

INGUINAL HERNIA REPAIR UNDER LOCAL ANAESTHESIA

Tawfik Abuzalout, Salah Eltaktuk

Department of Surgery, Faculty of medicine, University of Garyounis.

ABSTRACT

Tension-free Lichtenstein procedure was performed under local anaesthesia in 113 patients. During 2006-2009 in 7th October Hospital and Aljala Hospital, Benghazi, Libya. After a mean follow-up of one year, the operative outcome (operation time, pain, bleeding, infections) and long-term results (recurrences, chronic pain) were recorded. The rate of wound infection (1.7%) and seromas (4.4%). One recurrences (0.9%) were found at follow-up. Although 10% of the patients reported some groin pain afterwards, over 90% were very satisfied with the operation. Open mesh repair under local anaesthesia is a cost-effective, simple and safe operation.

KEY WORDS: Inguinal hernia, Local anesthesia.

INTRODUCTION

Inguinal hernias occur in about 16% of adult men and herniorrhaphy is one of the top three surgical procedures in most western countries. Approximately 12,000 inguinal herniorrhaphies are performed each year in Finland, over 80,000 operations in England and over 800,000 in the US⁽¹⁻³⁾. About 20% of groin hernia repairs are undertaken for recurrences and 4% as an emergency⁽⁴⁾. Therefore, the socioeconomical impact of groin hernia surgery is high on health care system. Lichtenstein hernioplasty is a tension-free technique, which uses polypropylene mesh to support the inguinal muscular layers⁽⁵⁾. Its learning curve is even shorter than traditional groin hernioplasties, therefore, the Lichtenstein procedure has rapidly increased as a primary operation for inguinal hernias. Several randomised and retrospective studies have shown that inguinal hernia repair under local anaesthesia results in less postoperative analgesic requirements and side-effects, reduced hospital stay, lower costs and shorter recovery times⁽⁶⁻⁹⁾. Recent quality control studies have reported that chronic pain after inguinal hernia operation may occur in 10-30% of patients in a long-term follow-up⁽¹⁰⁻¹²⁾. The etiological factors include irritation or damage of inguinal nerves by sutures or mesh⁽¹³⁾, inflammatory reaction against the mesh⁽¹⁴⁾ or simply scar tissue⁽¹⁵⁻¹⁷⁾. The preliminary reports of the Lichtenstein procedure were very optimistic with nil or a very low rate of chronic pain⁽¹⁸⁾. First randomized follow-up studies indicated that the use of lightweight meshes may be associated with significantly less pain during exercise and the feeling of a foreign object compared to standard heavy meshes⁽¹⁹⁻²²⁾.

MATERIALS AND METHODS

The study is a prospective analytical study conducted from October 2006 to April 2009 in the general surgery unit of 7th October and Aljala hospital. The study subjects (n = 113) were >18 years old with

elective inguinal hernias. Recurred, bilateral, strangulated or incarcerated cases, and patients with allergic history against the anesthetics applied, were excluded from the study. The patient selection for open mesh repair under local anaesthesia was based on the common clinical criteria of ambulatory surgery. The procedure was always performed under local infiltration anaesthesia, using 9 x 13 cm polypropylene mesh. The local anaesthetic mixture consisted of 25ml of 1% lignocain with 1:200,000 adrenaline and 25ml of 0.9% saline. 1 g of intravenous cefotriaxone was administered in the anaesthetic room to all patients. In the anaesthetic room, approximately 20 ml of the local anaesthetic mixture was infiltrated along the line of incision in the subcutaneous plane, around the pubic tubercle and the deep ring.

A skin and external oblique aponeurosis incision was then performed, after which subaponeurotic infiltration of the mixture deep to the external oblique layer was undertaken. Further infiltration was performed into the spermatic cord avoiding the testicular vessels, nerves and the vas deferens. The sac was dissected and excised and Lichtenstein repair was performed. If the hernia sac was large and direct, it was inverted with absorbable 2-0 PDS sutures. The mesh was trimmed and placed between the conjoint tendon, inguinal ligament, pubic bone and internal oblique aponeurosis^(5,23). The ilioinguinal, genitofemoral and iliohypogastric nerves were identified if possible and carefully preserved. Care was taken not to involve the nerves within the sutures. No drain left in the wound. A 0.5-1.0-mg bolus of intravenous alfentanil was administered if the patient felt pain during the operation. Six young patients were anxious and feeling pain converted to general anaesthesia. Diclofenac sodium or paracetamol were prescribed for postoperative pain. 102 (90%) patients discharged on the same day and 11 (10%) stay overnight in the hospital. The immediate outcome was analyzed from the operative reports and patient's records. The patient characteristics, type of hernia, operation time and wound complications were recorded. The long term follow-up was performed by the surgeon team. Time to return to

Correspondence and reprint request :

Tawfik Abuzalout

Department of surgery, Faculty of medicine, University of Benghazi, Libya.

Email: tawfikz_salem@yahoo.com

normal activities, chronic pain, need of medication, feeling of foreign object and satisfaction of the procedure were recorded at each time interval. Twelve patients of the original groups were dropped because they could not be reached.

RESULTS

The median age of the study group was 36 years (range 18–65). The median body mass index (BMI) of the study group was 28 (range 20.2–32.5). Because 12 patients were lost during the follow-up, a final one year analysis left a total of 101 patients .

(Table 1) Characteristics of the patients

Number of patients	113
Male\Female	104\9
Mean age	36
Indirect/direct hernia	92\17
Combined	4
Right\Left sided	67\46
Mean operative time(min)	58
Mean volume of local anaesthesia(ml)	50

(Table 2) First week postoperative course of the patients

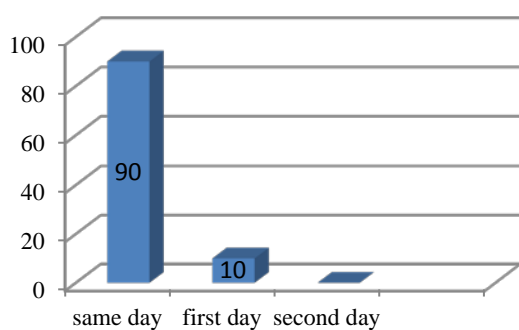
Normal wound healing	106
Wound infection	2
Wound seroma	5
Analgesic use - Daily	29
- Sometimes	67
- Non	17
Painless Walking	75

(Table 3) First Month postoperative course of the patients

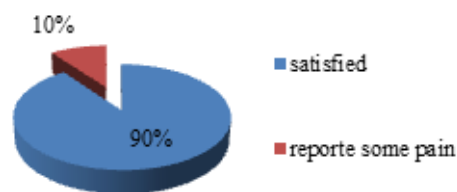
Pain feeling	11
Analgesic use	11
Feeling of foreign body	4
Normal daily activity	98
Missed follow up	4

(Table 4) One year postoperative course of the patients

Pain feeling	4
Analgesic use	4
Feeling of foreign body	3
Normal daily activities	97
recurrences	0.9
Missed follow up	12



(Figure 1) Hospital stay



(Figure 2) patients satisfied with the procedure

DISCUSSION

Inguinal hernias are common in the population that centralization into specific hernia centers in United States has been carried out, recurrences between 0 and 1% and infections between 0 and 5% have been reported^(23,24,25). Lichtenstein hernioplasty under local anesthesia was rapid and an effective surgical technique for inguinal hernia repair. Patients did not have urinary retention postoperatively, which is rather commonly seen after spinal anesthesia of elderly men⁽²⁶⁾. The surgical technique was relatively simple and straightforward. Despite receiving widespread acceptance overseas, local anaesthetic inguinal hernia repair is not popular with surgeons in the Libya . Previous studies have reported higher patient satisfaction rates with local anaesthetic inguinal hernia repair^(6,27,28). However, one study⁽²⁹⁾ has reported a patient dissatisfaction rate of 8% following local anaesthetic inguinal hernia repair, mainly due to intraoperative discomfort or pain and it has been suggested that a large dose ilioinguinal-iliohypogastric block in combination with stepwise infiltration might result in reduced intraoperative discomfort.

It is well known that traditional inguinal hernioplasties (Bassini, Shouldice, McWay etc.) have long-lasting pain due to tension⁽¹⁾. In tension-free techniques chronic pain has also been reported in 20–30% of patients⁽³⁰⁾. The etiological factors may include irritation or damage of inguinal nerves by sutures or mesh⁽¹³⁾. To avoid chronic nerve irritation and the feeling of a foreign object, recent multicenter studies have hypothesized that partially absorbable or lightweight meshes would improve operative outcome^(19–22). The present study indicated that postoperative seromas were not a big problem in Lichtenstein hernioplasty , and also indicated that severe chronic neuralgia was rare when the patients were properly followed up, Only four patients (3.5%) needed analgesics at one year of hernia repair. When postoperative neuralgia occurred, it is usually healed with nonoperative treatment. Laparoscopic techniques may give some short-term advantages in terms of pain and patients’ perception of health⁽³¹⁾, but the long-term comparative follow-up studies to open techniques are still few and patients should be fit for general anaesthesia⁽³²⁾. The present study indicated that although 10% of patients reported some pain sensations afterwards in the groin, this was mild in nature since over 90% were very satisfied with the

operation. It is cost-effective since 90% of the patients discharged on the same day and 95% avoid general anaesthesia.

CONCLUSION

Open tension free mesh repair (Lichtenstein) under local anaesthesia is cost-effective, simple and a safe operation. The open tension free mesh technique under local anaesthesia is simple enough to be learned well in general surgical training. It can be the primary standard operation for many of the adult inguinal hernias.

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