

# 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*

*Ruben N. van Veen, MD,\* Chander Mahabier, MD, PhD,† Imro Dawson, MD, PhD,‡  
Wim C. Hop, PhD,§ Niels F. M. Kok, MD,\* Johan F. Lange, MD, PhD,\*  
and Johannus Jeekel, MD, PhD\**

**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.

*Ann Surg* 2008;247: 428–433

*Ann Surg* 2008;247: 428–433



## **Totally extraperitoneal repair under general anesthesia versus Lichtenstein repair under local anesthesia for unilateral inguinal hernia: a prospective randomized controlled trial**

**Devi S. Dhankhar · Naveen Sharma ·  
Tushar Mishra · Navneet Kaur · Seema Singh ·  
Sanjay Gupta**

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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.

*Acta Chir Belg*, 2015, **115**, 136-141

## **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.

## RESEARCH ARTICLE

## Open Access

# Ten-year audit of Lichtenstein hernioplasty under local anaesthesia performed by surgical residents

Hannu Paajanen<sup>1,2\*</sup>, Riitta Varjo<sup>1,2</sup>**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 anaesthetist



# 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 ?

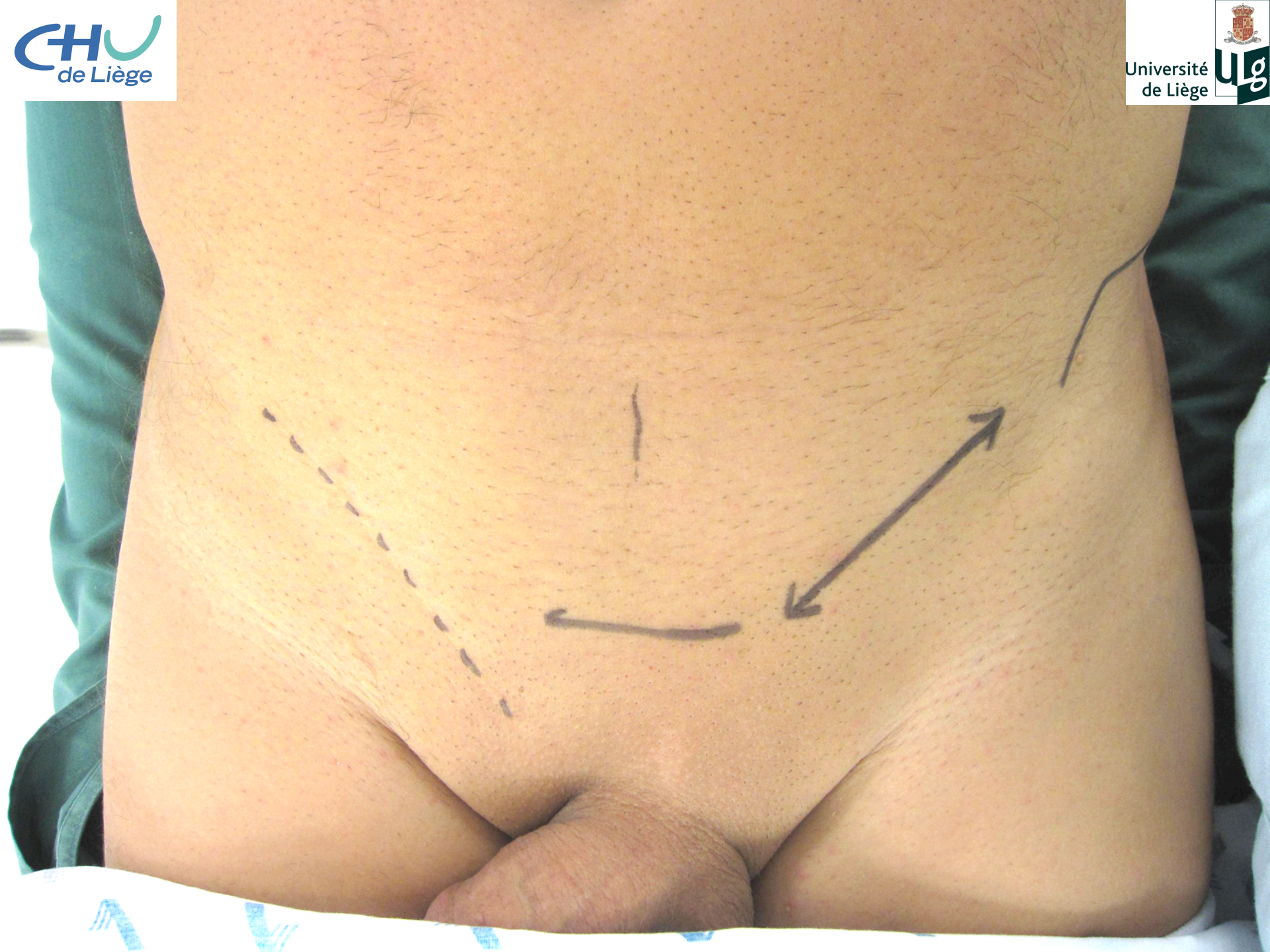
- Take your time
- EMLA + paracetamol + alprazolam (?)
- Slow injection
- Room temperature
- pH
  
- No IV line
- No antibiotics

E. L. Ball · P. Sanjay · A. Woodward

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

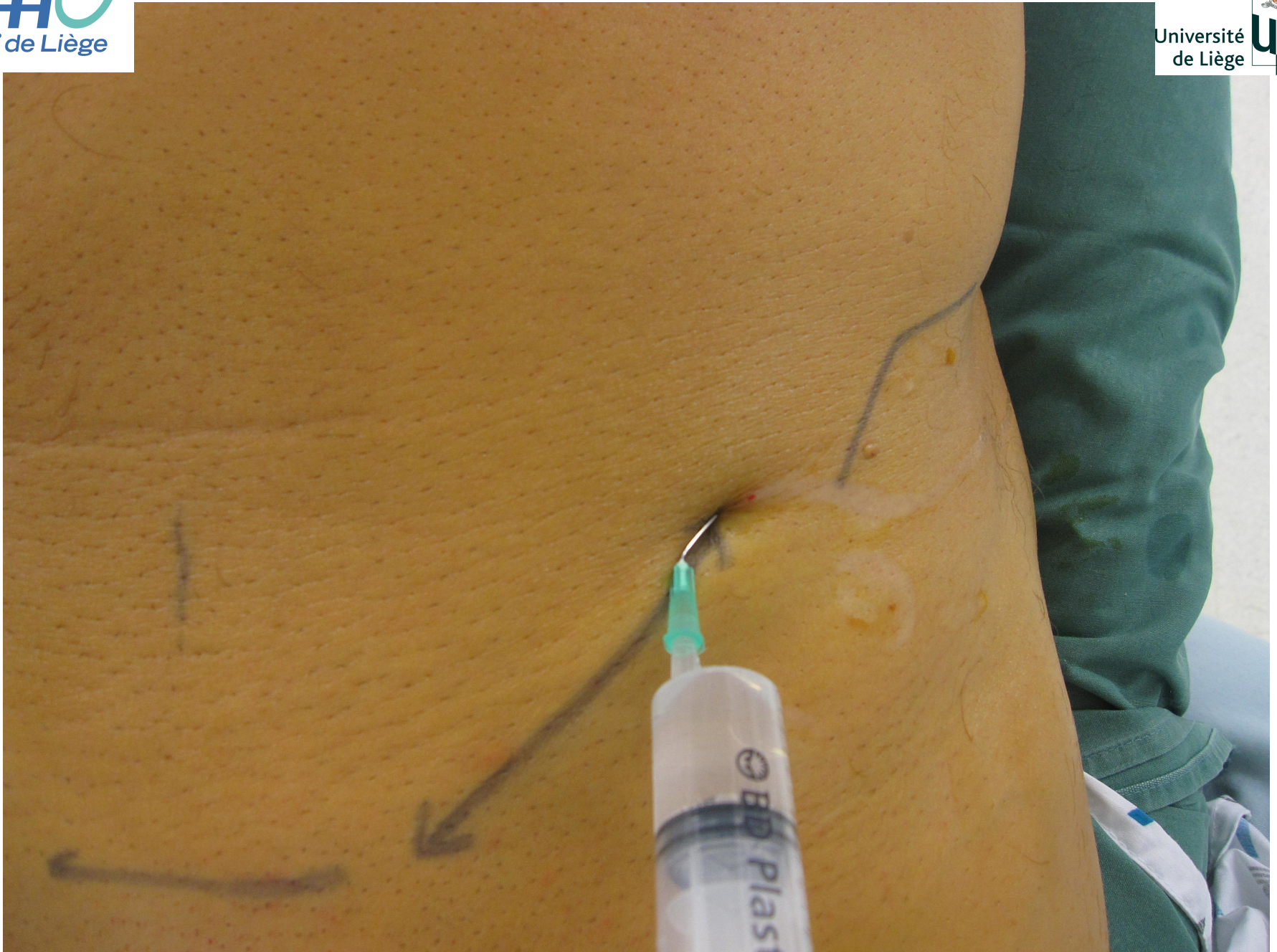
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**Abstract** Bicarbonate buffered local anaesthetic solutions are known to reduce the pain of infiltration. However, its efficacy in reducing the pain of infiltration in patients undergoing inguinal hernia repair has never been tested. This study aims 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.







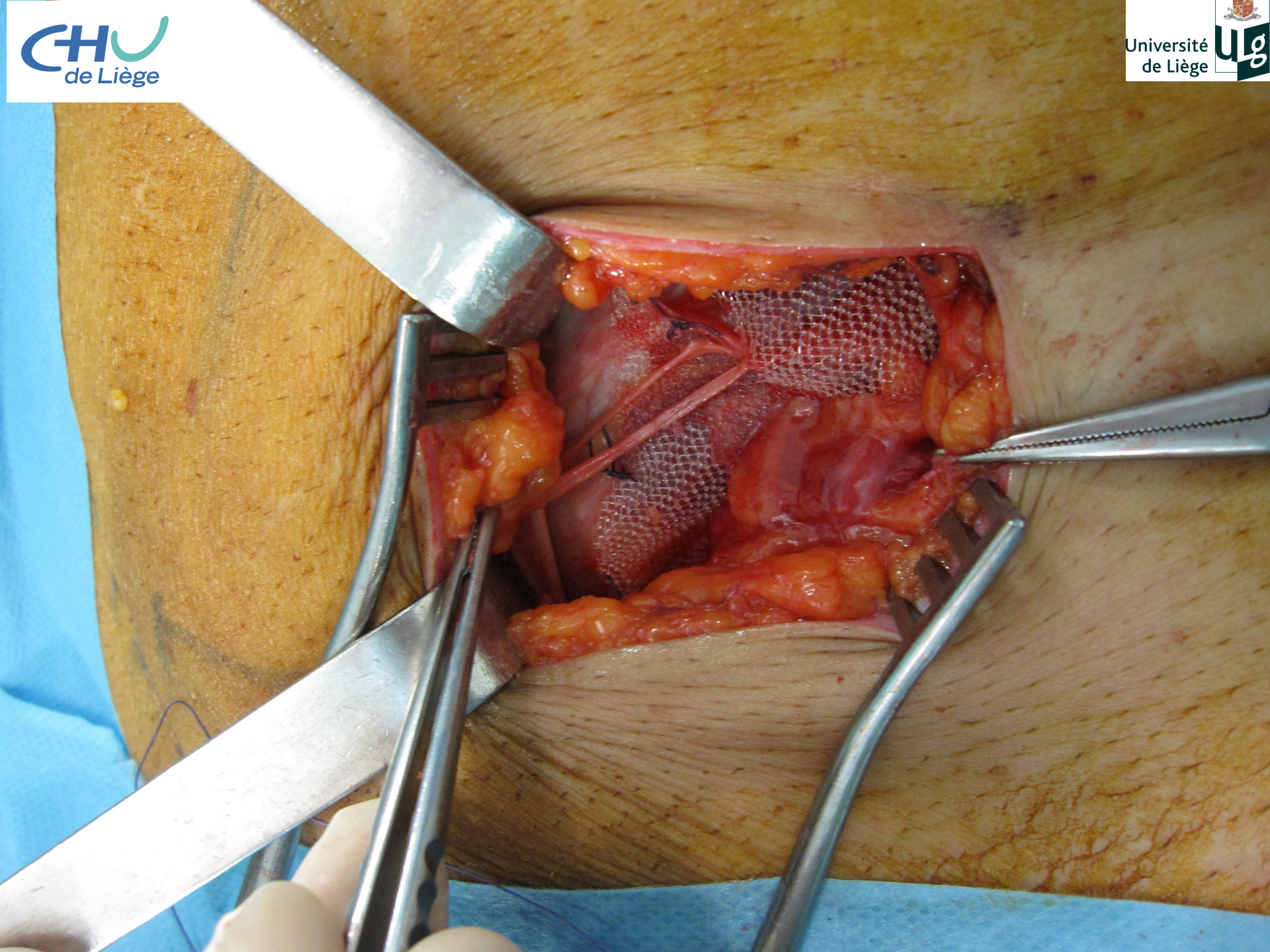






# Take your time, you will save it!

- 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

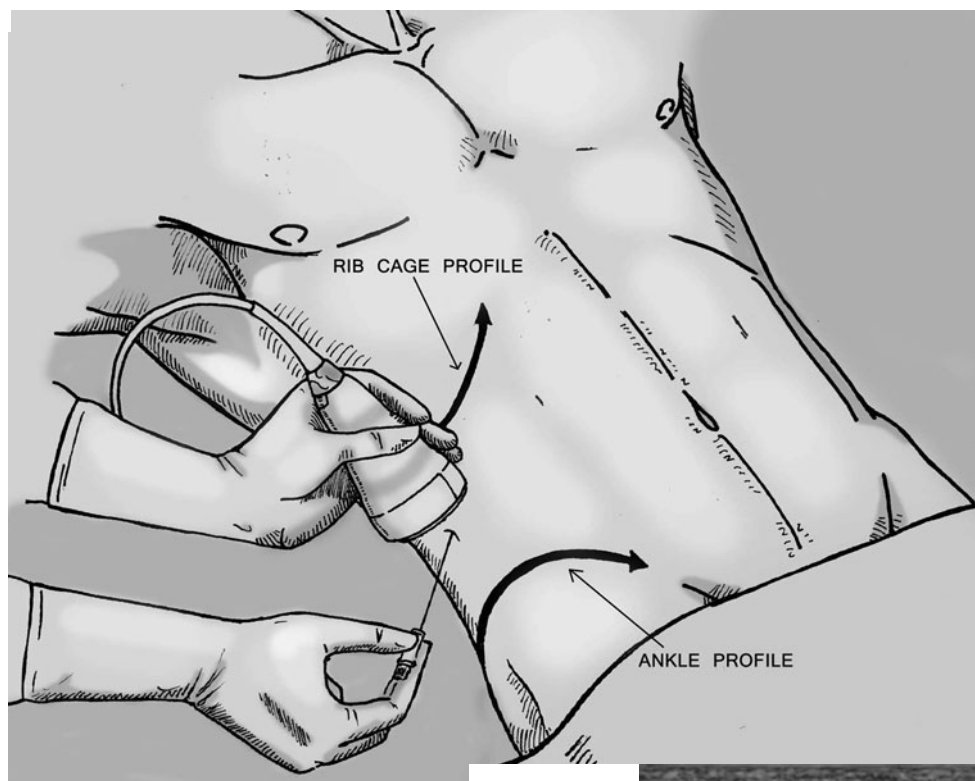
- Lichtenstein
- Umbilical hernias
- Epigastric hernias
- Small incisional hernias

Hernia (2013) 17:749–755  
DOI 10.1007/s10029-012-1022-2

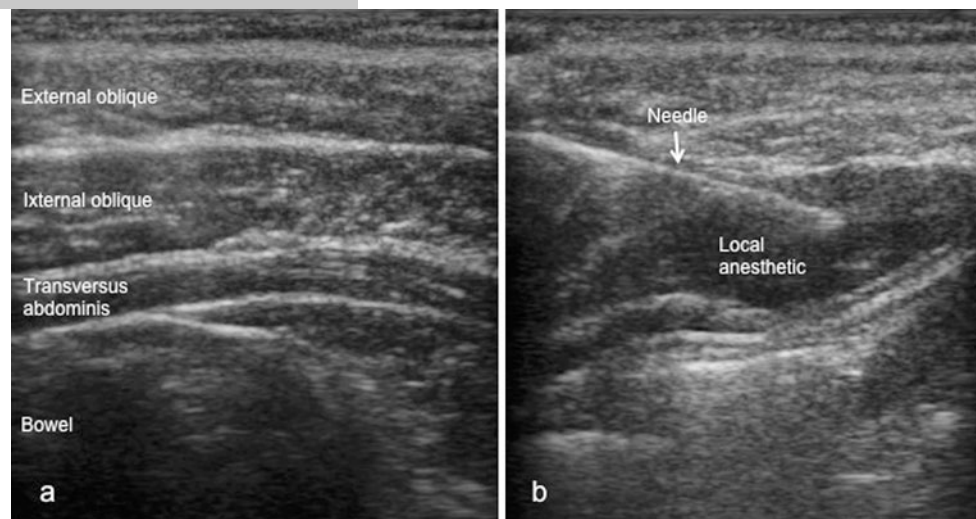
ORIGINAL ARTICLE

## **Outpatient inguinal hernia repair under local anaesthesia: feasibility and efficacy of ultrasound-guided transversus abdominis plane block**

**M. Milone · M. N. D. Di Minno · M. Musella ·  
P. Maietta · G. Salvatore · C. Iacovazzo ·  
F. Milone**



**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 31<sup>st</sup>, 2017