

CLINICAL STUDY

A single-surgeon, single-institute experience of 115 Lichtenstein hernia repairs under local anesthesia

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Abstract: *Background:* Repair of an inguinal hernia is one of the most common operations performed in general surgery with significant costs to health care and society. Lichtenstein mesh repair has been the most widely performed groin hernia repair. In this study, we wanted to emphasize the effectiveness of local anesthesia in groin hernia repair by single-surgeon's experience.

Methods: One-hundred and fifteen inguinal hernia patients were reviewed between July 2005 and July 2007. 2 % Prilocaine was injected for local anesthesia and Lichtenstein polypropylene mesh repair technique was performed. Pain was assessed after operation by using a visual analogue scale (VAS). All patients were controlled at postoperative first week, first month and end of first year.

Results: 113 (98.26 %) of 115 patients were discharged at postoperative 8th hour. The other 2 patients (1.739 %) were discharged at postoperative second day. They were followed up two days, because of seroma and pain, individually. Mean VAS score was 3.2 (2.7–4.0 95 % CI). There was no statistically significant difference between groups, according to Nyhus classification, right/left inguinal hernia and gender.

Conclusion: Lichtenstein mesh repair under local anesthesia is an effective day case technique, particularly in the elderly and medically unfit patients. The economic benefits are enhanced by low morbidity and low recurrence rates (*Ref. 5*). Full Text (Free, PDF) www.bmj.sk.

Key words: Lichtenstein, groin hernia, inguinal hernia, local anesthesia.

The repair of an inguinal hernia is one of the most common operations performed in general surgery with significant costs to health care and society. Rates of repair increase annually and have a potential to double in near future. Since its introduction, the Lichtenstein mesh repair has been the most widely performed groin hernia repair and is used as the golden standard to which new techniques are compared. Nevertheless, a controversy still exists about the anesthetic method to choose. Due to an increasing demand by health care providers for the more cost-effective care, there is a requirement for a standardization to contain the cost. In this context, the choice of anesthetic method for groin hernia repair has not played a significant role despite important differences between the methods. Kehlet et al suggested that the local infiltration anesthesia was the best, to facilitate early recovery and discharge of patients, and also an improved early pain relief, significantly reduced costs, and preserved patient satisfaction¹.

In this study, we wanted to emphasize the effectiveness of local anesthesia in groin hernia repair by a single-surgeon's experience.

Material and method

Records of one hundred and thirty six inguinal hernia patients were reviewed between July 2005 and July 2007. An informed consent was obtained from every patient. 21 patients were excluded due to explicit refusal of local anesthesia by patients. Also the patients who were admitted to the emergency department were excluded.

2 % Prilocaine was injected for the local anesthesia at a maximal dose of 150 mg and Lichtenstein polypropylene mesh repair technique was performed. All patients were controlled in the postoperative first week, first month and the end of first year. The pain was assessed after the operation by a visual analogue scale (VAS) with two anchor points, zero denoting no pain and ten for the worst pain the patient had ever experienced.

The data were analyzed using SPSS 11.5 for Windows. Statistical analysis was performed by the chi-square test or Fisher's exact test. Descriptive statistics were shown as percentile. The results were expressed as mean \pm SD, and $p < 0.05$ was accepted as statistically significant.

Results

The median age of the 115 patients was 30 (14–85) years. 108 (93.9 %) of them were male and 7 (6.09 %) of them were

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female. According to the Nyhus classification (2); 72 (62.608 %) of all patients were type-IIIa (direct inguinal hernia), 28 (24.347 %) were type-II (indirect inguinal hernia) and 15 (13.04 %) were type-IIIb (scrotal indirect inguinal hernia). 66 (57.391 %) of all patients had a right-sided inguinal hernia. Thirteen patients had coronary arterial disorders (CAD), 7 hypertension, 2 chronic obstructive pulmonary disorders (COPD), 1 migraine and 1 had panic attack. Before surgery, an intravenous 15 mg midazolam was prescribed as prophylaxis for the panic attack. All patients were unmonitored, except 15 of them (13 CAD and 2 COPD). 113 (98.26 %) of 115 patients were discharged at 8 hour after the operation. The other 2 patients (1.739 %) were discharged on the second day after the operation. They were followed up individually for two days due to seroma and pain.

During postoperative visits in the first week, seroma was detected in a patient with COPD who was operated for the type-IIIb inguinal hernia (0.869 %). It was treated by fine needle aspiration and medical treatment. Superficial ecchymosis was detected in a patient who was operated for the type-IIIb inguinal hernia (0.869 %). It was achieved by a medical treatment. The patient with migraine and the type-IIIb inguinal hernia (0.869 %) experienced a pain at the operation site until the end of the second month. The pain disappeared spontaneously.

In the first month after the operation, a relapsed right inguinal hernia (0.869 %) was detected in one of the type-IIIb inguinal hernia patients. He had a story of 4 inguinal hernia operations for a left sided groin hernia at another medical center. We reoperated him under local anesthesia, and our one-year follow up was uneventful.

The mean VAS score was 3.2 (2.7–4.0 SD). There was no statistically significant difference between groups, according to Nyhus classification, right/left inguinal hernia and gender ($p > 0.05$). No statistically significant complication was noted. All patients declared that they would have a similar procedure performed under similar conditions (100 %).

Discussion

The main criteria for success of a day-case surgery are reliability, feasibility, and patient safety and satisfaction. Regardless the anesthetic technique, the main reasons for deviation from a planned day-case setup would be related to anesthesia, surgery, and patient factors.

The feasibility of local anesthesia is high (3). The residual effects of general anesthesia may lead to a number of overnight stays due to urinary retention, nausea, vomiting, or sedation. We observed neither urinary retention nor any other complaints as Kark et al (4) did at their series.

Kehlet et al suggested that an early postoperative pain is reduced when the operation is performed under the local infiltration anesthesia with the use of a long-acting local anesthetic that lasts 4 to 6 hours. This is longer than for spinal or general anesthesia, as documented in large, randomized trials comparing the three anesthetic techniques¹. However, whenever a general anesthesia technique is used (or spinal anesthesia), it should be supplemented with the local infiltration anesthesia at the end of procedure, thereby providing the early pain relief similar to that achieved by local infiltration anesthesia.

The groin hernia repair with the local infiltration anesthesia represents the most cost-effective anesthesia because it can be performed as unmonitored anesthesia or combined with small doses of sedatives¹. In our study, we did not use sedatives. Before surgery, an intravenous 15 mg midazolam was prescribed as a prophylaxis for panic attack only in one patient. Callesen et al (5) reported the patients' satisfaction rate as 80.3 %. We had a rate of 100 %.

The Lichtenstein mesh repair performed under local anesthesia is an effective day-case technique, particularly in elderly and medically unfit patients. The economic benefits are enhanced by low morbidity and low recurrence rates.

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