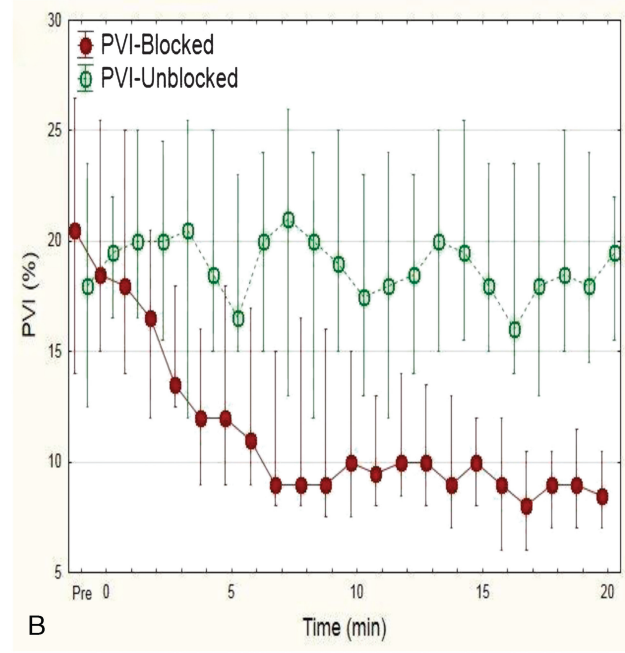

FIGURE 2.

Conclusions: Brachial plexus block altered SpHb, PVI and PI, which shows that regional nervous control of the arm greatly affects plethysmographic measurements obtained by the Radical-7. SpHb increases and PVI decreases after the brachial plexus block. This supports the idea that haematocrit increases with vasodilation.

ESRA1-0227
Chronic Pain Management

ASSESSMENT OF CLINICAL OUTCOMES OF EPIDURAL NEUROPLASTY USING THE RACZ CATHETER AND PREDICTIVE FACTORS OF TREATMENT EFFICACY IN PATIENTS WITH CERVICAL SPINAL PAIN

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Background and aims: Epidural neuroplasty using the Racz® catheter has a therapeutic effect in patients with cervical disc herniation and central stenosis who do not respond to epidural injection. Our aim is to evaluate clinical outcomes of cervical epidural neuroplasty, and to demonstrate correlations between predictive factors and unsuccessful results of cervical epidural neuroplasty.
Methods: Outcome measures were obtained using the numeric rating scale (NRS) for total pain, neck pain, arm pain and sleep disturbance, the neck pain and disability scale (NPDS) as well as opioid consumption at preprocedure, 1 month, 3, 6, and 12 months after procedure. Successful epidural neuroplasty was defined as 50% or greater reduction of total pain, and at least 40% reduction in the NPDS. Clinical data and radiologic findings were obtained for evaluation.
Results: Of 169 patients, successful outcomes were observed in 108 patients (63.9%; 95% confidence interval [CI], 56.2%–71.0%) at 1 month following the procedure, in 109 patients (64.5%; 95% CI, 56.8%–71.6%) at 3 months, in 96 patients (56.8%; 95% CI, 49.1%–64.5%) at 6 months, and in 89 patients (52.7%; 95% CI, 44.4%–59.8%) at 12 months. Previous surgery, spondylolisthesis, and ossification of the posterior longitudinal ligament were significantly associated with unsuccessful outcomes as measured by NRS and NPDS ($P<0.05$).

Conclusions: Cervical epidural neuroplasty may be an effective treatment for pain reduction and functional improvement in patients with cervical spinal pain who did not respond to conservative treatment, and may decrease surgical demand. Previous surgery, spondylolisthesis, and ossification of the posterior longitudinal ligament are associated with unsuccessful outcomes of epidural neuroplasty.

ESRA1-0229
Peripheral Nerve Blocks

FASCIA ILIACA COMPARTMENT BLOCK FOR POSITIONING HIP FRACTURE PATIENTS FOR SPINAL ANAESTHESIA: A RANDOMIZED TRIAL

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Background and aims: Appropriate pain management may positively affect outcome following hip fractures. Positioning patients for spinal anaesthesia (SA) can be extremely painful. Peripheral nerve blockades are slowly gaining popularity in this setting. This prospective, randomized study compares the efficacy of fascia iliaca compartment block (FICB) to intravenous (IV) fentanyl for positioning hip fracture patients for SA.

Methods: Forty-one patients scheduled for hip fracture surgery were randomized to receive a bolus dose of IV fentanyl 1.5 mcg/kg (IVFE group) or an FICB using 40 ml ropivacaine 0.5% (FICB group) five or twenty minutes before positioning for SA respectively. Numeric rating pain scale (NRS) scores prior to and following the analgesic intervention, time needed and quality of patient position for SA performance, postoperative analgesia in terms of time to first IV morphine dose demand and morphine consumption during the first 24 hours, and patient satisfaction were documented.

Results: Compared with the IVFE group, the FICB group showed significantly lower NRS scores in all instances following the analgesic intervention ($P<0.001$), shorter spinal performance time ($P=0.001$) and better quality of position ($P=0.001$). Postoperative morphine consumption was lower ($P=0.026$), the time to first dose demand was longer ($P=0.001$) and patient satisfaction rates were higher ($P<0.001$) in the FICB group.

Conclusions: Performing an FICB prior to positioning for SA provides superior pain management than IV fentanyl administration, facilitates SA performance, yields satisfactory postoperative analgesia and wide patient acceptance, hence improving overall quality and efficiency of care.

ESRA1-0236
Peripheral Nerve Blocks

CONTINUOUS FEMORAL BLOCK ANALGESIA FOR KNEE ARTHROPLASTY: STIMULATING OR NOT STIMULATING CATHETERS?

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Background and aims: The use of continuous nerve blocks allows for longer periods of local anesthetic administration and results in excellent postoperative analgesia. Stimulating catheters are positioned maintaining nerve stimulation so the placement should be more accurate. Our objective is to assess if there are differences in analgesia when a stimulating catheter does not stimulate once placed properly.

Methods: After Research Ethical Committee approval, we collected data from patients undergoing major knee surgery from November 2009 to December 2013. The additional variables we collected included: catheter depth, catheter stimulation intensity and postoperative pain scores.

Results: We recorded 2.289 patients: 1.186 (79.4%) total knee arthroplasty and 473 (20.7%) knee arthroplasty reviews. In 1450 patients (63.3%) stimulating femoral catheter was used for continuous analgesia. In 215 patients (15.1%) the catheter was placed and no stimulating response was obtained, in this cases not additional adjustment maneuvers were made during placement.

The catheter depth varied from 1-10cm in 81.7% vs 84.6% for stimulating and non stimulating catheter respectively. Stimulation intensity was 0.01–0.4 milliamps in 80.6% of patients.

Analgesia was satisfactory in both groups. At 12/24/48h mild pain was recorded in 78.8% / 89.6% / 91.1% for patients with non stimulating catheter vs 82.1%/90.2%/93.4% for patients with stimulating catheter respectively.

The use of rescue analgesia was similar, 21.7% vs 19.8% for patients with non stimulating catheter and stimulating catheter respectively.

Conclusions: If the technique of femoral catheter placement is correct, no differences were observed in postoperative analgesia when the catheter did not stimulate during placement.

ESRA1-0238
Peripheral Nerve Blocks

THE EFFECTS OF CATHETER TIP POSITIONING IN OUTPATIENTS CONTINUOUS POPLITEAL SCIATIC NERVE BLOCK: PRELIMINARY DATA OF A PROSPECTIVE, RANDOMIZED STUDY

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Background and aims: The insensate limb represents an undesired complication for ambulatory patients with continuous sciatic nerve catheter. The aim of this study was to detect the possibly difference in treatment of postoperative pain at home varying the final position of the catheter tip.

Methods: We have enrolled 37 patients undergone hallux valgus repair. By using an ultrasound-guide, in the first group the tip of the catheter was placed at the bifurcation of the sciatic nerve between the peroneal and tibial component (group 1= 20 pt), while in the second group the tip was positioned in the popliteal fossa medially to the tibial branch (group 2=17 pt). A patient controlled electronic pump to deliver a solution of levobupivacaine 0,125% was used in both groups (2 ml/h, bolus 2 ml, lock out 20').

Results: Twenty-four hours after continuous sciatic analgesia 7 patients (35%) in group 1 complained an insensate limb compared with none in group 2. **Table 1** shows the mean value NRS in both groups.

TABLE 1.

	NRS 24h	NRSi 24h	NRS 48h	NRSi 48h	p-value
Group 1 (mean±SD)	3,1 ± 0,94	3,65 ± 1,1	2,52 ± 0,67	2,84 ± 0,66	>0.05
Group 2 (mean±SD)	3,58 ± 1,33	3,70 ± 0,82	2,35 ± 0,58	2,64 ± 0,83	>0,05

Conclusions: This preliminary results suggest that placement of the catheter in the popliteal fossa medially to the tibial branch provides similar analgesia than thus achieved with the classic placement between the 2 component of the sciatic nerve, but decreasing the risk of insensate limb in outpatients.

ESRA1-0242
Case Reports

REGIONAL ANAESTHESIA INCLUDING OBTURATOR NERVE BLOCKADE AS AN ALTERNATIVE TO EPIDURAL ANAESTHESIA: IMPLICATIONS FOR MICROVASCULAR SURGERY INVOLVOING FREE GRACILIS MUSCLE FLAP

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Background and aims: A 74 year old man presented for tibial osteomyelitis excision and free gracilis muscle flap (FGF) surgery. Epidural anaesthesia and sedation, an anaesthetic technique commonly used in our centre for this type of surgery, was planned.

Methods: Unexpectedly, lumbar epidural insertion was complicated by three bloody taps at three levels and abandoned. As the FGF was to be harvested from ipsilateral thigh, an alternative regional anaesthesia option was deemed

appropriate: ultrasound-guided femoral, sciatic and obturator nerve blocks were performed in combination with general anaesthesia.

Results: When gracilis muscle was being harvested the plastic surgeon expressed concern on finding some bloody serous fluid surrounding the flap pedicle. Fortunately, the arterial supply was unaffected and FGF surgery continued as planned.

The patient was stable throughout. Peripheral regional blocks provided good postoperative analgesia for over 24 hours, with a positive feedback from the patient. The flap was successful and the patient made good overall recovery.

Conclusions: Regional anaesthesia and analgesia, epidurals in particular, are strongly believed to be beneficial for free flap surgery. If epidural anaesthesia is not possible, alternative regional techniques should be applied.

The gracilis muscle, widely used in microvascular surgery, receives sensory innervation from the obturator nerve. As the artery supplying gracilis muscle is close to the point where the block is often performed and arterial trauma can compromise the flap pedicle and outcome, obturator nerve block for FGF surgery should be discussed with the surgeon. Another possible option could have been performing the block under direct vision after the muscle harvesting.

ESRA1-0244
Miscellaneous

A DECISIONAL FLOWCHART FOR INTRAOPERATIVE MONITORING STRATEGY DURING ELECTIVE CAROTID ENDOARTERECTOMY (CEA): THE ROLE OF REGIONAL ANAESTHESIA AND TRANSCRANIAL DOPPLER.

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Background and aims: While there is a consensus about the way to treat the patients with carotid disease[1],the best anaesthesiological plane for these procedures is not clear[2]; general anaesthesia or regional anaesthesia each have got advantages or disadvantages. In our opinion the possibility to perform a cervical plexus block in particular superficial or intermediate to avoid the complications related to the deep one[3], maintaining the patient awake, could improve the quality of intraoperative monitoring during CEA.

Methods: We have done a decisional flowchart about intraoperative monitoring in our hospital in Varese (Italy) in according to recent published studies.

Results: There are two crucial points: the execution of a cervical plexus block and the presence of an adequate cerebral sonography **(fig. 1).**

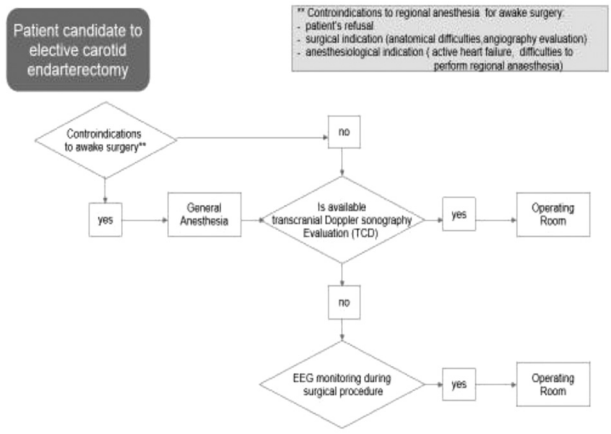

FIGURE 1.

Conclusions: A direct visual contact and execution of simple orders could reveal cerebral suffering rapidly and effectively. In literature, the TCD has been shown its role in preventing postoperative stroke[4] detecting asymptomatic embolization and it is well correlated with the cerebral suffering signs in the awake patients [5].The Doppler evaluation has got a moderate PPV but high NPV compared with EEG to detect ischemia during CEA [6].

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ESRA1-0251
Central Nerve Blocks

THE USE OF ULTRASOUND CAN REDUCE COMPLICATIONS OF EPIDURAL ANALGESIA IN OBSTETRIC PATIENTS

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Background and aims: Epidural analgesia used in obstetric patients and labor analgesia is not without complications. Ultrasound neuraxial assessment may improve quality and satisfaction of parturient. The aim of this study is to evaluate whether ultrasound prescanning is able to reduce complications.

Methods: After ethics committee approval, parturients were included into two groups: "Group L" (184 patients) in which epidural was performed researching the landmarks, iliac crests and interspinous spaces; "Group US" in which an ultrasound prescanning was first performed according a transverse and longitudinal paramedian plane (2–5 MHz curved probe). A Tuohy needle was inserted in both groups looking for a feeling of loss of resistance. BMI for each patient was recorded. Number of punctures, needle reorientations and complications were collected.

Results: Our analysis showed that the most important problem was obesity, particularly with regard to higher BMI that was an important risk factor for complications (OR=1.063 [1.018 to 1.123] per point of BMI> 25). Ultrasound demonstrated to reduce risks, complications, failure, number of attempts, needle redirection, accidental puncture of the dura mater, impact against the bony structures and catheter malpositions (OR = 0.278 [0.146 to 0.689]).

Conclusions: Ultrasound allows to evaluate the depth of the epidural space, better locate it reducing failure rate and follow the introduction of the epidural catheter avoiding possible lateralization which is often the cause of unilateral paresthesia and motor weakness of the lower. Remains confirmed the high BMI as a major risk factor that can be significantly reduced through the use of ultrasound.

ESRA1-0256
Central Nerve Blocks

UTILITY OF ULTRASOUND PRE-SCANNING FOR DIFFICULT SPINAL ANESTHESIA IN PATIENTS SUFFERING FROM SCOLIOSIS

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Background and aims: We performed a prospective, observational study using ultrasound neuraxial visualization of the posterior longitudinal ligament (PLL) to predict difficulty for spinal anesthesia in patients with scoliosis.

Methods: After ethics committee approval 38 patients (15 males and 23 females) scheduled for surgery of the lower limbs or caesarean section affected from scoliosis (5°-20°) underwent ultrasound prescanning of the lumbar spine using a 2-5 MHz curved transducer. Bilateral paramedian long axis views were obtained at levels L2-S1. Visualization of the PPL at each interspace was graded with a numerical scale score: 0 (absent), 1 (hazy), or 2 (bright). The score was

related to the number of attempts to puncture performed to achieve the cerebrospinal fluid. A score of less than 9 meant greater difficulty in identifying the subarachnoid space

Results: The success rate and the identification of the subarachnoid space was greater in patients with a score > 9 (95%; CI 4,1041; p=0.002). In this group were more patients with higher BMI and obesity (56%). Poor visualization of the PLL predicted difficulty in finding the subarachnoid space. In these patients we found a higher score >9 with more than one attempts made ??to identify the subarachnoid space. The time required to successfully perform the spinal anesthesia was higher for patients with score <9.

Conclusions: Difficulty to visualize with ultrasound the PLL at multiple levels was associated with prolonged and difficult spinal anesthesia needle placement in patients suffering from scoliosis. Ultrasound prescanning may be useful to predict the difficulty or to identify an optimal vertebral interspace.

ESRA1-0259
Central Nerve Blocks

SPINAL ANESTHESIA IMPROVES EARLY FUNCTIONAL SCORES AND PAIN LEVELS FOLLOWING SURGICAL TREATMENT OF TIBIAL PLATEAU FRACTURES

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Background and aims: This study seeks to determine the effect of spinal anesthesia (SA) on clinical outcomes when compared to general anesthesia (GA) in operatively managed tibial plateau fractures.

Methods: Over 8 years, all operative tibial plateau fractures treated by two surgeons were prospectively followed. 113 patients were identified for this study. 30 received SA and 83 received GA. All patients were treated using a similar operative protocol and physiotherapy regimen. Clinical outcomes were compared at 3 months, 6 months and the latest follow-up. These outcomes include Short Musculoskeletal Functional Assessment (SMFA) scores, pain levels, complications and reoperations. Analysis was done using student's t-tests, Chi-squared tests and multivariate linear regression.

Results: Using univariate analysis, SMFA scores were improved at 6 months in SA vs. GA patients ($\beta = -1.14$, 95% confidence interval [CI] = −2.06 to -.23, p=0.015), and pain scores were lower in SA vs. GA at 6 months (p =0.004) and at the latest followup (p=0.012). After controlling for group differences, pain scores were found to be lower in SA vs. GA at 3 months ($\beta = -0.16$, 95% CI = −0.24 to 2.02, p=0.048), but not at 6 months or the latest followup. The odds ratio of higher pain scores of a patient who received GA vs SA at 3 months was 3.1 (95% CI, 1.06 to 9.26, p=0.039).

Conclusions: In patients who undergo surgical management of a tibial plateau fracture, the use of spinal anesthesia is associated with improved functional scores and decreased pain levels up to 6 months postoperatively.

ESRA1-0265
Case Reports

FROM SURGICAL PLATE ELECTRODE TO DORSAL ROOT GANGLION STIMULATION, 29 YEAR OF EFFECTIVE NEUROPATHIC PAIN RELIEF WITH NEUROMODULATION: A CASE REPORT

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Background and aims: Spinal cord stimulation (SCS) is a widely accepted treatment option for chronic intractable neuropathic pain. However, the level of evidence for its long-term efficacy is still moderate.(1) The objective of this case report is to describe a successful case of long-term SCS for the treatment of neuropathic pain.

Methods: A 23-year-old woman with an 11-year history of severe chronic intractable neuropathic postoperative pain at the lower right leg was implanted with a surgical epidural plate electrode in 1985. The SCS resulted in a significant decrease of the patient's pain. From 2001 to 2012 she reported pain recurrence only at moments of battery discharge and lead displacement. In November 2012 a conventional quadripolar lead was implanted at the left L4 dorsal root ganglion (DRG) with complete pain reduction but with complaints of sporadic involuntary tonic contractions during walking. In October 2013, at the age of 51, the lead was replaced with a novel lead for DRG stimulation (figure 1).

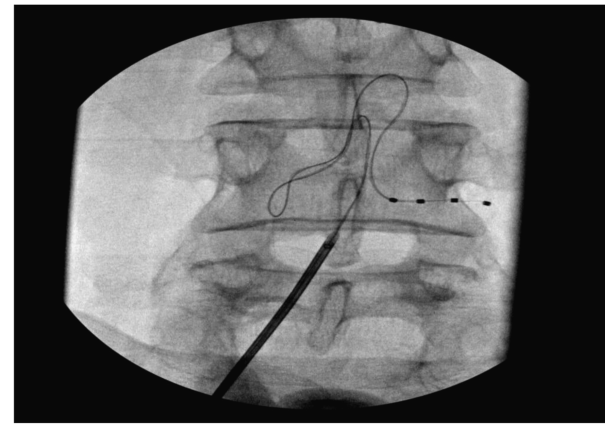

FIGURE 1.

Results: DRG stimulation lead at the left L4 DRG.

After a successful trial period with complete pain reduction and disappearance of the involuntary tonic contractions during walking, she received a new implantable stimulator. Since 1985 she reports superior pain relief from various SCS treatment when compared to medical therapy.

Conclusions: We describe a case of successful long-term SCS in a patient with chronic intractable neuropathic postoperative pain.

Reference:

1. Neurosurgery 2008;63:762–770.

ESRA1-0268
Chronic Pain Management

THE IMPACT OF SPINAL CORD STIMULATION (SCS) ON PSYCHOLOGICAL FACTORS AND THE RELATIONSHIP WITH PAIN RELIEF

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Background and aims: The association between chronic pain and measures of physical and psychological well-being are understood. This prospective audit (ethical approval not needed) was designed to observe long term psychological effects following SCS implantation for chronic pain syndromes. We observed the relation between the analgesic effect and distress, catastrophising (associated with over predictions of pain and increased use of health) and confidence in performing physical activities during six years post SCS implantation.

Methods: 30 patients (CRPS 9, FBSS 10, neuropathic pain 7, angina 4) underwent SCS implantation between 2004 and 2008 in the university hospital interdisciplinary pain centre. The pain and distress were recorded on a 10 point visual analogue scale (VAS). Catastrophising using Pain Catastrophising Scale (PCS) and confidence in performing activity on Pain Self-Efficacy Questionnaire (PSEQ). The values were collected prior to implantation, at 3, 6 months and at annual follow up.

Results: Following implantation, pain scores improved since third month and continued on similar level for six years; VAS 8.1 to 4.5, p<0.000001. Patients' distress went down from 6.5 (SD 2.2) to 3.4 (SD 2.7) during observation, p=0.0002. Similarly PCS score decreased from 26 (SD 12) to 12 (SD 11), p=0.0063. PSEQ score improved from 25 (SD 12) to 33 (SD 11), p=0.34 .

Conclusions: The pain improvement observed following implantation of a spinal cord stimulator, was mirrored by improvements in the measured

psychological parameters. Catastrophic thinking and patient's distress were significantly lower at three month post SCS implantation. Levels of improvement stayed at the same level during observed time.

ESRA1-0273
Case Reports

THORACIC EPIDURAL CAUDAL ECO-GUIDED APPROACH TO PYLOROMYOTOMY: THE BEST OPTION!?

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Background and aims: Hypertrophic pyloric stenosis (HPS) is a common gastrointestinal disorder, tends to arise with non-bilious vomiting in jet, weight loss, dehydration and electrolyte abnormalities.

A pyloromyotomy is the surgical correction of HPS. General anesthesia has been the technique of choice. But the risk of gastric regurgitation and aspiration, and postoperative apnea, has led to growing interest in loco-regional approaches. The caudal block has been deemed insufficient for pyloromyotomy, requiring high doses of anesthetic, considered unsafe.

This paper reports a case of successful approach with thoracic epidural anesthesia via caudal approach for catheter placed under direct visualization through ultrasound system.

Methods: Infant male, ASAI, 3.95 kg and diagnosis of HPS. Was proposed for thoracic epidural catheter placed by caudal approach under direct visualization through ultrasound system, for pyloromyotomy.

Results: Proceeded to the placement of the epidural catheter, up to T4. Then made single-shot of 0.2%hyperbaric bupivacaine with direct visualization of the dispersion of the anesthetic having been administered a total of 1.8ml of the same.

Conclusions: Loco-regional techniques have increasingly accepted, showing great efficacy and safety. Anesthesia for thoracic dermatomes from caudal block requires potentially toxic doses of anesthetic, and also implies lumbar and sacral anesthesia. This described approach allows to reduce the dose of anesthetic, minimizing risks, and the possibility of segmental anesthesia. Moreover, when you insert the catheter caudal approach, with greater safety and ease, you avoid the risks, potentially catastrophic, thoracic anesthesia by single shot. With this technique, yet it avoids the potential complications of general anesthesia, with less time of fasting and admission.

ESRA1-0277
Miscellaneous

ULTRASOUND-GUIDED CUTANEOUS INTERCOSTAL BRANCHES NERVES BLOCKED VERSUS THORACIC PARAVERTEBRAL FOR BREAST CANCER SURGERY: WHAT DO OUR COLLEAGUES PREFER?

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Background and aims: Landmark-guided paravertebral blockade (PV) for breast-cancer surgery has been a routine approach in our department for seven years. In 2013 single-shot ultrasound-guided block of the cutaneous branches of the intercostal nerves (UBCBIN) was introduced in our practice. We set out to observe the adherence to regional techniques and to investigate the reasons for choosing either PV or UBCBIN.

Methods: 12 months before and after UBCBIN implementation, all the patients scheduled for mastectomy and tumorectomy with axilary surgery were reviewed. Regional blockade choice and complications were collected. Patients gave their consent for the regional blockade and the study in the preoperative study. Chi-square was applied to compare blockade rates. Subsequently a questionnaire was handed out to all the consultants in our department.

Results: Data from 463 patients were included. Annual rate of regional anesthesia significantly increased from 27, 2% to 58,1%, PV being progressively abandoned since UBCBIN implementation. No major complications derived from either technique could be found. Monthly evolution of regional anesthesia performance is displayed on the graphic.

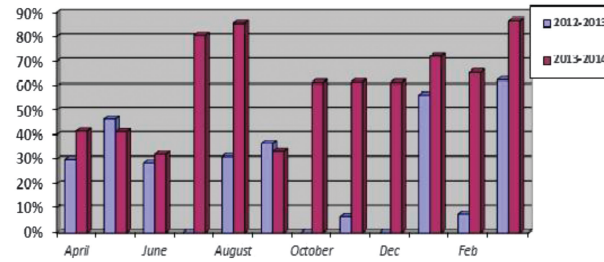

FIGURE 1.

Conclusions:

- The benefits of ultrasound guidance for real-time landmark identification, needle tip and spread of anesthetics visualization, the perception of excellent quality of analgesia, and the possibility of acquiring a learning curve on the anesthetized patient, were the reasons explaining the adherence to UBCBIN.
- However, no evidence supported the superiority of UBCBIN in terms of complications, and PV was still recognized as the gold-standard for breast surgery amongst our colleagues.

ESRA1-0279
Chronic Pain Management

LONG TERM ANALGESIC EFFICACY OF SPINAL CORD STIMULATION (SCS) - TIME RESPONSE RELENTIONSHIP

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Background and aims: This prospective audit (ethical approval not needed) was designed to observe the analgesic efficacy over six years following SCS implantation for the management of a variety of chronic pain syndromes in a single centre.

Methods: 30 patients (CRPS 9, FBSS 10, neuropathic pain 7, angina 4) underwent SCS implantation between 2004 and 2008 at university hospital interdisciplinary pain centre. The statistical difference in pain scores was measured pre-implantation, at 3, 6 months and annual follow up. The pain was recorded on a visual analogue scale (VAS) for pain related to the chronic pain syndrome and on a scale measuring pain relief (between 0 and 100% - maximal improvement) due to SCS input.

Results: There is a significant reduction in VAS pain score (figure 1) following implantation from VAS 8 (SD 1.2) pre-implantation to 5 (SD 1.9) and 4.5 (SD 2.2) at three months and six years post implantation, $p<0.000001$.

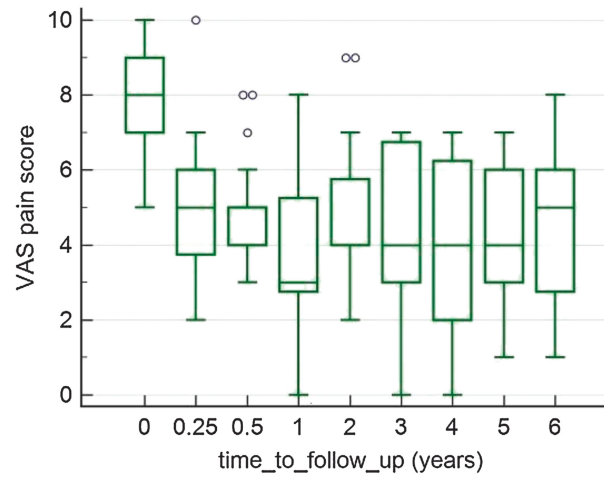

FIGURE 1.

There is a significant difference in the pain relief reported by patients between standard treatment before SCS score 35% (SD 24%) and after three months 60% (SD 26%) and at 6 year follow up 66% (SD 26%), p=0.0009.

Conclusions: SCS provides significant pain relief for the patients with refractory pain treated according to national guidelines which is demonstrated three months after implantation and is maintained on similar level for six year period of follow ups.

ESRA1-0281
Obstetric

CONVERSION OF SPINAL TO GENERAL ANAESTHESIA FOR CAESAREAN SECTION

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Background and aims: Regional anaesthesia (RA) is recommended for caesarean section (CS). Conversion to general anaesthesia (GA) due to failed RA exposes women to the risks of both techniques.

We aimed to determine the rates and reasons for conversion from spinal anaesthesia (SA) to GA.

Methods: After approval from our Trust audit department we conducted a retrospective audit. All women who had undergone anaesthesia for CS between January 2012 and September 2013 were identified. We analysed the records of those who had required conversion from SA to GA.

Results: Of the 8464 deliveries that took place, 1925 (23%) were performed by CS. 1563 (81%) under SA, 167 (9%) by epidural top-up and 195 (10%) under GA. 38 women required conversion from SA to GA.

Procedural failure	19 (50%)
No time to establish block	6 (16%)
Intraoperative pain	5 (13%)
Maternal request	4 (10.5%)
Surgical complications	4 (10.5%)

FIGURE 1.

Procedural failure accounted for half of all conversions. Of these, 13 (68%) had a BMI >30 Kg/m^2 with 6 of those having a BMI >40 Kg/m^2.

Conclusions: In the UK, the conversion rate is around 1.5%. Our audit demonstrated a rate of 2.4%.

Procedural failure was the most common indication for conversion to GA. Maternal obesity played a significant role. Ultrasound could prove a useful adjunct for facilitating SA in obese obstetric patients.

Timely communication between multidisciplinary team members could increase the time available for SA and assist the anaesthetist when deciding upon the most appropriate anaesthetic technique.

ESRA1-0283
Obstetric

OPERATING TABLE TILT DURING CAESAREAN SECTION UNDER REGIONAL ANAESTHESIA – A PROSPECTIVE AUDIT

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Background and aims: During caesarean section it is recommended to tilt the operating table 15 degrees left lateral to prevent maternal aorto-caval compression and its undesirable sequelae. This audit aimed to assess how frequently 15 degrees of left lateral tilt was maintained until delivery of the fetus and what the most frequently occurring reasons for removing tilt were.

Methods: Following spinal, epidural or combined spinal epidural the parturient was positioned supine and left lateral tilt placed on the operating table. The degree of tilt was measured using a smart phone application. The table was then tilted to 15 degrees unless there were patient safety concerns. If any tilt was subsequently removed the reason was documented and the degree of tilt re-measured unless this was prevented by clinical urgency of the case. This audit was granted local ethical approval before commencement.

Results: During a 1 month period 29 caesarean sections from were audited; 25 of which used spinal anaesthesia, 3 epidural, and 1 CSE. In 11 cases left lateral tilt was reduced before delivery. In 7 cases this was because of surgical request and in 4 cases it was due to anaesthetists request. When tilt was removed the mean angle at re-measurement was 8 degrees. Paturient BMI at pregnancy booking in cases where tilt was removed was over 40 in 8 cases.

Conclusions: Maintaining 15 degrees of left lateral tilt until fetal delivery was not practical for surgeons in 28% of cases and occurred most commonly in morbidly obese parturients.

ESRA1-0287
Case Reports

PERSISTENT SCIATIC AND SAPHENOUS NEUROPATHY AFTER POPLITEAL-SAPHENOUS NERVE BLOCK WITH PERINEURAL DEXAMETHASONE AND BUPIVACAINE.

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Background and aims: We present a case in which severe post-operative nerve injury occurred after an otherwise uneventful ultrasound guided popliteal and saphenous nerve block was performed, with a combination of perineural 0.5% bupivacaine and 8 mg dexamethasone.

Methods: A 32 year old 95 kg male presented for repair of a peroneal tendon injury. A solution of local anesthetic was prepared, consisting of 60 mL of bupivacaine 0.5%, dexamethasone 8 mg, and epinephrine 150 mcg. Using ultrasound guidance, 40 mL of this local anesthetic solution was deposited around the common fibular and posterior tibial nerves, without evidence of nerve swelling. After surgery, the patient's foot remained insensate until the 4th post-operative day. Nerve conduction studies and needle EMG studies on the 6th post-operative day demonstrated significant axonal injury patterns to these nerves, including the saphenous nerve.

Results: Dexamethasone has become increasingly popular as a standard perineural adjuvant, despite a lack of evidence demonstrating a direct neural site of action. There is no consensus on dosing and route of administration, and there may even be no advantage to its use with respect of quality of recovery. In this case, severe axonal injury occurred in the setting of perineurally administered dexamethasone, and hence cannot be excluded as having potentially contributed to the cause of this neuropathy.

Conclusions: In the absence of dose–response pharmacologic data for perineural and parenteral dexamethasone administration, and given the multi-factorial nature of post-block peripheral nerve injury, caution is advised against routine perineural administration of dexamethasone.

ESRA1-0303
Miscellaneous

EVALUATION OF CYTOTOXIC EFFECT OF LIDOCAINE IN ORAL CANCER CELL LINES

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Background and aims: Topical application of local anaesthetics has been reported to produce good pain control in patients with head and neck tumours and to inhibit cancer cell proliferation, invasion and migration. The mechanisms underlying these effects are not fully understood, namely in oral cancer. With this work, we intend to evaluate the cytotoxic effect of lidocaine in oral cancer cell lines (OCC), namely in cell viability and proliferation.

Methods: For this purpose, we used two OCC cell lines, the HSC-3 (metastatic) and BICR-10 (*in situ*) cells, cultured in the presence and absence of different concentrations of lidocaine for 72 hours. Cell proliferation was evaluated by the Alamar Blue assay. Cell death was analyzed by optical microscopy after

May-Grunwald staining and by flow cytometry using annexin-V and propidium iodide assay. Flow cytometry was also used to analyse cell cycle (using propidium iodide incorporation), caspases levels (apostat kit) and mitochondrial membrane potential by JC-1 assay.
Results: Our results show that lidocaine induced a cytotoxic and antiproliferative effects in a dose, time and cell type-dependent manner. HSC-3 cells seem to be more sensitive to lidocaine effect than BICR-10 cells, as the IC-50 at 48 hours was 4 – 4.5 mM and 5 – 6 mM, respectively. Furthermore, lidocaine induced cell death mainly by apoptosis and apoptosis/necrosis, which may be related with the observed increase in caspases levels and pre-G1 peak in cell cycle and with the mitochondrial membrane potential decrease.
Conclusions: Our results suggest that lidocaine may be a new therapeutic adjuvant in oral cancer, namely in metastatic cancer.

ESRA1-0306
Obstetric

CONTINUOUS EPIDURAL INFUSION VERSUS PROGRAMMED INTERMITTENT EPIDURAL BOLUS FOR LABOR ANALGESIA: EFFECTS ON MATERNAL MOTOR FUNCTION AND SATISFACTION

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Background and aims: The degree of pain and the quality of pain relief affect patients satisfaction with the birthing process. The aim of this study was to evaluate the effects on motor function and satisfaction in women who received programmed intermittent epidural bolus (PIEB) or continuous epidural infusion (CEI) for maintenance of labor analgesia.
Methods: After study approval by the institutional ethics committee, a prospective study was conducted in women who requested labor analgesia during 4 months. After an initial epidural loading dose of Ropivacaine 0.15% with Sufentanil 0.5µg/ml, patients were randomly assigned to receive PIEB or CEI (Ropivacaine 0.1% plus Sufentanil 0.2µg/ml - 10 ml/h). Rescue bolus of 5 ml was allowed in both groups with the infusion pump. Descriptive analyses of variables were used to summarize data and parametric tests were performed for comparisons. A $p<0.05$ was considered significantly different.
Results: 310 patients were studied (PIEB=139; CEI=171). Motor block was reported in 16.1% in the CEI group and in 6.8% in the PIEB group ($p<0.038$). In the CEI group 6.6% reported nausea and vomiting and 11.4% pruritis vs 1.7% and 5.1% in the PEIB group. Satisfaction mean scores in CEI group were 8.59±0.2 and 8.50±0.3 in PIEB group. No significant differences were found when nausea and vomiting, pruritis and satisfaction mean scores were considered.
Conclusions: Although maintenance of epidural analgesia with PIEB compared with CEI resulted in lower maternal motor block the satisfaction mean scores was similar in both groups.

ESRA1-0314
Chronic Pain Management

HORNER SYNDROME AFTER CERVICAL MEDIAN BRANCH RADIOFREQUENCY NEUROTOMY

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Background and aims: Chronic neck pain, a common cause of disability, seems to be the result of several interacting mechanisms. One common type of trauma associated with chronic neck pain is whiplash-associated disorder (WAD) (1).

Although relief may not be permanent, there is strong evidence that radiofrequency denervation is effective in reducing pain in patients with chronic whiplash injury. Moreover, it appears that the procedure can be repeated with a similar probability of success (2).

Here we present a case of Horner syndrome as an unusual complications of Cervical median branch radiofrequency neurotomy.
Methods: A 49 years old woman has suffered a whiplash injury in July 2007 after a road traffic accident caused her severe persistent neck pain, she underwent a left C5,C6 and C7 median branch radiofrequency neurotomy in theatres under fluroscopy guide.

15 minutes after the procedure the patient developed headache, left sided flushed face, dropping of left eye lid with blurred vision, smaller left pupil and tingling in her left arm.

The patients' clinical signs confirmed left Horner syndrome. The patient's symptoms completely subsided on the second morning.
Results: Telephone follow up 8 weeks after the injection, the patient did not report any further side effects.
Conclusions: This report documents the unusual occurrence of Horner syndrome following Cervical median branch radiofrequency neurotomy.

Although Horner syndrome is well recognized following stellate ganglion block, we found no other reports of Horner syndrome following cervical facet joints radiofrequency neurotomy. Physicians involved with radiofrequency denervations should be aware of this potential complication.

ESRA1-0317
Miscellaneous

A SURVEY COMPARING ANAESTHETIC CONSENT OF NEUROAXIAL BLOCKS, PERIPHERAL NERVE BLOCKS AND GENERAL ANAESTHETICS BETWEEN TWO REGIONS

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Background and aims: Anaesthesia has the potential to expose any patient to a wide variety of risks. Some of these complications are so rare that is it difficult to quantify the likelihood of them occurring. The AAGBI states in its guidance that information should be provided about "rare but serious complications." The following survey was designed to find out if anaesthetists routinely give information to their patients about rare but serious complications.
Methods: A survey was undertaken of anaesthetists working in two regions over three sites: Lister Hospital, Queen Elizabeth II Hospital and the John Radcliffe Hospital. The survey included 4 open questions asking participants which risks they routinely explain to patients when consenting for neuraxial blocks, peripheral nerve blocks, general anaesthesia and any situations in which the doctors modified their consenting procedure.
Results: In total 50 anaesthetists returned survey forms. The commonly mentioned risks for neuraxial blocks were nerve injury, failed or incomplete block and post-dural puncture headache. The commonly explained risks for peripheral nerve blocks were nerve injury and block failure. In total 23 factors were given as reasons to modify the consenting process. When the results are separated into regions similar risks are explained.
Conclusions: In conclusion, our survey shows that many anaesthetists do not mention 'rare but serious' risks when consenting for anaesthesia and that this is not affected by region. National guidelines recommend against this practice.

ESRA1-0327
Obstetric

FAILURE OF NEURAXIAL BLOCKADE IN CAESAREAN DELIVERY ANAESTHESIA: RETROSPECTIVE STUDY OF INCIDENCE AND DETERMINANTS OF FAILURE

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Background and aims: Neuraxial blockade (NAB) is considered the method of choice in anaesthesia for caesarean section, when compared with general anaesthesia (GA). The aim of this study was to determine the incidence of NAB´s failure in caesarean section and identify the determinants associated.
Methods: Retrospective study performed in 1380 pregnant women undergoing elective or urgent caesarean section under NAB (January 2011- December 2012). Women aged above 16 years, ASA I-III, undergoing epidural block (EB), single shot subarachnoid block (ssSAB) and subarachnoid block under sequential technique (SABst) were included. Caesareans performed under GA as first choice were excluded. Descriptive analyses, t-test and Chi^2 test were performed.
Results: The incidence of NAB´s failure was 5.6% in elective caesarean sections and 14.6% in urgent caesarean sections. In urgent caesarean sections, the percentage of failure of EB was higher when compared with SAB (17.2% vs 7.4%, $p<0.001$). Women younger than 31 years had more percentage of NAB´s failure (16% vs 7.7%, $p<0.001$), as well as women with gestational age above 40 weeks (13.8% vs 9.2%, $p = 0.008$). There was a higher percentage of NAB´s failure in pregnant women whose indication for caesarean

delivery was prolonged labor (15.2% vs 10.7%, p = 0.031). There was no statistical association with other factors evaluated.
Conclusions: The incidence of NAB´s failure was higher in urgent caesareans comparing with elective caesareans. In urgent caesareans, the determinants of NAB´s failure were the EB, young mothers, high gestational age and prolonged labor.

ESRA1-0330
Case Reports

FLUOROSCOPIC-ASSISTED LUMBAR DRAIN PLACEMENT AFTER FAILURE TO IDENTIFY ULTRASOUND ACOUSTIC WINDOW IN A PATIENT WITH UNKNOWN PREVIOUS LUMBAR BACK SURGERY

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Background and aims: We present a case of an elderly woman with unknown previous lumbar back surgery, in whom we were unable to place a surgery requested lumbar drain using landmark or ultrasound assisted techniques. The pre-procedure ultrasound scan was predictive of a low probability of procedure success without the use of fluoroscopy.
Methods: A 71 year-old white female was scheduled for urgent endovascular aneurysm repair and pre-procedure lumbar intrathecal drain placement. After several unsuccessful attempts using landmark techniques, ultrasonography was utilized. Although the midline could be easily located, it was not possible to find an inter-laminar window in either the midline or paramedian oblique view. Despite this, multiple unsuccessful attempts were made with real-time ultrasound guided needle advancement, eventually resulting in a bloody tap. Fluoroscopy was then used to locate the L4-L5 interspace, and the intrathecal space was successfully accessed and a lumbar drain was placed on the first attempt.
Results: Neuraxial ultrasound has been used to enhance placement of difficult spinal blocks, and can also be used to assist with difficult lumbar drain placement. Placement of a lumbar drain is considered to be an essential element of the surgical procedure, in order to minimize the risks of paraplegia and cord injury The inability to identify ultrasound generated acoustic windows in the lumbar spine should prompt immediate consideration of fluoroscopic guidance.
Conclusions: Patients requiring lumbar drain placement with poor anatomic landmarks and absence of ultrasound acoustic windows may benefit from the early use of fluoroscopy in order to enhance procedure success and minimize potential complications.

ESRA1-0338
Peripheral Nerve Blocks

THERMOGRAPHIC TEMPERATURE MEASUREMENT IN THE EFFECTIVENESS OF ULTRASOUND-GUIDED TRANSVERSE ABDOMINIS PLANE BLOCK

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Background and aims: Various assessment methods including infrared thermography have been used to assess the effect of peripheral block, especially limb and central neuraxial block. However, the effect of peripheral block on the body trunk is unknown. We designed this study to evaluate the usefulness of thermographic temperature measurement during ultrasound-guided transverse abdominis plane (TAP) block.
Methods: This study was approved by the institutional ethics committee, and informed consent was obtained from each patient. Ten patients undergoing inguinal hernia repair surgery were included. We performed ultrasound-guided TAP block, injected 25 ml of 0.3 % ropivacaine and measured the abdominal skin temperature after surgery with infrared thermography. The temperature of the blocked side was compared with that of the unblocked side. Moreover, temperature measurement with thermography was compared with patient response to a cold test, as a means to assess the success or failure of block.
Results: Compared with the unblocked side, skin temperature of the blocked side was increased by 2.0 ± 0.6 °C (p = 0.00). The positive responses on the cold test were distributed proportionally to the increase in the temperature of the skin.
Conclusions: It was possible to visualize the area of effect by TAP block objectively. Infrared thermography can be used to map skin temperature after ultrasound-guided TAP block.

ESRA1-0339
Peripheral Nerve Blocks

UNPLANNED ADMISSION RATES AND REASONS FOLLOWING DAY CASE SHOULDER SURGERY

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Background and aims: Procedural boundaries often change as experience of a technique grows. Accordingly, ambulatory shoulder surgery undertaken in our unit now includes complex surgical (revision/extensive cuff repairs, open procedures) and anaesthetic (body mass index [BMI] up to 45) cases. This audit aimed to assess unplanned admissions following ambulatory shoulder surgery.
Methods: Unplanned day-case shoulder surgery admissions over a two-year period were retrospectively and anonymously identified from ward documentation. Age, BMI, surgical procedure and admission reason were noted, along with smoking and respiratory status. Chi squared tests were used to examine for significance.
Results: 338 operations (March 2012 to March 2014) were included. Nearly all patients had a low volume interscalene block (<15mls) plus/minus a general anaesthetic. 38 patients were admitted to the ward and 29 stayed overnight [Table 1].

TABLE 1.

	Reason for ward admission ward (n)	Number of those admitted who stayed overnight	Comments/statistical analysis
	Nausea (6)	3	-
	Desaturation (12)	11	*Risk increased* BMI >37 vs BMI <37 (p=0.0075) Age >60 vs age <60 (p=0.0065) *No significant effect* Respiratory status, smoking
	'Extended recovery' (16)	11	*No significant effect* BMI, age, respiratory status, smoking
	Dizziness (1)	1/1	
	Pain (1)	1	No block
	Extended surgery (2)	2	
Totals	38	29	
% of total cases (n=338)	11.2%	8.6%	

Conclusions: Our unplanned admission rate (8.6%) is higher than the 2% standard, likely due to case complexity. Desaturation (significantly linked to age and BMI), but not pain, was the commonest specific reason. Nevertheless the desaturation rate was low (3.5%), despite a clinically successful interscalene block in all patients.

ESRA1-0341
Peripheral Nerve Blocks

TAP BLOCK PLUS ILIOINGUINAL/ILIOHYPOGASTRIC NERVE BLOCK IN PERIOPERATIVE MANAGEMENT OF INGUINAL HERNIA REPAIR

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Background and aims: The analgesic benefit of transversus abdominis plane block (TAPB) in perioperative management of inguinal hernia repair (IHR) is debated[1]. The aim of this study was to evaluate the analgesic effect of TAP block combined with ilioinguinal/iliohyprogastric nerve block (IINB) in patients scheduled for IHR.
Methods: Thirty patients undergoing outpatient IHR were enrolled. Patients were randomly allocated to case group (TAPB plus IINB) or to control group (IINB). The anesthetic procedures were performed under ultrasound guidance[2]. The outcome measures were the incidence of inadequate anesthesia during surgery (requiring systemic sedation and/or infiltration of local anesthetic) and the

pain scores while coughing and at rest after surgery (end of surgery, 2h, 12h and 24h) between the two groups.
Results: Five patients (33%) of the case group vs 10 patients (66%) of the control group ($p<0.05$) needed intraoperative sedation. No significant differences in additional local anesthetic volume and VAS score at the end of surgery were found between the two groups. Patients enrolled in the case group reported lower pain scores at the 2h postoperative evaluation (at rest 2.7 vs 6.1, $p<0.05$, on coughing 3.1 vs 6.9, $p < 0.05$), at the 12 h (at rest 2.5 vs 5.8, $p<0.05$, on coughing 2.8 vs 5.9, $p<0.05$) and at 24 h (at rest 1.9 vs 4.1, $p<0.05$, on coughing 2.5 vs 5.2, $p<0.05$).
Conclusions: The combination of TAPB with IINB is associated with better intraoperative anesthesia and lower post-operative pain scores as compared with IINB.

References:

1) Petersen P.L. Eur J Anaesthesiol 2013.

2) Heil J.W. Reg Anesth Pain Med 2010.

ESRA1-0349
Case Reports

INNOVATIVE INJECTABLE WIRELESS MICRO-NEUROSTIMULATOR: A NEW OPPORTUNITY FOR THE TREATMENT OF CHRONIC PAIN. THE FIRST ITALIAN SUBCUTANEOUS IMPLANT

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Background and aims: Neurostimulation is a well-established treatment for chronic intractable pain since 60s. However it is highly inconvenient and invasive,often leaving the patient unable to receive treatment when needed most. The effectiveness of using an implanted wireless microstimulator (mettere nome ndr) for the treatment of post-herpetic neuropathic pain (PHN) has been tested.
Methods: 40 years old woman with a PHN for 5 years unresponsive to pharmacologic treatments was implanted with a wireless micro-stimulator (Stimwave Technologies Inc.™). The system is composed of percutaneous microchip leads with wireless technology integrated (1mm x 10 cm). Patient was implanted with two subcutaneous 4 polar leads in the left dorsal paravertebral region. The implant didn't need tunnelization action and creation of pocket for IPG with optimisation of the implant execution time and a consequent decrease the risk of infection. IPad® application allowed to set up the values of stimulation.
Results: No complications occurred during surgical procedure. Leads was placed using an eco-guided technique with a local anaesthesia. The surgical incision was only 20 mm. After 1 month of stimulation patient reported a 50% reduction of pain.
Conclusions: This device should be an inexpensive, safe, and convenient solution to patients with chronic pain of different origins.

The innovation holds promise for heightened efficacy while reducing the majority of safety risks and side-effects compared to existing pain management solutions.

ESRA1-0350
Central Nerve Blocks

DETERMINATION OF THE INITIAL MINIMUM EFFECTIVE DOSE OF 0.5% BUPIVACAINE WITH 20MCG OF FENTANYL FOR AN OPERATIVE FIXATION OF FRACTURED NECK OF FEMUR

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Background and aims: Continuous spinal anaesthesia is evolving as the preferred technique for high risk orthopaedic patients. However, the optimum dose of local anaesthetic combined with intrathecal opiate required to commence emergency hip surgery is unknown.

We designed a study to determine the initial minimum effective dose of bupivacaine 0.5% with 20mcg of fentanyl required to initiate the operative fixation of fractured neck of femur.
Methods: Patients scheduled for emergency hip surgery were recruited into the 'dynamic hip screw (DHS)' or 'hemiarthroplasty (HEMI)' group until at least six independent crossovers (success/failure pairs) occurred in each group. The first patient received 0.5ml of bupivacaine 0.5% with 20 mcg of fentanyl intrathecally. The doses for consecutive patients were determined by the response of the previous patient using an up-and-down method with incremental increase or decrease of 0.1ml. The Dixon and Massey model was used to calculate ED50. Probit analysis was employed to verify ED50 and estimate ED95.
Results: Thirty one patients were included in the study. ED50 calculated by the Dixon and Massey method was 0.29ml (1.45mg) (95% CI 0.23-0.35) for DHS and 0.33ml (1.65mg) (95% CI 0.28-0.38) of bupivacaine 0.5% for HEMI. Probit analysis confirmed $ED50_{DHS}$ as 0.29ml (95% CI 0.288-0.294), $ED50_{HEMI}$ as 0.32ml (95% CI 0.316-0.325) and estimated $ED95_{DHS}$ as 0.34ml (95% CI 0.33-0.35), $ED95_{HEMI}$ as 0.36ml (95% CI 0.35-0.37) of bupivacaine 0.5%.
Conclusions: The dose of local anaesthetic combined with intrathecal fentanyl required to start an emergency hip surgery is less than 0.4ml of bupivacaine 0.5%.

ESRA1-0354
Central Nerve Blocks

COMPARISON BETWEEN MIDAZOLAM AND PROPOFOL SEDATION WITH BIS MONITORING IN GERIATRIC HIP SURGERY UNDER SPINAL ANESTHESIA

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Background and aims: We aimed to assess the effects of propofol and midazolam sedation on hemodynamics and the cardiovascular system with BIS monitoring, as well as patient and surgeon satisfaction, administered as perfusion after intravenous bolus under spinal anesthesia in geriatric patients.
Methods: A total of 60 geriatric cases were randomly divided into two groups; midazolam (Group M, n=30) and propofol (Group P, n=30). After spinal block, Group M was given 0.01-0.05 mg kg?? bolus midazolam and then continuous infusion with 0.02-0.1 mg kg?? hr?[1] dose was begun. For Group P after 1 mg kg?? bolus propofol, continuous infusion with 1–3 mg kg?? hr?[1] dose was begun. Afterwards the infusion dose was regulated so BIS was held at 65-80%. The patient's systolic blood pressure, diastolic blood pressure, mean arterial pressure, heart rate, peripheral oxygen saturation, respiration rate, Wilson's sedation score, side effects and recovery period were recorded together with patient and surgeon satisfaction.
Results: The respiration rate was significantly higher in midazolam group cases after surgery compared to the propofol cases ($p<0.05$). There was a significant statistical difference between the groups in terms of sedation score after bolus ($p<0.05$). In the groups there was a significant statistical difference between cases in terms of sedation scores after surgery ($p<0.05$).
Conclusions: In spinal anesthesia applications for geriatric patients it was shown that propofol and midazolam given by the intravenous perfusion method, in addition to their individual benefits, provide reliable sedation that does not disrupt hemodynamics, cause respiratory depression, and allows patients to be revived and cooperative.

ESRA1-0359
Obstetric

REVIEW OF OUTCOME OF POSTDURAL PUNCTURE HEADACHE AND ACCIDENTAL DURAL PUNCTURES OVER 3 YEARS IN A TERTIARY MATERNITY UNIT

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Background and aims: The aim of the audit was to establish the incidence of postdural puncture headache (PDPH) in our unit during 2010-2012, factors increasing the risk of PDPH, outcome of recognised accidental dural puncture (ADP) and spinal catheters.
Methods: Review of obstetrics charts completed over 3 years, identification of cases with PDPH and recognised ADP with review of the interventions, outcome and follow-up data.
Results: A total of 83 cases with PDPH identified over a 3 year period, during which 21,040 deliveries occurred. 5778 epidural blocks were performed, 3122 spinals for caesarean delivery, 360 combined spinal-epidural (CSE) blocks. PDPH after an epidural developed in 55 women (0.95%), 11 parturients after spinal for caesarean delivery (0.35%), 15 cases followed spinals for other obstetric procedures, two after CSE (0.55%). Thirty cases of ADP followed by epidural resite were noted: 12 (40%) did not develop PDPH, and 18 (60%) required an EBP. Spinal catheters sited in 19 cases of recognised ADP: 10 had no subsequent PDPH (53%), 3 cases developed PDPH, which settled with conservative treatment (15%) and 6 cases required an EBP (32%).

Conclusions: The incidence of PDPH post epidurals in our unit is 0.95% and that following spinals 0.35%, which is not dissimilar to the accepted average. Only 55% of recognised ADP developed PDPH. The risk of requiring EBP is lower after spinal catheter rather than after epidural resite in case of recognised ADP (32% vs 60%).

ESRA1-0363
Miscellaneous

INVOLVEMENT OF REACTIVE OXYGEN SPECIES IN THE SHEDDING OF PROCOAGULANT PARTICLES FROM MONOCYTES EXPOSED TO BUPIVACAINE: CAUSE OR BARE RESULTS?

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Background and aims: Bupivacaine is one of the safest anesthetic for use of neuraxial anesthesia. However, its local injection has been reported to occasionally provoke calcification of skeletal muscles. We hypothesized that the generation of reactive oxygen species (ROS) from monocytes/macrophages to promote coagulant activity plays an important role in the cytotoxicity.
Methods: Cell suspension of human monocytic cells THP-1 was incubated for 30 min with Hoechst 33342 that stains nuclei in intact cells. The suspension was further loaded with bupivacaine (1 mg/ml) and an oxidant indicator hydroehidine (HE, 1 μM) for pre-selected time period with or without superoxide dismutase (SOD), catalase, or deferoxamine, which scavenges superoxide, H_2O_2, or hydroxyl radical, respectively. The suspension was subjected to flow cytometry.
Results: Bupivacaine time-dependently (~90 min) increased HE-related fluorescence intensity (FI) in THP-1 cells and in Hoechst-(+) particles shed from parental THP-1 cells. These particles were significantly smaller than the parental cells, possessing procoagulant activity and the characteristics of apoptotic bodies. HE-related FI from Hoechst-(+) particles was significantly higher than that from parental cells. Number of Hoechst-(+) particles shed from parental THP-1 cells was increased by bupivacaine. SOD and catalase but not deferoxamine significantly decreased the number and the HE-related FI in Hoechst-(+) particles and parental cells.
Conclusions: Bupivacaine increased the shedding of procoagulant particles in which the level of ROS were higher than that in parental monocytes. It is suggested that several ROS as the end-products by the exposure of monocytes to bupivacaine partly caused the cytotoxicity to promote procoagulant activity of monocytes.

ESRA1-0364
Chronic Pain Management

PERCUTANEOUS TRANSFORAMINAL BALLOON FORAMINOPLASTY USING DILATING WORKING CANNULA IN PATIENTS WITH LUMBAR FORAMINAL STENOSIS

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Background and aims: Recently percutaneous transforaminal balloon foraminoplasty (PTBF) has been tried to treat lumbar foraminal stenosis (LFS) but placing a catheter tip at the accurate site was still a problem due to the flexibility of the catheter. The objective of this study was to improve the success rate and evaluate the effectiveness of PTBF.
Methods: A 61-year-old male patient had undergone two lumbar microdiscectomies but he complained of persistent pain in the left buttock and a tingling sensation with motor weakness. He was diagnosed as left foraminal stenosis combined with foraminal disc herniation at the L4-5 level.

The other case is a 51-year-old female complained of lower back and radiating pain on right side. She had spinal canal stenosis and right foraminal stenosis at the L4-5 level. We decided to perform PTBFs using dilating working cannula in these cases.

Under the fluoroscopic guidance, an 18-gauge needle was introduced and a thin guidewire was inserted. The needle was then removed and serial 1-2-3-mm dilating cannulas were inserted. A balloon catheter was advanced through the working sheath and contrast media was injected to confirm a perineural filling defect. The catheter was introduced at the narrowed site and then dilated the balloon. Finally local anesthetic, normal saline, hyaluronidase and steroid was injected.
Results: The positioning of the balloon catheter was easily done and the foraminoplasty with dilated balloon was well performed. The symptoms of two patients were much improved and motor weakness was gradually recovered.
Conclusions: PTBF using dilating working cannula is useful and effective treatment for LFS.

ESRA1-0365
Chronic Pain Management

PERCUTANEOUS RADIOFREQUENCY ANNULOPLASTY TARGETING THE ANNULAR FISSURES FOR DISCOGENIC LOW BACK PAIN

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Background and aims: Discogenic low back pain (DLBP) can be caused by disorders internal disc disruption, degenerative disc disease, contained disc herniation, or damage of annulus fibrosus. A provocative discography has been used as a reliable method for the accurate diagnosis of DLBP. The purpose of this study is to describe effectiveness of precutaneous radiofrequency annuloplasty (PRA) targeting the annular fissures (AF) using post-discogram-CT image to treat DLBP.
Methods: 40 patients who suffered DLBP underwent PRA from January 2008 to December 2013 and were followed up for a mean period of 5.9 months. Outcomes were assessed using the visual analog scale (VAS) for back pain.

In all patients, DLBPs were confirmed by provocative discography based on the pathology of MR findings. After discography, computed tomography (CT) was checked immediately to confirm the AF. These post-discogram-CT images gave the information about targeted point of PRA.

Under the fluoroscopic guidance, 18-guage spinal needle was inserted toward the annular fissures and a serial dilating obturatos were inserted. Through the 4-mm working sheath, direct simple decompression using forceps and radiofrequency ablation were performed.
Results: The mean back pain VAS improved from 6.7 to 1.8 (range, 4–9 to 0–4). 38 patients reported a significant or some improvement in back pain despite the difference of degree. No pain relieved in 2 patients. There were no serious complications observed.
Conclusions: PRA targeting the annular fissures provides favorable outcomes for the patients with DLBP.

ESRA1-0368
Postoperative Pain Management

THE CHANGE OF PLASMA LEVOBUPIVACAINE CONCENTRATION AFTER SECOND ABDOMINAL BLOCK

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Background and aims: Rectus sheath block (RSB) and transverse abdominal plane (TAP) block are becoming the most common technique in lower abdominal surgery. Sometimes, the operation will last longer than expected, thus exceeding the local anesthetic effect of the block and necessitating a second block for postoperative pain. In this study, we examined the plasma concentration of LEV after the second block because it has not been previously reported.
Methods: Fourteen adult patients undergoing elective lower abdominal laparoscopic surgery were recruited and received bilateral ultrasound-guided RSB or TAP blocks before the operation (150 mg of LEV). Arterial blood was collected every 15 min for the first hour, then every 30 min for the following hours until the patient was returned to the ward. After the operation, they received another block (RSB+TAP or TAP+RSB) with 100 mg LEV.
Results: Mean time between blocks was 182.7 minutes. In the RSB+TAP group, the mean peak total LEV concentration occurred 20 min post-injection and was higher than TAP+RSB group. In the RSB+TAP group, the mean peak total LEV concentration was 1565.1 mcg/ml. In the TAP+RSB group, the mean peak total LEV concentration was 2377.3 mcg/ml. No complications were observed in any patients.
Conclusions: The second block 182.7 minutes after the first block with 100 mg levobupivacaine is safe although approaching the upper limits. We should be scrupulously careful concering the dose of LEV and the time between the first and second blocks.

ESRA1-0372
Postoperative Pain Management

IS THERE ANY ANALGESIC BENEFIT FROM PREOPERATIVE VS. POSTOPERATIVE ADMINISTRATION OF ETORICOXIB IN TOTAL KNEE ARTHROPLASTY?

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Background and aims: Evaluation of efficacy of pre-emptive analgesia witht Etoricoxib after TKA.

Methods: After Ethics Commitee Approval we performed a prospective randomised study in 161 patients ASA I-II scheduled for primary TKA, divided in 3 groups: group A (Etoricoxib 120 mg orally one hour before surgery), group B (Etoricoxib 120 mg at the end of surgery) and group C placebo. Surgery has been performed under spinal anesthesia with Bupivacaine 0.5% and sedation with Propofole.

All groups received postoperative analgesia when SVA > 3, with IV Perfalgan in fixed doses 1 g every 8 h and morphine (loading dose 0.1 mg/kg and titration until SVA < 3, followed by SC administration of 1/2 of total loading dose on demand for the following 48 h).

Efficacy was evaluated by the time interval from end of surgery until the first analgesic dose, the total amount of morphine in the first 24 and 48 h postoperative, the side effects and necessary amount of adjuvant medication.

Results: Although both groups A and B were significantly different from group C, there are no significant differences between groups A and B regarding the time interval until first rescue analgesic dose or morphine consumption within the first 24 h postoperatively. The morphine consumption at 48 h was significantly lower in group A vs. B.

Conclusions: Etoricoxib administrated pre-operatively has no pre-emptive analgesic effect within the fist postoperative 24 hours.

ESRA1-0377
Miscellaneous

DEXMEDETOMIDINE-FENTANYL VERSUS PETHIDINE-PROMETHAZINE FOR CONSCIOUS SEDATION AND ANALGESIA DURING OOCYTE RETREIVAL FOR IN VITRO FERTILISATION

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Background and aims: The intent of our study was to compare the effects of dexmedetomidine and fentanyl on perioperative sedation, pain score, hemodynamics, patient's satisfaction, readiness to discharge and safety on fertilization.

Methods: A total of 100 women between 25-40 years of age scheduled for oocyte retrieval were randomized. Pethidine 1 mg/kg and promethazine 0.5 mg/kg were given in group 1(n=50). A loading dose of dexmedetomidine 1 microgram/kg and fentanyl 1 microgram/kg was given in group 2(n=50). Patients not maintaining Ramsay sedation score(RSS) of >2 or Visual analogue scale(VAS) of < 4 were given additional doses defined as rescue analgesia. Blood pressure, heart rate, RSS, VAS and patient's satisfaction score were assessed. Discharge criteria was assessed by aldrete score. Effects on embryo quality and fertilization rates were noted.

Results: Dexmedetomidine group had shown a fall in blood pressure and heart rate which was not statistically significant. Patients had lower vas score in dexmedetomidine group and the need of rescue analgesia was lesser. Satisfaction scores were higher in dexmedetomidine group. No difference on fertilization rates was seen.

Conclusions: Dexmedetomidine provides efficient hemodynamic stability, higher Ramsay sedation scores, lower VAS scores, higher satisfaction scores. It can be safely used as sedoanalgesic agent in oocyte retrieval.

ESRA1-0378
Miscellaneous

MONITORING USE DURING ULTRASOUND GUIDED REGIONAL ANAESTHESIA BY DELEGATES AT THE WESSEX SOCIETY OF ULTRASOUND REGIONAL ANAESTHESIA (WSURA) MEETING DECEMBER 2013

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Background and aims: A survey of monitoring during ultrasound guided regional anaesthesia (UGRA) at Queen Alexandra Hospital revealed that 10% do not always use a pulse oximeter and 30% do not use an ECG despite Association of Anaesthetists of Great Britain and Ireland (AAGBI) recommendations for minimum monitoring standards. 37% of respondents did not perform UGRA regularly.

Methods: To ascertain if this truly represented ultrasound regional anaesthetists all WSURA Annual Meeting delegates completed the same survey.

Results: 46 respondents: 59% were consultants, 65% of respondents had more than 1 session involving UGRA per week.

How frequently do you use the following monitors when performing ultrasound-guided regional blocks?						
	Never	Rarely	Sometimes	Usually	Always	Total
SpO2	0.0 % (0)	2.2 % (1)	0.0 % (0)	13.0 % (6)	84.8 % (39)	46
ECG	2.2 % (1)	0.0 % (0)	15.2 % (7)	21.7 % (10)	60.9 % (28)	46
NIBP	2.2 % (1)	4.3 % (2)	15.2 % (7)	17.4 % (8)	60.9 % (28)	46
Internal Nerve Stimulator	23.9 % (11)	17.4 % (8)	23.9 % (11)	17.4 % (8)	17.4 % (8)	46
Injection Pressure Monitor	97.8 % (45)	0.0 % (0)	0.0 % (0)	2.2 % (1)	0.0 % (0)	46

FIGURE 1.

86.96% believed using monitoring would not affect the incidence of local anaesthetic (LA) toxicity, 79.1% believed it would not affect the incidence of nerve damage and 65.22% believed monitoring would not affect overall safety. 28.26% believed monitoring would increase time taken. 76 % get the ODP to inject LA.

Conclusions: While intuitively ultrasound should reduce complications in peripheral nerve blocks, prospective studies have yet to support this. Our survey demonstrates some anaesthetists do not use full monitoring despite AAGBI recommendations. We postulate that anaesthetists feel safer injecting LA under ultrasound, combined with the improved safety profile of modern drugs and the reduced volumes necessary for UGRA. Although ultrasound allows structures to be visualised and LA doses to be reduced, its role in preventing complications – particularly neurological damage - is less clear. We suggest it is time to introduce guidance specific to blocks performed with ultrasound to highlight that ultrasound alone does not confer 'immunity' to the other complications of regional blocks.

ESRA1-0379
Pediatric

PARAVERTEBRAL BLOCKS WITH CLONIDINE IN PAEDIATRIC RENAL SURGERY

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Background and aims: To assess the effectiveness of paravertebral blocks containing levobupivacaine and clonidine in children undergoing renal surgery.

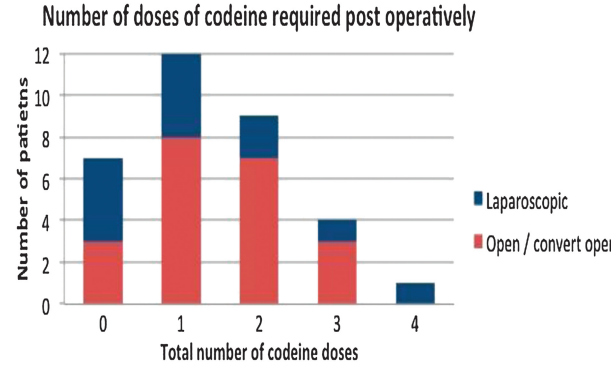

FIGURE 1.

Prior to clonidine, ketamine was a popular adjunct but withdrawn due to neurotoxicity concerns.

Methods: 34 patients aged 4 months to 16 years underwent laparoscopic/open nephrectomy/pyeloplasty in our institution over a 3 year period. All received unilateral paravertebral blocks post induction of anaesthesia by conventional techniques.

Laparoscopic cases had injections at T9/10 and L1/2. Open cases at T9/T10. Total 0.25% levobupivacaine 1ml/kg and clonidine 2mcg/kg (1mcg/kg under 6 months). Regular paracetamol and NSAID were given. Postoperatively, regular pain scores (FLACC or self reported) and the need for rescue codeine were recorded.

Results: 21% of patients required no opioid analgesia at any point.

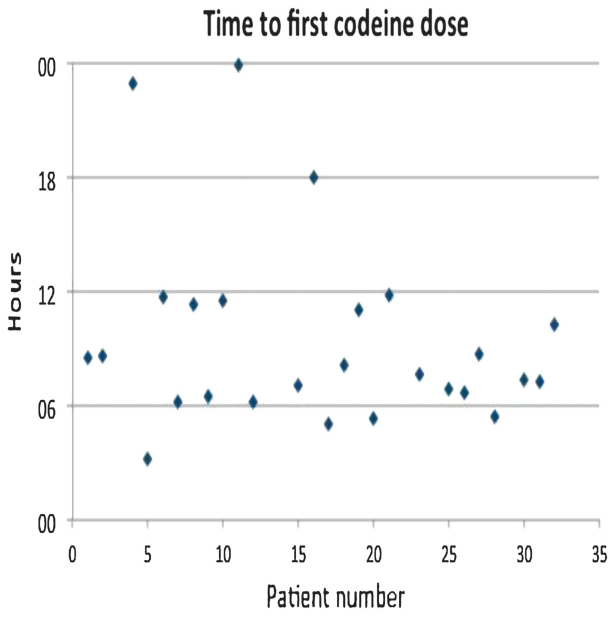

FIGURE 2.

Median & mean times to rescue analgesia were 7 hrs 55 mins and 9 hrs 31 mins respectively.

Median maximal pain score was 3 (mild).

Conclusions: Paravertebral blocks using levobupivacaine/clonidine provide safe, effective analgesia following paediatric renal surgery. Moreover, we found the analgesic profile of clonidine to be similar to that published for ketamine. 83% of paravertebral blocks offered prolonged analgesia and pain scores were mild for 90% of the time.

ESRA1-0380

Peripheral Nerve Blocks

EFFECTS OF PERIPHERAL NERVE BLOCK ON HEMODYNAMIC CHANGES DURING LAPAROSCOPIC GYNECOLOGICAL SURGERY - A COMPARISON BETWEEN TRANSVERSALIS FASCIA PLANE BLOCK AND TRANSVERSUS ABDOMINIS PLANE BLOCK

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Background and aims: It has been proposed that transversalis fascia plane block (TFPB) may provide better analgesia than transversus abdominis plane block (TAPB), which may alleviate hemodynamic changes caused by surgical noxious stimuli. The hypothesis of this study was that TFPB attenuates intraoperative hemodynamic changes more significantly than TAPB in patients having laparoscopic gynecological surgery under general anesthesia.

Methods: After institutional approval, one hundred and fifty patients scheduled for laparoscopic gynecological surgery under general anesthesia were randomly allocated to have either TFPB or TAPB. After induction of general anesthesia with propofol, fentanyl, and rocuronium, either TFPB or TAPB was administered bilaterally using 60ml of 0.25% ropivacaine under ultrasound guidance. Heart rate (HR) and systolic blood pressure (sBP) were measured and recorded 1) before induction of anesthesia, 2) before skin incision, 3) after skin incision, 4) after peritoneal insufflation, 5) after termination of peritoneal insufflation, 6) after skin closure, and 7) after emergence from general anesthesia.

TABLE 1.

		1	2	3	4	5	6	7
HR(bpm)	TAPB	83±17	58±7	57±8	78±17	57±7	58±10	79±16
HR(bpm)	TFPB	84±15	59±6	59±7	80±22	59±7	64±13	79±16
sBP(mmHg)	TAPB	129±15	94±12	114±17	143±19	91±10	96±11	122±15
sBP(mmHg)	TFPB	132±15	93±10	106±14	145±25	91±15	101±17	122±18

Values are mean±SD. There were no significant differences in HR and sBP at any points of measurement between the two groups.

Results:

Conclusions: Hemodynamic changes during laparoscopic gynecological surgery under general anesthesia supplemented with TFPB were comparable to those supplemented with TAPB.

ESRA1-0382
Pediatric

THE ROLE OF ULTRASOUND IN PERIPHERAL NERVE BLOCKS AND ITS EFFECT ON THE CHOICE OF A REGIONAL ANESTHESIA TECHNIQUE IN CHILDREN

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Background and aims: Analysis of regional anesthesia and analgesia methods in a 18 month period of using ultrasound, compared to a 18 month period prior to the use of ultrasound.

Methods: We collected restrospective data to analyze the number of procedures of regional anaesthesia and analgesia in two periods. Group `A` is the 18 month period of using ultrasound in daily practice. Group `B` is the 18 month period prior to the introduction of ultrasound. Methods of regional anesthesia and analgesia were divided into neuroaxial (subarachnoidal, epidural, kaudal) and peripheral blocks (trunck, upper limbs and lower limbs). Ultrasound was used when performing procedures of peripheral regional anesthesia and analgesia.

Results: 644 procedures of regional anesthesia and analgesia were performed in group A. Where, 155 procedures for neuroaxial blocks and 489 procedures for peripheral blocks, where 138 of those with ultrasound assistance. In group B, 519 procedures of regional anesthesia and analgesia. Where, 213 procedures for neuroaxial blocks and 306 for peripheral.

Conclusions: In group A was a significant increase in a number of total procedures of regional anesthesia and analgesia (23.8%). The number of procedures of neuroaxial anesthesia and analgesia decreased (27.2%), due to caudal blocks. The number of procedures of peripheral blocks has increased significantly (59.4%), specially procedures on upper and lower extremities. We have also registered (1) increased number of surgical procedures without general anaesthesia, (2) more safety during performance of blocks, and (3) better quality of postoperative analgesia.

ESRA1-0383
Pediatric

PARAVERTEBRAL BLOCKS FOR PAEDIATRIC RENAL SURGERY: MOVING ON FROM KETAMINE

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Background and aims: Paravertebral blocks have an established role in paediatric renal surgery. Injections of 0.25% levobupivacaine with clonidine have gained popularity since the withdrawal of ketamine. We aim to

demonstrate clonidine has equi-analgesic properties when compared to its predecessor.
Methods: 54 consecutive patients underwent renal surgery in our institution between 2009-2013. After induction of anaesthesia all patients received a paravertebral block at T9/T10 and for laparoscopic surgery a second injection at L1/2. Total dose 0.25% levobupivacaine 1ml/kg. Between 2009-2010, 20 patients underwent surgery and received injections containing 1ml/kg 0.25% levobupivacaine and 0.75mg/kg preservative free ketamine. Between 2011-2013, a further 34 patients had surgery and received injections containing 2mcg/kg clonidine instead of ketamine. All received regular paracetamol, NSAID and codeine as rescue analgesia. Post operative pain scores were recorded as were times to first dose of codeine.
Results: Patients ranged in age from 3 months to 16 years. 35% of ketamine patients required no opioid analgesia versus 21% in the clonidine study. With clonidine, 90% of all reported pain was mild and median time to rescue codeine was longer, 8 hours vs 7 hours. 83% of blocks offered analgesia for ≥ 6 hours. Our data demonstrated a shift in paediatric surgical practice. Between 2009-2010, approximately 75% of cases were laparoscopic by 2011-2013 open surgery was more common.
Conclusions: Paravertebral blocks with levobupivacaine and clonidine offer prolonged analgesia following renal surgery. Pain scores were in an acceptable range for approximately 90% of the time despite the trend for more invasive surgical techniques.

ESRA1-0385

EFFECT OF SHOULDER ROTATION ON DIMENSION OF THE ACOUSTIC TARGET WINDOW FOR PARAMEDIAN THORACIC EPIDURAL ACCESS IN LATERAL DECUBITUS POSITION***by author

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Background and aims: Shoulder rotation has been reported to increase the posterior longitudinal ligament (PLL) as a measure of the acoustic target window for paramedian thoracic epidural access in subjects sitting. There are limited data on effect of shoulder rotation for paramedian thoracic epidural access in lateral decubitus position. The aim of this study was to define whether shoulder roration increase the length of PLL in lateral decubitus position.
Methods: Ten adult volunteers were positioned in right lateral decubitus and flexion position on horizontal operating table. Ultrasonography was performed using right longitudinal paramedian plane to obtain optimal ultrasound view for the PLL. The length of right PLL was measured at the T7/8 and T9/10 interspaces before and after 30° rightward shoulder rotation.
Results: The mean ± SD of age (yrs), height (cm) and weight (kg) were 31.7 ± 3.3, 174.6 ± 3.3 and 74.3 ± 8.2 respectively. The mean ± SD of PLL increased significantly from 8.0 ± 1.7 mm to 9.3 ± 1.9 mm ($P < 0.01$) at the 7/8 interspace and from 9.6 ± 1.5 mm to 10.5 ± 1.5 mm ($P < 0.05$) at the 9/10 interspace before and after shoulder rotation.
Conclusions: Shoulder rotation significantly increase dimension of the acoustic target window for paramedian thoracic epidural access in lateral decubitus position.

ESRA1-0386
Miscellaneous

APPROPRIATE TIMING OF LOW MOLECULAR WEIGHT HEPARIN FOLLOWING PRIMARY TOTAL HIP AND KNEE ARTHROPLASTY FOR PROPHYLAXIS AGAINST VENOUS THROMBOEMBOLISM

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Background and aims: Joint arthroplasty is performed in patients who are often at significant risk of venous thromboembolic events (VTE). Part of the VTE prophylaxis at our institution involves administration of low molecular weight heparin (LMWH). AAGBI and RA-UK guidance, advises appropriate timing intervals between performance of a regional anaesthetic technique and safe administration of anticoagulants. We audited LMWH administration at our institution against these standards.
Methods: The case notes for all primary hip and knee arthroplasties performed at our institution between October and December 2013 were reviewed. The timing of the first post-operative dose of LMWH, whether a dose was given every 24 hours throughout the inpatient stay, the dose administered and the patient's weight were obtained.
Results: 459 patients were identified. 30 were excluded due to incomplete documentation and 5 were excluded for medical reasons necessitating changes to standard VTE prophylaxis.

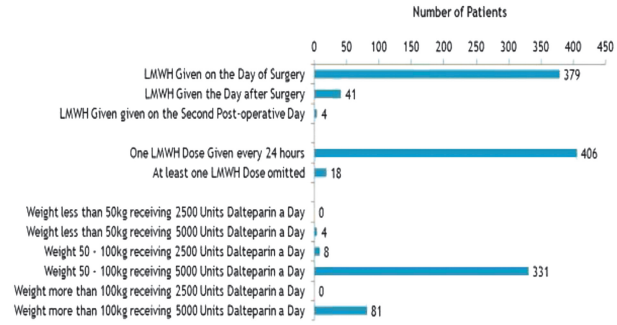

FIGURE 1.

In only 21 (5%) of patients was an attempt made to clearly relate the timing of Dalteparin to the regional anaesthetic. The most common cause for stopping Dalteparin was bleeding at the wound site.
Conclusions: Further consideration needs to be given to the dose used in patients with a higher body mass. Timing of the first dose of LMWH also needs to be clearly decided in conjunction with any regional anaesthetic techniques. Re-audit is planned after interventions to improve this have been implemented.

ESRA1-0388
Obstetric

A COMPARATIVE STUDY OF PATIENT CONTROLLED EPIDURAL ANALGESIA (PCEA) WITH AND WITHOUT BASAL INFUSION USING ROPIVACAINE 0.15% AND FENTANYL 2 MCG/ML FOR LABOUR ANALGESIA

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Background and aims: Patient-Controlled Epidural Analgesia (PCEA) is common practice for labour pain relief. This study aimed to compare two different settings of PCEA device using the same solution to provide labour analgesia.
Methods: After ethical approval, 52 parturients were randomly allocated to receive ropivacaine 0.15% and fentanyl 2 γ/ml via a PCEA device for labour analgesia as either a background infusion of 5 ml/h plus 5 ml demand bolus doses with 10 minutes lockout period (group B/D, n=26) or as only demand bolus doses of 5 ml with 10 minutes lockout period (group D, n=26). The primary outcome was the total volume of local anaesthetic administrated during labour. Secondary outcomes include analgesic efficacy and maternal and neonatal outcomes.
Results: Demographic characteristics, duration of 1st and 2nd stages, delivery modes, neonatal Apgar scores and pH, total administration of oxytocin, ephedrine and rescue doses, Bromage scale, and maternal side effects and satisfaction did not differ between groups.

The total volume of local anaesthetic was greater in group B/D compared to group D (p=0.015). Statistical difference was detected using visual analogue scale only at the end of second stage of delivery (p=0.036) and at 60 minutes from test dose administration (p=0.022) with group D exhibiting higher pain scores than group B/D. The incidence of breakthrough pain was higher in group D compared with group B/D (p=0.048).

Conclusions: The addition of background infusion to PCEA demand bolus doses increased local anaesthetic consumption and reduced breakthrough pain without affecting maternal satisfaction and neonatal outcomes.

ESRA1-0390
Central Nerve Blocks

MAJOR COMPLICATIONS FOLLOWING POSTOPERATIVE ANALGESIA WITH THORACIC EPIDURALS. MYTH OR REALITY? A LARGE DUAL CENTER REVIEW STUDY

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Background and aims: Thoracic epidurals are the principal mode of postoperative analgesia for major thoracic surgeries in this large 2-site unit. Cases are predominantly thoracotomy for resection of lung malignancies and lung transplantation. A broad range of insertion techniques exists amongst the anaesthetists but application of robust safety standards and the minimisation of potential complications results in a safe and good practice.

Methods: We reviewed the case notes of 1145 patients who underwent major thoracic surgery and concurrent placement of thoracic epidural catheters for postoperative analgesia from the last two years.

1100 patients had thoracotomy mostly for lung cancer resection and 45 were lung transplant recipients (the majority clamshell incisions for bilateral sequential implantation). Potential major complications were categorised in three groups: epidural haematoma, infection or neurological deficit (transient or permanent). Data were extracted using our documentation programmes in conjunction with the internal electronic reporting of incidents system (Datix®).

Results: Of the total patients included in this review there were no major complications as described above. One of the lung transplant patients developed a subcutaneous infection which was treated with antibiotics. Nineteen cases of minor related complications including accidental epidural like dislodgement/disconnection, skin burn from hot packs, skin blistering, as well as cases of inappropriate strong opioid co-administration (N=6) were investigated and treated.

Conclusions: Thoracic epidural remains the gold standard for postoperative pain management for lung resection and lung transplantation. Data extracted from a large series of at risk patients demonstrate the safety and efficiency of this technique.

ESRA1-0391
Chronic Pain Management

CHRONIC PAIN TREATMENT WITH PREGABALIN IN END STAGE RESPIRATORY FAILURE PATIENTS AWAITING LUNG TRANSPLANT FROM VENO-VENOUS ECMO SUPPORT

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Background and aims: Patients requiring veno-venous ECMO as a bridge to lung transplant have prolonged ITU stay which may last months. Reduced mobility is unavoidable to ensure adequate flow in ECMO lines and reduce the risk of dislodgement. Neuropathic pain and polyneuropathy are common in this unique group of patients. Many complain of severe anxiety and depression with disrupted sleep patterns. Pregabalin is licensed for chronic neuropathic pain and generalized anxiety disorder (GAD).

Methods: Nine patients on v-v ECMO awaiting lung transplant aged 17 to 54 years old. Median ITU stay was 45±27 days (one 2+ 8 weeks). All awake in ITU, 5 had tracheostomies and required ventilatory support. Patients received morphine PCA and one required a continuous morphine infusion. Pregabalin 50 mg BD was initiated in all patients and the dose escalated to 75 to 100 mg BD as needed. Patients were asked to evaluate their pain daily using VAS scale from 0–10 and asked how many hours of undisturbed sleep had. A simple four scale anxiety evaluating inventory was used. The presence of side effects (dizziness, drowsiness, blurred vision) was recorded.

Results: All patients (100%) reported significant analgesic effect after the start of the treatment. Mean VAS scores were reduced from 6±2 to 3±1. Duration of good quality sleep increased from 5±1.7/24 hours before pregabalin to 8±2/24 hours. All of the patients except two reported reduced anxiety of at least 2±1 scale improvement.

Conclusions: Pregabalin is an effective analgesic with accompanying anxiolytic activity in these patients with increased analgesic requirements and exacerbated psychological and emotional stress.

ESRA1-0392
Miscellaneous

ENHANCED RECOVERY PROTOCOL AFTER ARTHROPLASTY REDUCES BLOOD TRANSFUSION RATES

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Background and aims: Our hospital performs over 2000 primary hip and knee arthroplasties a year. Since 2010 an enhanced recovery programme(ER) has been adopted to increase early mobilisation rates and reduce length of stay. Our aim was to measure the impact of this programme on blood transfusion rates.

Methods: ER programme is a standardised approach to anaesthesia and surgery using neuraxial blocks, avoidance of intravenous opiates and use of local infiltration analgesia. We used 150ml 0.2%Ropivacaine with 1:100,000 adrenaline for periarticular injection. IV Tranexamic acid 1gm and hypotensive anaesthesia maintaining mean BP between 50-60mmHg were used to reduce blood loss.

Data from patients undergoing arthroplasties after introduction of ER programme (2010–2013) was compared to the three years before (2007–2010). The criteria for transfusion remained the same for both groups.

Results:

TABLE 1.

THR	Before ER	After ER
Total no of patients	2730	3244
Total no of units transfused	814	592
Transfusion rate	29.8%	18.2%
TKR	**Before ER**	**After ER**
Total no of patients	3228	3489
Total no of units transfused	266	215
Transfusion rate	8.2%	6.1%

Conclusions: The results have shown that adoption of an enhanced recovery programme reduced transfusion requirements by 39% in THR and 26% in TKR. It is likely that the reduction in transfusion requirements was due to reduced perioperative blood loss. Both hypotensive anaesthesia and tranexamic acid has been shown to independently reduce perioperative blood loss. Local vasoconstrictive effect of the adrenaline may also have played an important part.

ESRA1-0393
Central Nerve Blocks

THE EFFECTS OF PATIENTS' RESTING POSITION ON POSTDURAL PUNCTURE HEADACHE AFTER SADDLE BLOCK FOR PERIANAL SURGERY

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Background and aims: The postdural puncture headache (PDPH) is still a disturbing problem for patients undergoing saddle block anesthesia for perianal surgery. Although some possible mechanisms are suggested, the exact pathophysiology of PDPH is unclear. This study aims to suggest a way to prevent PDPH.

Methods: After ethics committe approval and patients' informed consents, a prospective, randomized study was conducted on 200 ASA I-II (aged 18–82 years) patients scheduled for elective perianal day surgery. Quinke tip spinal needles (25 G) and bupivacaine heavy 5 mg were used to perform saddle block by at least two years residents and specialist through the lumbar 3-4-5 at the sitting position of the patients. All patients were informed about PDPH and asked to do resting, hydration with and without caffeinated fluids and 3–4 g paracetamol, postoperatively. Randomization was done

according to the resting position on bed: patients at slightly trendelenburg or head down and/or legs up at home (Group P: Position) and patients with supine only with a pillow for head optional (Group C: Control) for 2–3 days.
Results: Two in 120 pts (1.6%) in group P and 7 in 80 pts (8.7%) in group C encountered with PDPH ($p<0.05$). One patient required epidural blood patch of 15 mL in Group P, others responded to supportive treatment.
Conclusions: Postoperative resting position after spinal anesthesia may help to decrease the incidence of PDPH. It might be related to cerebrospinal fluid kinetics. Further studies with larger series of patients are necessary to evaluate these.

ESRA1-0395
Peripheral Nerve Blocks

FASCIA ILIACA BLOCK AND ITS EFFICIENCY IN PAIN MANAGEMENT OF PROXIMAL FEMORAL FRACTURES/ SURGERIES - SYSTEMATIC REVIEW

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Background and aims: Pain management plays key role in patient with proximal femoral fracture. Fascia iliaca block is considered to be effective tool with impact on later pain killers' usage. This systematic review was collected to determine the efficiency of the fascia iliaca block in providing analgesia to patients with proximal femoral fractures (or post surgeries).
Methods: Systematic review of papers published in last 20 years. EMBASE and PubMed were searched. 95 articles identified from which 22 included in the study for relevance with the topic. A standardised appraisal of the methodological quality of the studies was performed.
Results: More than half of the patients benefit from performing fascia iliaca block in terms of later usage of opioids. Decrease in opioids use had a very positive effect on patients' outcome and minimalized the side effects.
Conclusions: Fascia iliaca block could play a very important role in first-line pain control and can be very effective later as it decreases usage of opioids. Lower opioids use should help us to avoid the side effects of opioids what is big advantage in elderly people.

ESRA1-0397
Chronic Pain Management

PIRIFORMIS MUSCLE INJECTION ULTRASOUND-GUIDED

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Background and aims: Piriformis syndrome is a common cause of buttock and posterior leg pain. Recently has been described the US guided technique for piriformis muscle injections. We study the efficacy and efficiency of the above technique.
Methods: We studied 14 patients 4 male and 10 female aged from 50 to 65 years old with a diagnosis of piriformis syndrome. The patients received 3ml of 0.5 ropivacaine combined with 3mg betamethasone sodium phosphate using an ultrasound technique to identify the piriformis muscle. We studied numeric pain score and hip function immediately, 2 weeks and 3 months post procedure.
Results: The pain score was 5.87±2.11 before the procedure. 2.33±1.51 immediately after, 2.88±1.64 two weeks later and 3.01±2.34 three months later.

There was improvement 80-90% in hip function in all patients immediately after the procedure which lasted to 3 months. There were no adverse events due to the injection. Two patients had minor leg weakness for 8 hours.
Conclusions: US –guided technique for piriformis muscle injection is a safe and efficient technique according to our study.

ESRA1-0399
Peripheral Nerve Blocks

DURATION OF ULTRASOUND-GUIDED SUPRACLAVICULAR NERVE BLOCK IN DIABETIC PATIENTS

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Background and aims: There is increasing incidence of diabetes mellitus (DM) patients requiring anesthesia for upper arm surgery and peripheral blocks are preferable in their perioperative management. However, there is only one clinical study of Gebhard et al. conducted among DM patients for supraclavicular nerve block (SCB). Our study is an effort to understand if there exist differences in DM and non-DM patients in dose requirements.
Methods: After obtaining IRB approval, medical records of all patients who had undergone SCB for surgical anesthesia at University Hospital Merkur between May 2009 and March 2013 were reviewed. Demographic data, co-morbidities and block performance data: type and volume of local anesthetic (LA) were collected.
Results: A total of 120 SCB procedures were performed: 76.6% (n=92) for bone osteosynthesis and 23.3% (n=28) for soft tissue surgery. Significant differences were noted in ASA status (DM had higher ASA score, $P<0,001$) and in coronary artery disease (CAD) prevalence ($P=0,036$). Multivariate linear regression model analysed duration of SCB using two significantly relevant predictor variables: use of Lidocain + Chirocaine mixture (beta=−0,276, $P=0,005$) and DM (beta=0,243, $P=0,017$). DM patients had longer block duration, as well as those who received "pure" Chirocaine.
Conclusions: Our study emphasizes that DM patients have longer block duration implicating that their nerve fiber as more susceptible to LA. Relationship between the dose, volume, and concentration of LA remains unclear. Our suggestion is to use ultrasound to avoid nerve damage and to use smaller volume of LA, preferably those with shorter duration.

ESRA1-0400
Pediatric

ULTRASOUND-GUIDED LATERAL INFRACLAVICULAR BRACHIAL PLEXUS BLOCK IN CHILDREN. A PRELIMINARY REPORT

Ponichter M.[1] [1]*Anaesthesia and Intensive Care, Karolinska Institut, Stockholm, Sweden.*
Background and aims: Lateral infraclavicular brachial plexus block (LIC-block) is an accepted but less popular technique in paediatric anaesthesia (PRAN 2012).

This is a preliminary report of our experience with LIC-block in children. The aim of the study was to assess the feasibility of the LIC-block: its quality, time-efficiency, technical problems, and complications.
Methods: A case series of thirteen ASA 1-2 children, 1-8 years old, undergoing elective hand surgery in GA. The lateral coracoid parasagittal in-plane technique was used. After the visualisation of pectoral muscles, subclavian artery and vein, the pleura was also identified to avoid its injury. With the needle tip just posterior to the artery, 0,5 ml/kg of 0,25% levobupivacaine without additives was injected to encircle the artery. The evaluated parameters were block quality (response to surgery and tourniquet inflation, opioid use, postoperative pain), anaesthesia-related complications, time to perform the block, and time to extubation after surgery.
Results: The block success rate was 100% in all patients, with no need for opioid supplementation. Median duration of the block was 14 hours (range 10-19). The PONV incidence was 0%. There was one case of vascular puncture, otherwise no complications occurred. The median time to perform the block was 5 minutes (range 4-9), median time to extubation after surgery was 12 minutes (range 7-14).
Conclusions: In paediatric patients, the LIC- block seems to be a highly reliable, safe, and time-efficient technique. It provides a smooth anaestesia, has a

low potential for complications and decreases the incidence of postoperative pain, nausea and vomiting.

ESRA1-0404
Peripheral Nerve Blocks

ULTRASOUND-GUIDED PERIBULBAR BLOCK: EFFICACY OF A RETRO-OCULAR COMPLETE SPREAD

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Background and aims: Peribulbar block (PB) is the most common type of anaesthesia for cataract surgery (1).

The aim of this study was to evaluate by ultrasound imaging the intraconal spread of local anesthetic (LA) on the retro-ocular compartment during PB (2) and compare different types of spread.

Methods: 52 patients scheduled for cataract surgery were included in our prospective and observational study. After standard monitoring, the lower temporal puncture was performed. Once the needle was in place, a linear ultrasound transducer was placed over the eyelid and the mixture of LA was administered. After block an external compression with the Honan balloon was done.

Demographic characteristics, spread and volume of the LA were recorded. Akinesia, analgesia and complications were also noted.

Results: The mean age was 75,27 y (SD 8,03) and BMI was 28,63 (SD 5,28).

The full spread of LA through the back of the eyeball was observed in 32 patients (Image 1). Incomplete diffusion was observed in 17 patients and in 3 no diffusion was visualized. Of these, 5 patients required reinjection.

The mean volume administered was lower (6,42 mL/7,92 mL; $p<0,01$) and the quality of motor blockade was higher (complete blockade: 93,8% /65,0%; $p<0,05$) in patients with complete diffusion.

There were no complications.

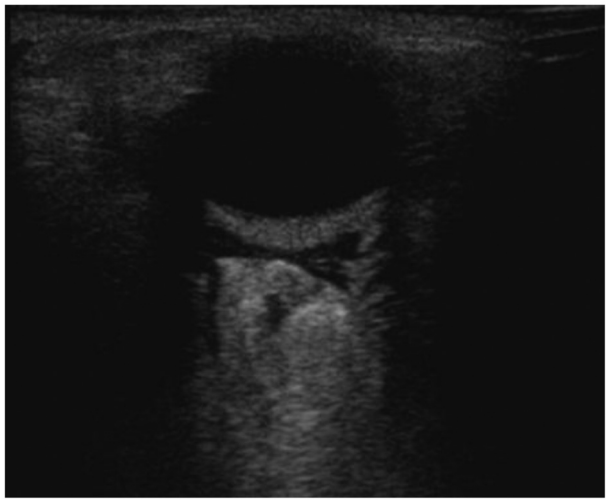

FIGURE 1.

Conclusions: The use of ultrasound in the PB provides information on the spread of LA in the retro-orbital compartment, predicts the efficacy of the blockade and decreases the dose.

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ESRA1-0427
Obstetric

LABOR ANALGESIA: ANALYZING OUTCOMES. A RANDOMIZED CONTROLLED TRIAL

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Background and aims: The use of programmed intermittent epidural bolus (PIEB) may lead to better outcomes when compared with continuous epidural infusion (CEI). In this study we compared the duration of labor, type of delivery and APGAR score at 1st and 5th minutes.

Methods: 306 women with viable pregnancies were included in this study. After an initial bolus dose of Ropivacaine 0,15% with Sufentanil 0,5µg/ml, parturients were randomized in two groups: CEI (10ml/h) Ropivacaine 0,1% plus Sufentanil 0,2µg/ml and PIEB (10ml/h) Ropivacaine 0,1% plus Sufentanil 0,2µg/ml. Rescue bolus of 5ml were allowed in both groups with the infusion pump. We used the Pearson Chi Square to analyze the type of delivery and the independent samples T Test for APGAR and duration of labor.

Results: 310 women were studied. Regarding type of delivery, 306 were included, being 169 CEI and 137 PIEB and no statistical differences were found (p=0,534). The mean of APGAR 1 and APGAR 5 was 8,84 and 9,86 for CEI and 8,9 and 9,9 for PIEB, with no statistical differences (p=0,536 and p=0,600). Confidence intervals were [−0.234,0.122] for APGAR 1 and [−0.189,0.109] for APGAR 5. For duration of labor, 302 were included, being 166 CEI and 136 PIEB, with an average duration of 410,19 and 429,77 minutes, respectively. No statistical differences were found (p=0,561).Confidence interval was [−85.841,46.670].

Conclusions: Differences between CEI and PIEB for maintenance of epidural analgesia were not found, regarding the duration of labor, type of delivery and APGAR score at 1st and 5th minutes.

ESRA1-0428
Chronic Pain Management

PERCUTANEOUS MICRO-COMPRESSION OF THE GASSERIAN GANGLION FOR TRIGEMINAL NEURALGIA

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Background and aims: Adequate management of trigeminal neuralgia (TN) continues being a challenge for doctors. Percutaneous micro-compression of the trigeminal ganglion (PMTG), using a variant of the technique of Mullan and Lichtor, is a minimally invasive procedure for the treatment of TN.

The aim of this work is to evaluate the effectiveness of PMTG in a group of TN sufferers in our center.

Methods: 32 patients received PMTG as a 2ndline treatment during one year in our hospital. The average age of our population was 55years-old. The duration of the symptoms ranged from 5 to 20 years (median 10years). PMTG took place under general anaesthesia, compression was maintained during 1-2minutes and surgery time usually was less than 30minutes. Pain symptoms, concomitant medication and side effects were documented shortly after and 12months behind the procedure.

Results: 32patients (100%) initially showed great pain decrease 24hours, 7days and 4weeks after PMTG. It was also found a decrease in oral carbamazepine for every patient (100%). Recurrence of the symptoms appeared in 3patients (9´3%) one year after PMTG.

25patients (78´1%) presented no side effects. Postoperative complications were transient and minor as paresthesias, mild ear-ache or local hematoma. However, intraoperative difficulties were more noteworthy: intraparenchymal hemorrhage (in 1patient with surgery difficulties) or changes in blood pressure and cardiac rhythm, including severe bradycardia (4patients) and cardiac arrest which was solved when the balloon was deflate (1patient) happened during surgery.

Conclusions: We showed that percutaneous micro-compression of the trigeminal ganglion is a safe and effective neurosurgical procedure that could provide long time symptomatic relief for trigeminal neuralgia.

ESRA1-0436
Miscellaneous

REDUCING RECOVERY TIME FOR DAY CASE ORTHOPAEDIC SURGERY

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Background and aims: Pain, emergence and side effects of anaesthesia are amongst the prime drivers of time spent in recovery post-operatively, however, regional anaesthesia may attenuate these. We examined time in recovery for patients having day case orthopaedic procedures to see if receiving regional anaesthesia has a tangible effect.
Methods: Orthopaedic theatre lists over six months were prospectively reviewed and day cases identified. Those under 18 years old; poor english comprehension or psychiatric issues were excluded. Consent was gained from patients on admission. Anaesthetic technique and time spent in recovery were recorded.
Results: 714 patients were eligible with 633 followed up, recruitment rate 88.6%. Average age was 45 years (range 18–87). 244 (38.5%) received regional anaesthesia with or without general anaesthesia whilst 389 (61.5%) received general anaesthesia and subcutaneous/periarticular local anaesthetic infiltration.

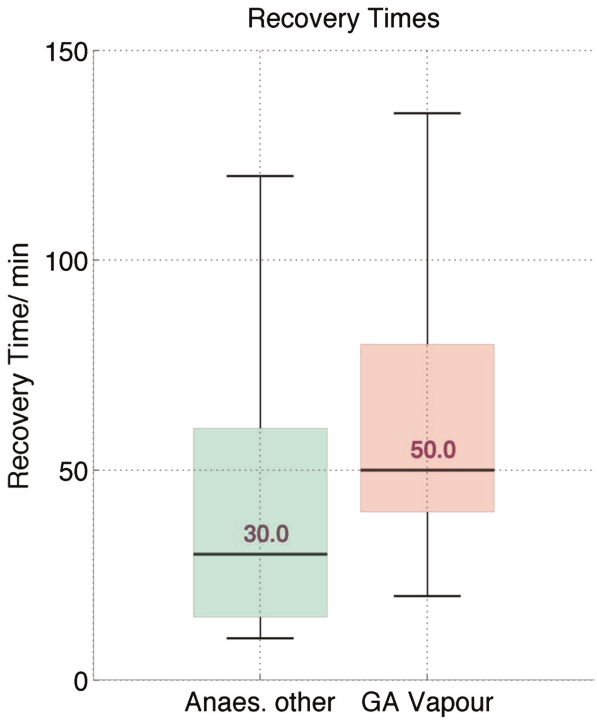

FIGURE 1.

Median time in recovery reduced from 50 minutes in those not receiving regional anaesthesia to 30 minutes in those who did. Only 25% who received regional anaesthesia stayed over 50 minutes whereas 75% of the general anaesthesia group did.
Conclusions: Regional anaesthesia reduced time spent in the recovery unit. We believe this is through improved analgesia and reduction in anaesthetic/analgesic side effects.

ESRA1-0443
Obstetric

UMBILICAL ARTERY AND VEIN ACID-BASE STATUS IN DIFFERENT TYPES OF ANAESTHESIA AT VAGINAL DELIVERY AND CAESAREAN SECTION

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Background and aims: To study fetal acid–base status and its implications under different modes of anaesthesia for vaginal delivery and caesarean sections
Methods: We performed an observational cohort study of all women delivery during 2013 in our Hopital. In total 3034 consecutive women vaginal delivery (n=2359) or undergoing elective or emergency cesarean section (n=675).

The women were divided into 4 groups according to the type of anesthesia administered; no anesthesia (NA n= 850), epidural anesthesia (EA n=1773), spinal anesthesia (SA n=437) and general anesthesia (GA n=19) . Fetal acid–base status was assessed from umbilical cord blood (both artery and vein) . Apgar scores at 5min and at 10min, admissions to neonatal intensive care units (NICUs) were noted.
Results: Apgar scores 5min were higher in no anaesthesia, spinal anaesthesia and epidural anaesthesia group ($p<0.001$). There was no difference in Apgar scores at 10min. General anaesthesia was associated with a higher incidence of fetal acidaemia, both in the umbilical artery and vein ($p<0,001$). No anaesthesia and spinal anaesthesia was associated with the highest pH in umbilical artery blood ($p<0.001$). There was no difference in admissions to NICU.
Conclusions: This study provided evidence of the advantages of spinal anaesthesia over epidural and general anaesthesia in caesarean section.

ESRA1-0449
Case Reports

BACTERIAL MENINGITIS AFTER SPINAL ANESTHESIA

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Background and aims: Post spinal anesthesia bacterial meningitis is a rare but serious complication of neuraxial anesthesia. Its rarity makes incidence, relative risk and efficacy of preventive measures hard to establish using high quality evidence.

Source of infection is not always clear but may be related to contamination of the needle or punction site by oral cavity commensals; migration of skin bacteria through needle or catheter insertion sites; or hematogenous spread from concurrent bacteriemia.

Pathogens more frequently isolated in cerebrospinal fluid cultures are *Streptococcus* species, most of them belonging to viridans group (specially *Streptococcus salivarius*), commonly found in our upper air passages.
Methods: Case report and review of the literature. We report a case of meningitis following haemorrhoidectomy performed under spinal anesthesia.
Results: Most cases are caused by contamination of the puncture site by aerosolized mouth commensals from medical personnel. The condition is usually

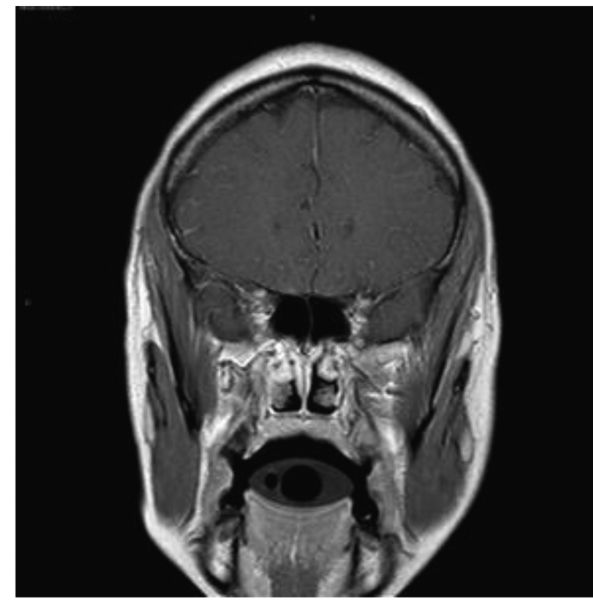

FIGURE 1.

benign when treated promptly. There are few prospective trials and most case reports do not provide complete information about infection control practices.
Conclusions: Infectious complications associated with neuraxial anesthesia are exceedingly rare events but may significantly increase morbidity, mortality as well as medical costs. An early diagnosis and effective treatment is essential. Prevention is important in order to decrease the incidence of this event. Several guidelines have emphasized the importance of strict aseptic technique while performing regional anesthesia.

ESRA1-0453
Obstetric

CHANGES IN OBSTETRIC ANAESTHESIA PRACTICE: A NATIONAL QUESTIONNAIRE SURVEY FROM LITHUANIA

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Background and aims: Organization of obstetric care in Lithuania has undergone substantial changes in recent years. Obstetric units having less than 300 deliveries per year were closed aiming at better experience of staff and utilization of resources. Our goal was to evaluate changes in obstetric anaesthesia practice in a view of changing organization.
Methods: Standard questionnaires on obstetric anaesthesia were mailed to all dept. of anaesthesia of hospitals providing obstetric care in January, 2014. Results were compared with those of similar postal survey performed in 2004.
Results: In 2013 there were 32 hospitals providing obstetric care in Lithuania (49 – in 2003). Responses were received from 20 dept. of anaesthesia, responding hospitals had cared for 79,7% of deliveries in the country (32 and 69,9% in 2003). Epidural analgesia (EA) for labour was available all facilities and was provided in 16,9% (min.-max.0-35,6%) of cases in 2013. In 2003 EA was available in 67,7% of units, but it was provided only in 8,8% (min.-max.0-39,8%) of cases. Mean annual Sectio caesarea (SC) rate was 26% (min.-max.17,4-28,6%) in 2013 and 16,9% (min.-max.5-27,5%) in 2003. In 2013 regional anaesthesia was used in 95,8% of scheduled and 93,3% of emergency SCs. In 2003 regional anaesthesia was used in 38% of scheduled and 9% of emergency SCs. General anaesthesia with tracheal intubation and controlled ventilation was the only option of general anaesthesia for SC in responding hospitals both in 2013 and 2003.
Conclusions: Obstetric anaesthesia practice in Lithuania has undergone dramatic change with substantial shift from general to regional anesthesia in recent decade.

ESRA1-0454
Central Nerve Blocks

INFLUENCE OF DEXAMETHASONE ADMINISTRATION IN SPINAL ANESTHESIA FOR FEMUR FRACTURE

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Background and aims: The aim of this research is to establish the influence of intrathecal dexamethasone administration in spinal anesthesia with levobupivacaine on postoperative pain,consciousness and values of cortisol levels for patients with femur fracture.
Methods: The study is planned as a prospective,interventional, randomized clinical trial.A total of 60 patients ASA2 and ASA3 status, scheduled for surgical procedures will be sorted into two groups and undergo surgery in spinal anesthesia with 12,5mg of levobupivacaine (SA) and with or without 8mg of dexamethasone (DSA).The primary outcome measure is the occurrence of postoperative disturbance of consciousness and plasma cortisol levels. As a secondary outcome measure, we are following pain intensity, blood glucose levels and recovery. Cortisol and glucose are analyzed in five measurements. Peripheral venous blood samples are collected before anesthesia, one hour after surgery, third, fifth and on the tenth day after surgery. Postoperative delirium is defined by using Confusion Assessment Method (CAM) criteria. Visual analogue scale (VAS) is used to record pain severity among patients.
Results: We collected data for 16 patients so far. As expected, cortisol plasma levels (preoperative mean values 715 nmol/L and postoperative 210 nmol/L) were significantly lower in all patients having spinal anesthesia with levobupivacaine and dexamethasone in comparison to patients in spinal anesthesia with only local anesthetic(preoperative mean values 807 nmol/L and postoperative 713 nmol/L).According to CAM criteria postoperative cognitive disturbances were seen in 5 patients after spinal anesthesia with only local anesthetic.
Conclusions: The addition of dexamethasone to the local anesthetic significantly prolongs the duration of sensory block and decreases opioid requirements and postoperative cognitive disturbances.

ESRA1-0460
Chronic Pain Management

ULTRASOUND-GUIDED INFRAORBITAL NERVE BLOCK FOR ISOLATED INFRAORBITAL NEURALGIA

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Background and aims: Trigeminal neuralgia treatment should be individualized according to symptoms and signs of each patient. Here we present a patient with isolated infraorbital neuralgia successfully managed with ultrasound-guided infraorbital nerve block.
Methods: A 48 years-old male patient diagnosed with trigeminal neuralgia and treated with carbamazepine was consulted for intractable and resistant pain. His pain was throbbing and stabbing and isolated to the area of right nasal wing, nasal part of the tip of the nose and right canine and first premolar teeth. The pain was triggered with eating and then expanded to the right lower eye lid. The patient had severe allodynia even with the water. The patient was otherwise healthy and had no trauma history. Initially, diagnostic ultrasound-guided infraorbital nerve block with %1 lidocaine was performed. During this block, 13-MHz ultrasound probe was placed at the inferior orbital rim and transverse sono-scan was performed until a hypoecoic break was observed. The foramen was checked for vascular structures. Needle was introduced with in-plane approach and the spread of local anaesthetic was observed.
Results: Since the patient had pain relief, we repeated the block with 15mg lidocaine and 1.5mg dexametasone (total 1.5mL) one week later. After 3 weeks of painless state, the pain returned only at the teeth while eating and allodynia was mild. The treatment was repeated for the second time and the patient was painless for 7 weeks until this report was written.
Conclusions: We suggest that ultrasound-guided infraorbital nerve block with lidocaine and dexamethasone may be an option for treatment of isolated infraorbital neuralgia.

ESRA1-0470
Central Nerve Blocks

EXPERIENCE AFTER THE ACCIDENTAL DURAL PUNCTURE: SURVEY OF ANAESTHETIC TRAINEES IN THE UK

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Background and aims: Post dural puncture headache (PDPH) is an important morbidity in surgical patients. The risk of PDPH after the neuraxial procedure is commonly quoted as 1%. Accidental dural puncture (ADP) causes certain degree of anxiety in anaesthesiologists. This survey aimed to investigate the experience of anaesthetic trainees in the UK after their first ADP.
Methods: We contacted the administrators from 28 schools of anaesthesia with a web link to our electronic survey, open for one month. 19 of them forwarded our electronic survey to their trainees. We focused on three main

areas: circumstances surrounding the ADP, the support after the ADP and the trainee's experience after the ADP.
Results: 165 out of 175 respondents had at least one ADP during their training, with the highest incidence (36%) occurring at ST3 level (1st year registrar), on the night shift (41%). 82% of the trainees discussed their ADP experience with a colleague. However, only 77% approached the obstetric anaesthesiologists. After 21% of ADP, a supervised epidural insertion was arranged, with 32 out of 36 trainees finding this useful. At the next unsupervised epidural insertion, only 22 (of the 165) trainees felt confident.
Conclusions: This survey revealed that only a minority of trainees had a supervised epidural insertion after the ADP, but where this was done, it was a positive experience. As a recognised complication of epidural insertion, trainee's moral and performance may be improved by more informal and formal training post ADP.

ESRA1-0472
Miscellaneous

INTRAOPERATIVE HYPOTENSION – THE INFLUENCE OF DIFFERENT TYPES OF ANESTHESIA IN URGENT ORTHOPEDIC SURGERY

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Background and aims: Hypotension following anesthesia induction is well documented, and one of the biggest challenges for the anesthesiologist is to choose the anesthetic technique which ensures better intraoperative hemodynamic stability.

The aim of this study is to measure the prevalence of intraoperative hypotension following induction of general anesthesia (GA) or spinal anesthesia (SA), in patients submitted to urgent correction of proximal-third femoral fracture.
Methods: Prospective, observational, clinical study, in Gaia/Espinho EPE Hospital Center, from 1st July 2012 to 30th June 2013.

The study included all patients who were admitted to the Emergency Department with proximal femoral fracture and were submitted to corrective surgery under GA or SA (intrathecal single shot). Intraoperative registration of hemodynamic parameters was obtained from PICIS® program. Hypotension was defined as ≥20% decrease from pre-induction mean arterial pressure.

Statistical analysis was performed with PASW®, using the chi-square test and the Student's t test for independent samples (significance level of 0.05).
Results: Of the 223 patients included in the study, 22,4% (N=50) were submitted to GA, and the remaining 173 to SA. Of the 50 patients submitted to GA, 66% had an episode of hypotension vs. 46,2% of patients undergoing surgery under SA.

Using the chi-square test we concluded (95% confidence interval), that exists a causal relationship between intraoperative hypotension and the type of anesthesia (p=0,014), i.e. there is more risk of hypotension in patients under GA.
Conclusions: Patients with proximal-third femoral fracture, submitted to corrective surgery, have more risk of hypotension when anesthetized with GA than those undergoing SA (intrathecal single shot).

ESRA1-0484
Case Reports

COMBINED PECTORAL AND CUTANEOUS BRANCHES OF INTERCOSTALS NERVES BLOCKS IN A HIGH RISK PATIENT FOR MASTECTOMY

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Background and aims: Ultrasound guided 'pecs' block and cutaneous branches of intercostals nerve blocks were recently introduced techniques that may be useful in breast surgery, and that may provide an alternative to paravertebral blocks.
Methods: We present the case of a patient 80 years old, 50 kg of weight, ASA IV diagnosed with breast cancer infiltrantre and scheduled for a mastectomy. She includes as medical history severe aortic stenosis with repeated episodes of congestive heart failure.

After monitoring of the patient, we place the ultrasound probe below the outer third of the clavicle, transverse to the axis of the body, identifying pectoralis major and minor muscles, the thoraco- acromial artery, before introducing the needle in- plane from medial to lateral and 15 ml ropivacaine 0,5% was administered between the muscles next to the artery.

Then, the ultrasound probe was placed in the ipsilateral axillary midline lesion at the level of the sixth intercostal space in longitudinal position. A Tuhoy needle is inserted in plane with respect to a flow transducer head and injected ropivacaine 0.5% 15 ml, between the external intercostal muscles and the serratus anterior muscle, advancing the needle into the intercostal spaces above and confirming the correct diffusion of the anesthetic at these levels.
Results: Ten minutes after the surgery that lasted 80 minutes without incident and without sedation of the patient.
Conclusions: Combined pectoral and cutaneous branches of intercostals nerves blocks have been effective and safe anesthetic technique in breast surgery, resulting in decreased systemic peri-operative analgesic requirements, and improved patient satisfaction.

ESRA1-0488
Postoperative Pain Management

LONG TERM EVALUATION OF THE EFFECT OF MULTIMODAL ANALGESIA ON NEUROPATHIC PAIN AFTER BREAST THERAPY FOR CANCER

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Background and aims: Our objective was to evaluate the effect of multimodal analgesia (MA) on neuropathic pain, Nitric oxide (NO) and interleukin-1 beta (IL1-b) following surgery for breast cancer.
Methods: After taking ethical committee approval and patients' consent, this randomized study was conducted on 50 women scheduled for conservative breast surgery under the effect of general anaesthesia. Women enrolled into two groups; to receive perioperative ultrasound guided thoracic paravertebral block (US/TPVB) (group I) or MA in form of perioperative US/TPVB and oral pregabaline daily for 6 months, (group II).

Neuropathic pain was assessed by pain questionnaire for a month and NP scale at 1, 3, 6 and 9 months postoperatively. NO and IL-1b were measured before operation, 1, 3, 6 & 9 months, postoperatively.
Results: Neuropathic pain started few days postoperatively, in both groups. Its onset, sites, duration and precipitating factors were similar in the studied groups. Multimodal analgesia showed significant influence on sensitivity, hot pain and unpleasantness at 1 month postoperatively. It reduced itchy, dull and sharp pain at 3 months postoperatively. It lowered most items of NP except sharp and deep pain at 6 months after operation. At 9 months, hot and superficial pain was still less in patient receiving MA. NO decreased significantly 1 and 3 months postoperatively, while IL-1b was significantly lower through different times, in group II. IL-1b correlated well with NP intensity and unpleasantness.
Conclusions: Breast surgery for cancer was associated with NP that continued for 9 months postoperatively. Multimodal analgesia influenced NP positively.

ESRA1-0514
Postoperative Pain Management

EFFECT OF TAPERING OF REMIFENTANIL INFUSION ON THE POSTOPERATIVE REMIFENTANIL INDUCED HYPERALGESIA

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Background and aims: This study was designed to investigate whether stepwise tapering of remifentanil at the end of surgery could decrease postoperative pain scores after remifentanil-desflurane anesthesia.

Methods: This prospective, randomized and single-blind study evaluated postoperative pain scores and requirements of rescue analgesics after remifentanil-desflurane anesthesia in patients with thyroidectomy. Sixty two patients undergoing thyroidectomy under general anesthesia were randomly allocated into two groups. All patients were anesthetised with desflurane and high-dose remifentanil. Remifentnail was infused at the rate of 0.3 μg/kg/min until the end of surgery in patients of the control group (group A) whereas remifentanil was tapered gradually from 0.3 to 0.1 μg/kg/min until the end of surgery for at least 30 minutes in patients with group B. Pain scores (0-100 numerical rating scale, NRS), rescue analgesic requirements and adverse events were assessed at 30 min, 2 h, 6 h, 12 h, and 24 h after operation.
Results: There was a significant decrease in pain scores at 30 min (20 [0-80] *vs.* 50 [0-100], P = 0.002) and 2 h (30 [10-60] *vs.* 40 [20-80], P = 0.018) after surgery in group B compared with group A. In addition, rescue analgesics are less required in group B than in group A postoperatively (2 [1-3] *vs.* 3 [2-3], P = 0.039). There were no significant differences in adverse events between the two groups.
Conclusions: Tapering of remifentanil at the end of surgery decreased postoperative pain scores immediately after thyroidectomy with desflurane and high-dose remifentanil anesthesia.

ESRA1-0515
Miscellaneous

MAXIMIZING EFFICIENCY: REGIONAL ANESTHESIA BLOCKROOM THROUGHPUT SIMULATION

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Background and aims: Our Acute Pain Medicine Service (APM) is fortunate to have a designated Block Room (BR). This study is aimed at analyzing the process of admitting a patient to the BR and streamlining care to improve efficiency.
Methods: We received IRB approval for a retrospective review of pre-existing BR case logs, which contain the surgery scheduled, block performed, and specific times including patient arrival in the BR, block start, block end, etc. This time sensitive data allowed us to build a preliminary computerized model of patient throughput through the BR.
Results: By averaging the effect of different time and personnel variables in terms of efficiency measures (Figure 1), our virtual model of daily BR activities runs independently as a Markov Chain simulation. Controlling starting variables allows us to predict whether scheduled blocks will be performed on time.

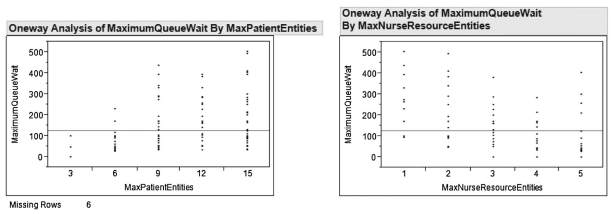

FIGURE 1.

Conclusions: Once complete, we hope to use this model in reverse simulation to better predict patient's estimated arrival times, stagger case starts, and anticipate staffing based on the number and complexity of scheduled cases. We hope to minimize surgical delays and patient anxiety, and create a streamlined infrastructure of BR operations to enable other institutions to implement more robust APM services.

ESRA1-0519
Miscellaneous

THE CHANGE OF PULSE TRANSIT TIME IN LOWER EXTREMITY AFTER LUMBAR SYMPATHETIC GAGLION BLOCK: AN EARLY INDICATOR OF SUCCESSFUL BLOCK

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Background and aims: A lumbar sympathetic gaglion block (LSGB) is a procedure that is used for treatment of sympathetic mediated pain of lower extremities. This sympathetic block leads to vascular relaxation. Pulse transit time (PTT) is the length of time for which the pulse wave travels between two arterial points and it can be used as an index to reflect the increase in blood flow. This study aimed to investigate the change of PTT after LSGB and therefore to evaluate the usefulness of PTT as an indicator for successful LSGB.
Methods: Data were used from 16 patients who were performed LSGB due to the sympathetically mediated neuropathic pain. PTT was measured at baseline, 5, 10, and 20 minutes after the injection of drug. LSGB was confirmed to be successful if there is increase of temperature of ipsilateral foot was more than 2 degrees Celcius. at 20 minutes after the injection of drug (dT20 ≥2 degrees Celsius).
Results: The LSGBs were successful in 9 cases (56%) and unsuccessful in 7 cases (44%). The ratio of change of PTT at 5 minutes after drug injection to baseline (dPTT5/PTT0) showed positive correlation with the change of temperature at 20 minutes after drug injection (correlation coefficient 0.783, p-value = 0.01). In comparison between success and failure group, dPTT5/PTT0 of success group was 68.6±23.8% and that of failure group was 32.9±1.0%, and they are significantly different (p-value < 0.01).
Conclusions: The measurement of PTT at 5 minutes after drug injection can be used as an early indicator for successful LSGB.

ESRA1-0525
Chronic Pain Management

EVALUATION OF CHRONIC POSTMASTECTOMY PAIN IN PATIENTS RECEIVING ULTRASOUND GUIDED THORACIC PARAVERTEBRAL BLOCK WITH ORAL MEXILETINE OR CLONIDINE

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Background and aims: Was to evaluate the effect of thoracic paravertebral block (TPVB) alone or with either oral mexiletine or clonidine on patient satisfaction with medical care and postoperative pain, chronic post mastectomy pain (CPMP), and plasma level of nitrite/nitrate (NO_X) and IL-6.
Methods: After approval of the Ethical Committee, and obtaining a written consent from every patient involved in the study, a 48 women scheduled for modified radical mastectomy under general anaesthesia with ultrasound guided TPVB enrolled into three groups; group I received only TPVB, group (II) received pre and postoperative 200 mg oral mexiletine for one month and group (III) received pre and postoperative 0.2 mg oral clonidine for one month. CPMP was evaluated using brief pain inventory short form 1&3months postoperatively. NO_X and IL-6 were measured before operation, 1&3months, postoperatively. Their relationship with CPMP was assessed.
Results: Acute nociceptive pain was less in mexiletine and clonidine groups compared to control group. TPVB with oral mexiletine reduced the intensity of CPMP as well as the pain interference with daily activities. NOx did not correlate with development of CPMP however IL-6 showed a high correlation.
Conclusions: Breast surgery for cancer was associated with high incidence of neuropathic pain. TPVB with either oral mexiletine or clonidine significantly reduced acute nociceptive pain. TPVB with mexiletine reduced the intensity of CPMP as well as the pain interference with daily activity.

ESRA1-0527
Abstracts Withdrawn

THE EFFECT OF SHOULDER ROTATION ON THEDIMENSION OF THE ACOUSTIC TARGET WINDOW FOR PARAMEDIANTHORACIC EPIDURAL ACCESS IN THE LATERAL DECUBITUS POSITION

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Background and aims: Shoulder rotation has been reported to increase the posterior longitudinal ligament (PLL)as a measure of the acoustic target window for paramedian thoracic epidural access in sitting subjects. There are limited data on theeffect of shoulder rotation for paramedian thoracic epidural accessin the lateral decubitus position. The aim of this study was to define whethershoulder rotation increases the length of the PLL in the lateral decubitus position.
Methods: Ten adult male volunteers were positioned in the right lateral decubitus and flexionposition on a horizontal operating table. Ultrasonography was performed usingthe rightlongitudinal paramedian plane to obtain optimal ultrasound view for the PLL. The length ofthe rightPLL was measured at the T7/8 and T9/10 interspaces before and after a 30°rightward shoulder rotation.
Results: The mean ± SD of age (yrs), height (cm) and weight (kg) were 31.7 ± 3.3, 174.6 ± 3.3 and 74.3 ± 8.2respectively. The mean ± SD of the PLL increased significantly from 8.0 ± 1.7 mm to 9.3 ± 1.9 mm ($P < 0.01$) at the 7/8 interspace and from 9.6 ± 1.5 mm to 10.5 ± 1.5 mm ($P < 0.05$) at the 9/10 interspace, respectively before and after shoulder rotation.
Conclusions: Shoulder rotation significantly increases the dimension of the acoustic target window for paramedian thoracic epidural access in the lateral decubitus position.

ESRA1-0531
Chronic Pain Management

RETROSPECTIVE ANALYSIS ON THE CLINICAL SIGNIFICANCE OF LIGAMENTUM FLAVUM IN LUMBAR SPINAL STENOSIS PATIENTS

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Background and aims: The MRI is frequently used to diagnose the lumbar spinal stenosis but the findings of MRI are not always compatible with the symptom of stenosis. We hypothesized that the ligamentum flavum area measured on MRI might be related to the symptom of the lumbar spinal stenosis.
Methods: We retrospectively reviewed patients who visited our pain clinic from 2009 to 2011. The inclusion criteria were; 1) Clinical symptom should be compatible with spinal stenosis, 2) MRI image within 6 months, 3) The medical record including visual analog scale (VAS) and Oswestry Disability Index (ODI) was present. The patients were excluded if the patient has history of lumbar spinal surgery, history of spinal intervention or injection within 6 months, and any other disease which could give an effect on the pain severity.

Data including VAS, ODI, the walking component of ODI (ODIW) and subjective walking distance were collected. The area of spinal canal (SCA), durac sac (DSA) and ligamentum flavum (LFA) at the most stenotic intervertebral level on MRI were also measured.
Results: 67 patients were enrolled. By correlation analysis, no clinical variables had the correlation with VAS. ODIW showed the correlation with SCA and DSA. The subjective walking distance showed the correlation with DSA. LFA showed the correlation only with ODI.
Conclusions: LFA did not show the correlation with VAS and walking distance. Only ODI score showed the stastically significant correlation with LFA. We interpreted that the thickening of ligamentum flavum might be related to the chronicity which might aggravate the quality of life.

ESRA1-0533
Central Nerve Blocks

ULTRASOUND GUIDED CERVICAL PLEXUS BLOCK FOR CAROTID ENDARTERECTOMY: DESCRIPTION OF A NOVEL TECHNIQUE AND OUR EXPERIENCE

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Background and aims: Regional block of the cervical plexus for carotid endarterectomy can be achieved with reasonable success rate with the landmark technique with or without the use of nerve locator. However, we realised that the adequacy and precision of the block with lower volume of drug may be achieved if the plexus is blocked under ultrasound guidance. Moreover ultrasound can help in precise and safe deposition of local anaesthetic drug into the carotid sheath to block the nerves essential for carotid surgery.
Methods: We used this technique in 25 patients between July 2010 and February 2014. A 5–10 MHz ultrasound probe was used to block the superficial cervical plexus and carotid sheath with Bupivacaine. Additional local anaesthetic (Lignocaine 2%) was administered by the surgeon in 1 ml aliquot to supplement the block whenever the patient reported discomfort.
Results: A mean of 85.6 mg of Bupivacaine was used.

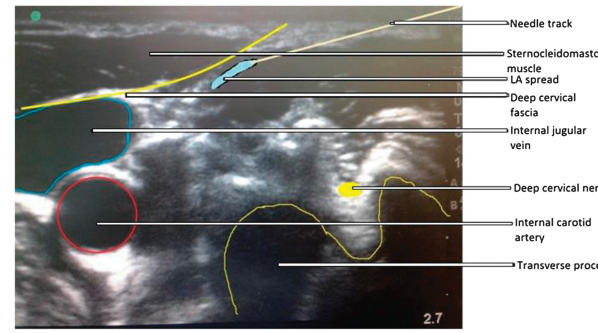

FIGURE 1.

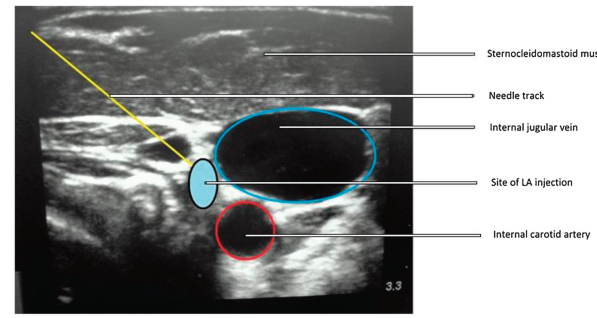

FIGURE 2.

23 patients had grade III muscle relaxation of the operative site. Two patients were converted to general anaesthesia because of block failure.
Conclusions: In our opinion, use of USG for cervical plexus block in carotid endarterectomy is a viable and safe option and reduces the incidence of block failure, and othe related complications.

ESRA1-0539
Central Nerve Blocks

THE EFFECT OF SHOULDER ROTATION ON THE DIMENSION OF THE ACOUSTIC TARGET WINDOW FOR PARAMEDIAN THORACIC EPIDURAL ACCESS IN THE LATERAL DECUBITUS POSITION

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Background and aims: Shoulder rotation has been reported to increase the posterior longitudinal ligament (PLL) as a measure of the acoustic target window for paramedian thoracic epidural access in sitting subjects. There are limited data on the effect of shoulder rotation for paramedian thoracic epidural access in the lateral decubitus position. The aim of this study was to define whether shoulder rotation increases the length of the PLL in the lateral decubitus position.
Methods: Ten adult male volunteers were positioned in the right lateral decubitus and flexion position on a horizontal operating table. Ultrasonography was performed using the right longitudinal paramedian plane to obtain optimal

ultrasound view for the PLL. The length of the right PLL was measured at the T7/8 and T9/10 interspaces before and after a 30° rightward shoulder rotation.
Results: The mean ± SD of age (yrs), height (cm) and weight (kg) were 31.7 ± 3.3, 174.6 ± 3.3 and 74.3 ± 8.2 respectively. The mean ± SD of the PLL increased significantly from 8.0 ± 1.7 mm to 9.3 ± 1.9 mm ($P < 0.01$) at the 7/8 interspace and from 9.6 ± 1.5 mm to 10.5 ± 1.5 mm ($P < 0.05$) at the 9/10 interspace, respectively before and after shoulder rotation.
Conclusions: Shoulder rotation significantly increases the dimension of the acoustic target window for paramedian thoracic epidural access in the lateral decubitus position.

ESRA1-0550
Peripheral Nerve Blocks

CLOSE, BUT NO CIGAR! WHY ARE ULTRASOUND-GUIDED UPPER EXTREMITY NERVE BLOCKS NOT COMPLETELY EFFECTIVE?

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Background and aims: Large cohort studies and systematic reviews of upper extremity nerve blocks consistently disclose failure rates higher than 7% [1]. No single intervention, including the use of expert practitioners, confirmation by electrostimulation, massive local anaesthetic volumes or multiple-injection techniques seem to reduce this critical value. The aim of this presentation is to challenge our understanding of this topic.
Methods: Selective literature review on nerve block success rates.
Results: Several potential causes of nerve block failure may be identified [Table 1]. While most of these causes have been investigated at length, we are only now beginning to understand the extent that anatomical variations contribute to block failure [2]. In addition, our paradigm that each nerve has designated areas of innervation may be challenged; in a study on LA-induced autonomic skin responses, block of the median and ulnar nerves caused vasodilatation in the area innervated by the radial nerve, while block of the radial nerve did not [3]. Also, axillary nerve block with additional single peripheral nerve blocks do not reach 100% success rates [4]. Finally, chronic pain and multiple causes of pain induces changes in the peripheral and central sensory systems which may affect nerve block success [5].

Potential causes of nerve block failure	Been there, done that
Inexperienced practitioners	Yes
Inability to identify the correct nerves	Yes
Needle-to-nerve proximity not achieved	Yes
Dissipation of LA away from nerves	Yes
Insufficient LA volume used	Yes
Insufficient latency time until effect	Yes
Unidentified obstacles in neurovascular sheath or adventitia	Yes
Anatomical variations in nerve course and innervation areas	No
Pathology causing pain is not located in an exact location	No
Pain impulses do no travel via a unique and consistent neural root	No
LA does not totally abolish sensory function	No
Pathological changes in central or peripheral sensory perception	No

FIGURE 1.

Conclusions: Our paradigm of consistent relationships between local anaesthetics, peripheral nerve innervation and pain perception may be challenged and may help explain why we are unable to reach 100% success rates in ultrasound-guided nerve block analgesia. However, many potential causes of failure still need scientific investigation.

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ESRA1-0551
Peripheral Nerve Blocks

RECLAIMING THE SUPRACLAVICULAR NERVE BLOCK FOR UPPER EXTREMITY SURGERY. A RANDOMIZED, DOUBLE-BLIND STUDY COMPARING ULTRASOUND-GUIDED SUPRACLAVICULAR, INFRACLAVICULAR AND AXILLARY NERVE BLOCKS

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Background and aims: Brachial plexus blocks for elbow, forearm or hand surgery are commonly used and well documented. However, failure rates, needle passes and procedure times vary considerably between studies: supraclavicular 0-37%, 1-3 passes, 1-10 mins; infraclavicular 0-23%; 1-3 passes, 2-13 mins; axillary 0-40%, 1-6 passes, 3-12 mins. We wanted to asses pros and cons for each block type in a clinical setting.
Methods: After IRB approval, 120 patients participated in a randomized, double-blind comparison of ultrasound-guided supraclavicular [n=40], infraclavicular [n=40] and axillary [n=40] blocks for upper extremity surgery. Linear transducer, short-axis, in-plane, multiple-injection technique with 20 ml of ropivacaine 0.75% was used for all blocks. Block characteristics, procedural pain, readiness for surgery and clinical failure (adjuvant block or general anaesthesia necessary 40 minutes after block placement) were investigated.
Results: Main results are presented in Table 1. While the infraclavicular block had less needle passes and injections, performance time and procedural pain was similar between all groups. The supraclavicular block had most easily recognizable structures, had shortest onset time and few clinical failures. The axillary block was clearly inferior on all these counts. No complications were observed.

	Supraclavicular block	Infraclavicular block	Axillary block	Significant [p<0.05] differences
Performance time [mins]	3:29	3:11	3:33	None
Ultrasonic visibility [0-2]	1.34	1.05	0.47	SC > IC > AX
Needle passes	6.3	4.7	6.5	IC < AX or SC
Injections	9.6	6.3	8.7	IC < AX or SC
Procedural pain [0-2]	0.45	0.60	0.55	None
Ready for surgery [mins]	23.3	30.9	28.9	SC < AX or IC
Clinical failures	5%	10%	25%	SC < AX

FIGURE 1.

Conclusions: The supraclavicular and infraclavicular blocks seem to be most clinically proficient for elbow, forearm or hand surgery. Patient demeanor and ad hoc ultrasonic visibility may help decide on specific block choices.

ESRA1-0557
Chronic Pain Management

SUCCESSFUL TREATMENT OF NEUROPATHIC PAIN IN THE LOWER LEG WITH DRG STIMULATION FOLLOWING FAILED SCS

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Background and aims: Spinal Cord Stimulation (SCS) is a recognised and well-studied treatment for management of pain associated with Chronic Regional Pain Syndrome (CRPS). Dorsal Root Ganglion (DRG) stimulation is a new approach to placing the electrodes where a low frequency current is passed through the leads placed within the intertransvere foramen surrounding the dorsal root ganglion. We describe a case of successful management of CRPS pain with DRG stimulation after failure with standard SCS.
Methods: A 49-year-old Caucasian labourer sustained an occupational soft tissue injury to the right ankle more than three years ago. Following failed trial of multiple conservative treatments including nerve blocks, physiotherapy, hydrotherapy and anti-neuropathic medications; he received a trial of percutaneous SCS with satisfactory results. This was followed by surgical placement of paddle leads, which failed to maintain the same quality of stimulation. Revision of these leads to a different spinal level also failed to deliver pain relief. This is despite use of multiple independent current control.

Following referral to our unit, the interdisciplinary care team advised on DRG stimulation trial. This avoided the need to remove existing surgical paddle leads given the potential for morbidity. Leads were placed from within the epidural space in the L4 and L5 intertransvere foramen.
Results: The patient underwent an uneventful two-stage insertion of DRG stimulator device with full coverage of the area resulting in satisfactory pain relief and improved function.
Conclusions: DRG stimulation can still be successful after failed conventional SCS and is a useful salvage technique after failed standard SCS.

ESRA1-0558
Obstetric

ASSESSMENT OF THE CORRECT USE OF GLASS FILTER NEEDLES WHEN PREPARING INTRATHECAL DRUGS IN ANAESTHESIA: A PILOT-STUDY

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Background and aims: Observation revealed that filter needles used to prepare local anaesthetic agents for intrathecal injection are often used incorrectly. Drugs drawn up and expelled through the same filter needle, e.g. to mix local anaesthetic with opiate, result in glass fragments mixed with preparation. We designed a pilot-study to assess this.
Methods: This study was laboratory-based. Samples were prepared as if for intrathecal injection. Two specimen groups were created: one prepared correctly (i.e. unidirectional), one 'incorrectly'. Using hyperbaric bupivacaine 0.5%, microscopy revealed the solution to crystallise if not examined straightaway, with inconclusive results. We believed the glucose in bupivacaine would crystallise, resembling glass fragments. We used sterile water in glass ampoules in stead.

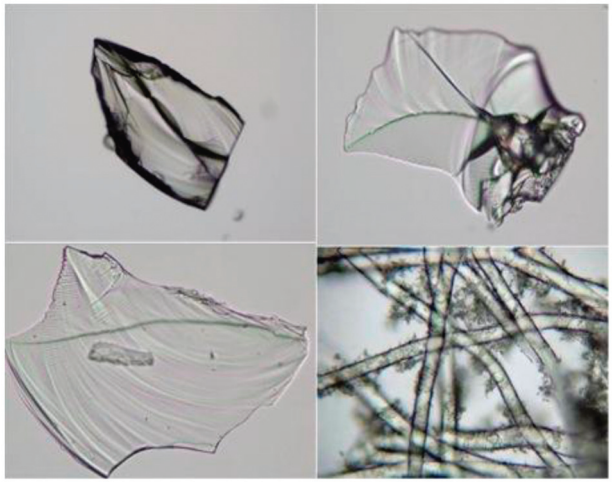

FIGURE 1.

Results: A number of specimens in the 'incorrect' group showed glass fragments (figure below). Fibres seen on some slides may have represented sheared-off pieces of filter mesh; we were unable to verify this due to difficulties in obtaining mesh fibres. These fragments may have been contaminants, but it leaves additional concerns about incorrect technique.
Conclusions: Chemical meningitis can follow foreign body injection after spinal anaesthesia[1,2]. Injecting glass intrathecally represents substandard practice[3]. Correct training using filter needles minimises this hazard. Our findings suggest incorrect use of filter needles causes glass fragments to be expelled intrathecally, rather than trapped on mesh. A double-blind, randomised controlled study to assess this is planned.

ESRA1-0566
Obstetric

PERIOPERATIVE USE AND SAFETY OF COLLOIDS IN PATIENTS UNDERGOING HYSTERECTOMIES

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Background and aims: In the perioperative period colloids are used to obtain circulatory stabilization. Distinction is made between natural (Albumin) and artificial colloids (e.g., Hydroxyethyl Starch, HES). Recently, HES has come under scrutiny after several trials suggested it to be associated with increased risk of mortality and acute renal injury in critically ill patients. While both major trials and large-scale observational data are lacking, the debate continues regarding the safety of perioperative HES use. Using a large national database we aimed to study the use and safety of HES vs Albumin in elective surgery.
Methods: After IRB approval, data on patients undergoing hysterectomies were accessed from the Premier Perspective database (Premier Inc., 2006-2012). Use of HES and Albumin was determined for the day of surgery and the day after surgery creating four groups: HES use only (HES), Albumin use only (ALB), HES/Albumin both used (COMB), no HES or Albumin used (NONE). Primary outcomes of interest were acute renal failure, need for blood transfusion, 30-day mortality, costs of hospitalization (COH), and length of stay (LOS). These were assessed in the four intervention groups, overall, and by patient subgroups based on intensive care unit admission, advanced age (75+ years), and cardiovascular compromise.
Results: Our analysis included 520,476 patients from 515 hospitals. HES was used in 2.9%, Albumin in 0.9% and both were used in 0.2% of the cases, respectively. Mean age for the HES group was 50.9 (SD 13.2) vs 56.4 (SD15.1) for ALB, 59.0 (SD 15.0) for COMB, and 47.2 (SD 11.6) years for the NONE group. A similar pattern was found for the primary outcomes: acute renal failure 1.8% vs 4.9%, 9.7% and 0.3%; blood transfusion 12.0% vs 25.6%, 29.1% and 2.6%; 30-day mortality 0.4% vs 1.0%, 2.5% and 0.05% (all $P<0.001$). COH and LOHS were $13,417 vs $26,249, $33,837 and $7,579; 4.1 days versus 8.1 days, 10.8 days and 2.0 days, respectively. Patterns did not change when analyzing the patient subgroups.
Conclusions: While there have been safety concerns on HES use in critically ill patients, in this ongoing analysis we were able to show that patients receiving various types of colloids differed significantly in characteristics and more importantly in complication rates. Ongoing regression analysis is targeted to determine the independent impact of HES and Albumin on perioperative outcomes in this elective surgical population.

ESRA1-0574
Peripheral Nerve Blocks

EVALUATION OF ANALGESIC EFFECT OF PECTORAL BLOCK IN PATIENTS UNDERGOING BREAST CANCER SURGERY

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Background and aims: In this study, web aimed to investigate the effect of pectoral block (PEC I) on pain control and postoperative morphine consumption in patients who underwent unilateral breast cancer surgery.
Methods: After obtaining ethical committee permission and informed patient consent a total of 50 ASA I-III patients, aged 18-65 years, undergoing

unilateral breast cancer surgery under general anesthesia were included into the study. All patients were randomized by using scaled envelope technique into two groups, no regional block was administered in control group (n=25), pectoral block was performed in pectoral group (n=25). In pectoral group, block was performed in the preoperative block area after standard monitoring and iv sedation with midazolam. Pectoral block was performed under ultrasound guidance as described by Blanco (1). Twenty ml of bupivacaine 0.5 % was administered between pectoralis minor muscle and pectoralis major muscles. Standard general anesthesia was induced (thiopental 4-6 mg, fentanyl 2 μ/kg, rocuronium 0.6mg/kg) and maintained using desflurane in NO_2:O_2 with a ratio of 2:1 was administered to all patients The depth of anaesthesia was monitorized with bispectral index (BIS) technique. The desflurane was adjusted to maintain a BIS level between 40-60. At the end of surgery all patients received tenoxicam 20 mg and ondansetron 4 mg i.v. Patient controlled analgesia (PCA) was applied by using morphine in both groups for postoperative analgesia. Postoperative pain was assessed by the VAS for pain. VAS values, total analgesic consumption, additional analgesic requirement and incidence of nausea and vomiting were recorded at 1., 6., 12. and 24. h postoperatively. Paracetamol was administered for rescue analgesia in case of VAS≥3.

Results: Postoperative morphine consumption at 1., 6., 12. and 24. h were significantly lower in the pectoral group ($p<0.05$). Postoperative opioid consumption at 24 hours was significantly lower in the pectoral group (9±5 vs 17±10 mg) compared to control group ($p<0.05$). Desflurane consumption at 45, 60 and 75th minutes were lower in the pectoral group ($p<0.05$).

Conclusions: In conclusion we found that pectoral block was effective in reducing analgesic requirements and desflurane consumption in patients undergoing breast surgery.

ESRA1-0582
Central Nerve Blocks

EARLY DATA IN INFLUENCE OF DEXAMETHASONE ADMINISTRATION IN SPINAL ANESTHESIA FOR FEMUR FRACTURE

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Background and aims: The aim of this research is to establish the influence of intrathecal dexamethasone administration in spinal anesthesia with levobupivacaine on postoperative pain, consciousness and values of cortisol levels for patients with femur fracture.

Methods: The study is planned as a prospective, interventional, randomized clinical trial. A total of 60 patients ASA2 and ASA3 status, scheduled for surgical procedures will be sorted into two groups and undergo surgery in spinal anesthesia with 12,5mg of levobupivacaine (SA) group and with addition 8mg of dexamethasone (DSA) group. The primary outcome measure is the occurrence of postoperative disturbance of consciousness and plasma cortisol levels. As a secondary outcome measure, we are following pain intensity, blood glucose levels and recovery. Cortisol and glucose are analyzed in five measurements. Peripheral venous blood samples are collected before anesthesia, one hour after surgery, third, fifth and on the tenth day after surgery. Postoperative delirium is defined by using Confusion Assessment Method (CAM) criteria. Visual analogue scale (VAS) is used to record pain severity among patients.

Results: We collected data for 16 patients so far. Postoperative cortisol plasma levels in 8 patients in DSA group were significantly lower 210(184-262) nmol/L in comparison to 8 patients in SA group with postoperative cortisol plasma levels 713(354-794) nmol/L. The duration of analgesia in DSA group was 428±72.57minutes and in SA group 212±34.76 minutes. According to CAM criteria postoperative cognitive disturbances were seen in 5(31%) patients in SA group.

Conclusions: The addition of dexamethasone to the local anesthetic significantly prolongs the duration of sensory block and decreases opioid requirements and postoperative cognitive disturbances.

ESRA1-0585
Case Reports

CARDIOPULMONARY ARREST AFTER BRACHIAL PLEXUS BLOCK FOR SHOULDER SURGERY – SECOND TRY AT REGIONAL ANESTHESIA AND PERIOPERATIVE MANAGEMENT

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Background and aims: Interscalene brachial plexus block (ISBPB) is the preferred anesthetic option for shoulder surgery in the sitting position, at our institution, due to its advantages when compared with general anesthesia. However, the combination of the sitting position, regional anesthesia, awake patient and surgical procedure, may result in vasovagal reactions, that can evolve to syncope and cardiopulmonary arrest (CPA).

The authors describe a case report, describing the perioperative management and special precautions in a patient the second time round for a similar procedure following a recent cardiopulmonary arrest.

Methods: Male, 56 years, ASA physical score II, for a shoulder prosthesis. Anesthaetic history: CPA of undetermined cause during shoulder arthroscopy after neurostimulator assisted ISBPB. Cardiac evaluation showed no increased risk of CPA in perioperative setting. Combined anesthesia with ISBPB (75 mg Mepivacaine 1.5% and 50 mg Ropivacaine 0.5%) using ecographic assistance and general anesthesia was administered. An external pacemaker was in place in demand mode before any procedure was made. Also, the procedure went through in dorsal decubitus position.

Results: No perioperative complication occurred.

Conclusions: In this case, the anesthetic technique and the assistance of ecography (due to its several advantages when compared with neurostimulator), the position of the patient during the procedure, and the external pacemaker placement were the main precautions, to ensure a safe procedure, during all the perioperative period.

ESRA1-0586
Postoperative Pain Management

LEVOBUPIVACAINE INFUSION VIA WOUND CATHETER VERSUS BILATERAL TRANSVERSUS ABDOMINIS PLANE (TAP) CATHETERS FOR PAIN RELIEF AFTER CESAREAN SECTION: A PROSPECTIVE RANDOMIZED ASSESSOR-BLIND TRIAL

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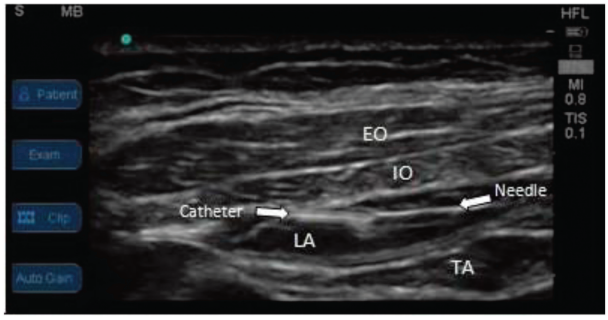
Background and aims: Local anesthetic (LA) infusion via wound or TAP catheters has been used for pain relief after cesarean section (CS). However, evidence is lacking regarding the superiority of one catheter infusion to the other. The aim of this study is to compare between bilateral TAP catheters & wound catheter infusion regarding the analgesic efficacy after CS.

Methods: Fifty ASA I-II patients, scheduled for elective CS, were randomly assigned to receive LA infusion either through wound catheter (group W) or bilateral TAP catheters (group T). All patients received spinal anesthesia using 10mg of heavy bupivacaine & 15microgram fentanyl. In group W, the catheter was inserted by surgeon below fascia with initial bolus of 20ml Levobupivacaine 0.25%, followed by continuous infusion of levobupivacaine 0.125% at a rate of 10ml/h. While in group T, the two catheters were inserted under ultrasound guidance in the posterior TAP after wound closure with initial bolus of 10ml Levobupivacaine 0.25%, followed by continuous infusion of Levobupivacaine 0.125% at a rate of 5ml/h via each catheter. A standard postoperative regimen of paracetamol 1g every 6h & intravenous fentanyl PCA was followed. The primary outcome was the 24h fentanyl consumption. Other outcomes included pain score, maternal satisfaction, performance time & side effects.

Results: No significant difference was detected between both groups regarding the 24h fentanyl consumption (1104ug ± 455 in group T vs. 1186ug ± 387 in group W, P=0.56), or pain scores. No signs of LA toxicity or local complications were observed. Maternal satisfaction was high in both groups. Performance time was significantly longer in group T (14min ±3.4 vs. 2.2min ± 1, $p< 0.0001$).



EO: External Oblique IO: Internal Oblique TA: Transversus Abdominis

FIGURE 1.

Conclusions: LA infusion via bilateral TAP catheters or wound catheter provided safe, effective & comparable analgesia after CS with high maternal satisfaction; however, TAP catheters required longer time to be inserted.

ESRA1-0589
Miscellaneous

REGIONAL ANAESTHESIA. WHERE DO WE COME FROM AND WHERE ARE WE GOING?

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Background and aims: Since the discovery of the local anaesthetic effect of the cocaine, regional anaesthesia has evolved rapidly and sustainedly, diversifying techniques and improving in healthcare quality and patient's safety. The objective of the present work is to reflect the chronological evolution of this anaesthetic modality.

Methods: A search was carried out in the main medical databases (Pubmed, Tripdatabase, Embase, SCI) with the mesh terms: anaesthesia, regional, epidural, flow, local, spinal, nerve block. The most significant milestones were noted down in the order of their first publication in one of these databases.

Results: Subcutaneous infiltration of cocaine dates back to 1880 and at nearly the same time, the first case of peribulbar block and the first medullary cocainization, forerunner of the subsequent spinal anesthetics.

In 1901 appears the first reference to caudal anaesthesia and in 1921 the first reference to epidural anaesthesia.

The first nerve stimulator is reported in 1912 and the neurostimulation needles we know today, in 1921.

The first ultrasound-guided nerve block is published in 1978.

The latest publications of 2014 emphasize the importance of "triple monitoring" by adding to the neurostimulation and the ultrasound, the measurement of pressure as the needle moves forward.

Conclusions: Regional anaesthesia has three centuries of history. Originally, it was considered an assistant of general anaesthesia, but today it is increasingly being used as a unique anaesthetic technique that evolves to improve patient's safety.

Up-to-date knowledge on regional anaesthesia is essential for the anaesthesiologist's daily work.

ESRA1-0593
Case Reports

ULTRASOUND GUIDED THORACAL EPIDURAL TO AN OPIOID DEPENDENT PATIENT FOR BARIATRIC SURGERY

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Background and aims: Bariatric surgery is a challenge for anesthesiologist. Morbid obese patients with co-morbidities presents for laparascopic surgery need to be planned well. We share our anesthesia experience of once opioid-dependent patient for sleeve gastrectomy.

Methods: A 42 year old male patient with morbid-obesity(BMI:47,7kg/cm2) had undergone sleeve gastrectomy. He had a history of opioid-addiction and naloxane pellet is placed 3-months ago for treatment. He has had also obstructive-sleep-apnea-syndrome. Opioid free anesthesia was planned. After premedication with midazolam patient has taken in sitting position. A curved ultrasound probe has used for examining the neuroaxial structures and midline. Eight thoracal level is labeled and epidural space is found at 11cm at 3rd attempt. The catheter left 4cm inside the epidural space and sutured to the skin. After taking to head-up position and preoxigenization of patient general anesthesia was initiated with propofol and rocuronium. He has intubated with videolarengescope. Desflurane and remifentanyl has used for maintenence and bupivacaine for epidural anesthesia. Laparascopic sleeve gastrectomy has performed in reverse-trandelenburg position. The operation time was 137 minutes. Recovery was uneventful. Patient controlled analgesia device was used for postoperative pain treatment.

Results: Thoracal epidural is a very useful tool for postoperative pain control for laparascopic sleeve gastrectomy.

Conclusions: Regional anesthesia should be a part of pain control especially for opioid dependent patients. Difficulties of finding anatomical landmarks in morbid obese patients can be overcome with the use of ultrasound.

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Pediatric

ULTRASOUND-GUIDED TRANSVERSUS ABDOMINAL PLANE (TAP) BLOCK VERSUS CAUDAL BLOCK FOR POSTOPERATIVE ANALGESIA IN CHILDREN UNDERGOING UNILATERAL OPEN INGUINAL HERNIOTOMY: A COMPARATIVE STUDY

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Background and aims: Ultrasound guided TAP block is an effective technique in providing analgesia for abdominal surgery. This study was design to demonstrate the efficacy of US guided TAP block and to compare it to caudal block in unilateral pediatric hernia repair.

Methods: 40 ASA I–II aged between 1–6 years scheduled for elective unilateral open herniotomy. All patients received general anesthesia (GA) by induction with sevoflurane, after laryngeal mask insertion, anesthesia was maintained with sevoflurane in 60% NO2. Patients were then randomized to (group 1)US-guided TAP block (n = 20) using 0.5 ml/kg 0.25% bupivacaine is injected on the side of operation and (group II) to receive caudal block using 1ml/kg 0.2% bupivacaine (n = 20). surgery was allowed to start 15 mins after giving the block. Standard monitoring was applied. If HR &/ or MAP increased by 15% relative to the baseline, fentanyl 1ug/kg was administered. The total amount of fentanyl was recorded. Failure of caudal or TAP blocks was defined as increase in HR or MAP more than 20% of pre-incision value. After surgery, patients remained for 4 h in the recovery room. The sites of injection of the TAP block or caudal area were inspected to detect complications such as hematomas. Postoperative analgesia was evaluated by the children and infants postoperative pain scale (CHIPS).An anesthesiologist, who was not part of the study team, evaluated the need for rescue analgesia in the intraoperative and postoperative period and recovery nurse collected the data. If the CHIPS score was $>$ 11, rescue analgesia of 30 mg. kg acetaminophen was administered.

Results: No difference was found in HR and MAP to the base line in both groups. Also the amount of intraoperative fentanyl was not different in both groups. CHIPPS was less in caudal group however, the difference was not statistically significant.

Conclusions: US-guided TAP block is as effective as caudal block in providing immediate postoperative analgesia in inguinal hernia repair.