Lichtenstein procedure under local anaesthesia

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Inguinal Hernia Surgery

• Laparoscopy (TEPP – TAP)

• Lichtenstein

• STOPPA
Inguinal Hernia Surgery

• Laparoscopy (TEPP – TAP) (GA +/- TAP)

• Lichtenstein
  (GA +/- TAP, SA, hypnosedation + LA, LA)

• STOPPA (GA +/- TAP, SA)
Spinal or Local Anesthesia in Lichtenstein Hernia Repair

A Randomized Controlled Trial

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Background: With established protocols lacking, the choice of anesthetic technique remains arbitrary in inguinal hernia repair. Well-designed studies in this subject are important because of the gap or discrepancy between available scientific evidence and clinical practice.

Methods: Between August 2004 and June 2006, a multicenter prospective clinical trial was performed in which 100 patients with unilateral primary inguinal hernia were randomized to spinal or local anesthesia. Clinical examination took place within 2 weeks postoperatively and at 3 months in the outpatient clinic.

Results: Analysis of postoperative visual analogue scale scores showed that patients operated under local anesthesia had significant less pain shortly after surgery ($P = 0.021$). Significantly more urinary retention ($P < 0.001$) and more overnight admissions ($P = 0.004$) occurred after spinal anesthesia. Total operating time is significantly shorter in the local anesthesia group ($P < 0.001$). No significant differences were found between the 2 groups with respect to the activities of daily life and quality of life.

Conclusions: Our study provides evidence that local anesthesia is superior to spinal anesthesia in inguinal hernia repair. Local anesthesia in primary, inguinal hernia repairs should be the method of choice.
Totally extraperitoneal repair under general anesthesia versus Lichtenstein repair under local anesthesia for unilateral inguinal hernia: a prospective randomized controlled trial

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Conclusions  Lichtenstein repair under local anesthesia is as good as TEP under general anesthesia. The shorter operating room time, smaller mesh size, and lower cost of local anesthetic drugs all contribute to make Lichtenstein repair the better choice for repair of uncomplicated unilateral inguinal hernia, especially in developing nations with scarce resources.
Long Term Outcome after Lichtenstein Hernia Repair Using General, Locoregional or Local Anaesthesia

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Abstract. Background: Chronic pain or discomfort after hernia surgery is nowadays a more challenging concern than recurrence. This study aimed to evaluate the long-term impact of local anaesthetic repair (LA) on pain, discomfort, paraesthesia and functional outcome after Lichtenstein hernia repair as compared to locoregional (LRA) and general anaesthesia (GA).

Methods: Patients with primary or recurrent inguinal hernia underwent Lichtenstein repair with a polypropylene mesh. All patients with a follow-up of at least three years were sent a detailed questionnaire and offered an outpatient visit. Kaplan-Meier estimates and Cox proportional hazard regressions were used to analyse the relationship between time to event variables and explanatory variables including anaesthesia type.

Results: Between 1994 and 2006, in two cohorts, 330 patients answered the questionnaire: 100 under GA, 35 under LRA, and 195 under LA. This represented a response rate of 95, 94, and 98% respectively. Compared to GA and LRA, LA resulted in less long term pain, discomfort and paraesthesia. Moreover, resumption of social and professional activities was faster after LA. Recurrence rates were 1, 0, and 0.5% respectively.

Conclusions: After Lichtenstein inguinal hernia repair, LA results in beneficial effects beyond the immediate postoperative period.
Ten-year audit of Lichtenstein hernioplasty under local anaesthesia performed by surgical residents

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Abstract

Background: To analyse in a prospective trial the long-term results of Lichtenstein hernioplasty performed by surgical trainees.

Methods: Training of tension-free Lichtenstein hernia operation was started in our ambulatory unit as an outpatient procedure under local anaesthesia in 1996. After performing 36 teaching operations together with residents and their supervising specialist, 281 patients were operated during 1996-2000 either by one senior consultant (n = 141) or by 12 surgical trainees (n = 140). After 10 years, 247 (88%) patients were available for the long-term assessment.

Results: After one month postoperatively, the rate of wound infections (consultant 1.1%, residents 0.7%) and hematomas (consultant 1.1%, residents 3.0%) were low and not related to surgeon’s training level (ns). Only 6 (2.1%) clinically evident recurrences were found after 10 years: two after specialist repair and four after trainee repair (ns). Although one third of the patients reported some discomfort after 3 and 10 years, 93-95% of the patients were very satisfied with the operation, with no statistical difference between the surgeons.

Conclusion: Ambulatory open mesh repair under local anaesthesia was a safe operation and the long-term results were acceptable among the patients operated by surgical trainees.
Lichtenstein /LA

- Hypnosedation
- 2 OR, 1 anaesthesist
Lichtenstein /LA

- Good experience in local anesthesia
- Good experience in Lichtenstein
- Good knowledge of the nerve anatomy
- Good patient (BMI, age)
- Good hernia (unilateral, small, reductible)
Inguinal nerves

Figure 111.1. Nerves of the inguinal region to be respected: 1, iliohypogastric nerve; 2, ilioinguinal nerve; 3, genital branch of the genitofemoral nerve.
How to do it?

• Take your time
• EMLA + paracetamol + alprazolam (?)
• Slow injection
• Room temperature
• pH

• No IV line
• No antibiotics
E. L. Ball · P. Sanjay · A. Woodward

Comparison of buffered and unbuffered local anaesthesia for inguinal hernia repair: a prospective study

Abstract Bicarbonate buffered local anaesthetic solutions are known to reduce the pain of infiltration. However, its efficacy in reducing the pain of infiltration in patients undergoing inguinal hernia repair has never been tested. This study aims to test the efficacy of bicarbonate buffered solution in reducing the pain of infiltration and pain for the total surgical procedure in a series of patients undergoing elective inguinal hernia repair. Forty consecutive male patients with unilateral, reducible inguinal hernias were studied prospectively. All patients underwent surgery under local anaesthesia, the first 20 with unbuffered solution and the next 20 using buffered solution. Pain scores were obtained for the infiltration in the anaesthetic room and for the total surgical procedure. In addition, satisfaction scores were obtained at the end of the procedure. The mean pain score for the initial infiltration of unbuffered anaesthetic was 3.00 (range 0–5), and for the buffered anaesthetic it was 1.45 (range 0–4), \( P = 0.02 \). The mean pain score for the entire procedure for the unbuffered group was 3.05 (range 0–6), and for the buffered group it was 1.45 (range 0–5), \( P = 0.02 \). The patient satisfaction rate was higher with the buffered solution compared to unbuffered solution (\( P < 0.05 \)). There were no complications reported with either solution. Buffered local anaesthetic solution significantly reduces the perceived pain of inguinal hernia repair, both during the infiltration and during the procedure itself. It is safe to administer and it results in a high rate of patient satisfaction.
Take your time, you will save it!

- 10 minutes
  - Take a coffee
  - Take a phone call
- Then go scrubbing
Lichtenstein LA: contraindications

- Dementia, stress +++
- Unability to stay on the operative table for 1 hr
- Unreducible or strangulated hernias
- Hypersensitivity to local anaesthesia

- Relative CI:
  - obesity (BMI > 30)
  - bilateral
  - young age
  - recurrence
Advantages

• Day-care hospitalisation 100%
• Early mobilisation
• Decrease in complication
• Economic and social benefit

• Decrease chronic post operative pain
Major obstacle

• Anesthesists
Major incentive

• Patients
Local anesthesia

• Lichtenstein
• Ombilical hernias
• Epigastistic hernias
• Small incisional hernias
Outpatient inguinal hernia repair under local anaesthesia: feasibility and efficacy of ultrasound-guided transversus abdominis plane block

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Abstract

Background

The aim of this prospective randomized study was to determine the utility of transversus abdominis plane (TAP) block to improve the efficacy of conventional local anaesthesia for hernia repair in order to achieve an adequate anaesthesia and to evaluate its post-operative analgesic effectiveness.

Method

Hundred and fifty consecutive male patients undergoing outpatient hernia repair (Lichtenstein technique) were enrolled in this study. Patients were randomly allocated to undergo a combined TAP block and local anaesthesia (case group) or single conventional local anaesthesia (control group). The study was designed to obtain a 1:2 case–control ratio. The primary outcome was the evaluation of the proportion of patients achieving an adequate anaesthesia. The secondary outcome was the evaluation of pain on movement, pain at rest, rescue analgesia need, nausea and satisfaction.

Results

An adequate anaesthesia was achieved in 8 % case and in 36 % control subjects (p = 0.001). At the 6 and 12 h post-operative evaluations, patients enrolled in the case group reported significantly less pain (evaluated by VAS score) both at rest and on movement (p always = 0.001). Moreover, the need of rescue analgesia resulted significantly higher in the control group (14 vs. 32 %, p = 0.01).

Conclusion

Our results demonstrated that, as compared with conventional local anaesthesia, the combination of TAP block with local anaesthesia showed a higher efficacy in the obtainment of an adequate anaesthesia and in the post-operative pain control for hernia repair.

Keywords

TAP block/C1 Hernia/C1 Anaesthesia/C1 Analgesia/C1

Introduction

Inguinal hernia repair is one of the most commonly performed operations world-wide [1]. However, there is no common consensus among surgeons regarding the best choice of anaesthesia.

Several retrospective and randomized controlled trials demonstrated the clinical and pharmacoeconomic superiority of local anaesthesia as compared with spinal and general anaesthesia [2–6]. In spite of this, the use of local anaesthesia for inguinal hernia repair in Europe is not a common practice. Interestingly, the low utilization of local anaesthesia for inguinal hernia repair was noticed across Europe. Previous studies have revealed that, in the UK, only 5–10 % of inguinal hernias undergo surgery under local anaesthesia with the majority of cases being repaired under general (60–70 %) or regional anaesthesia (10–20 %) [7–11].

The transversus abdominis plane (TAP) block is a regional anaesthesia technique that provides analgesia to the parietal peritoneum as well as to the skin and muscles of the anterior abdominal wall [12, 13]. Despite a relatively low risk of complications and a high success rate using modern techniques, TAP block remains overwhelmingly underutilized. Although the block is technically straightforward, there is inertia regarding its adoption into clinical practice [12].

The aim of this prospective randomized study was to determine the utility of TAP block to improve the efficacy of conventional local anaesthesia for hernia repair.
of the skin. Approximately 10 ml is injected deep into the incision using a 2-inch-long 25-gauge needle into the hydrochloride monohydrate 7.5 mg/ml. Approximately As regarding anaesthetic agents, our choice has been a Conventional local anaesthesia muscle deeper (Figs. orly) and the transversus abdominis muscles pushing the expansion of the LA solution as a dark shadow between the correct placement of the needle was confirmed by injection site was defined between aponeurosis of internal echoic line, was assessed under direct ultrasonography. The progression of the needle, visible as a bright hyper-oblique and transversus abdominis muscles. During inser-

Fig. 1 Diagram of the place of puncture

Fig. 2 a Abdominis wall layers before needle insertion, b infusion of LA during TAP block procedure
Lichtenstein procedure under local anaesthesia

Important tool in the surgeon arsenal
2nd Joined « Hands-on » meeting

Abdominal Wall Surgery for Beginners

May 31st, 2017