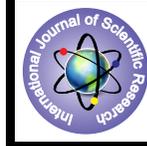


## Lichtenstein Tension Free Hernioplasty Under Local Anaesthesia –An Institutional Experience



### Medical Science

**KEYWORDS :** Lichtenstein, mesh, hernioplasty, local anaesthesia.

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### ABSTRACT

*Inguinal hernia is one of the oldest surgical diseases known to mankind. Inguinal hernia repair continues to be one of the commonest surgeries performed and more than 100 types of surgeries have been described for repair of inguinal hernia. However, till date no perfect surgery suitable for all kinds of hernia has been found. In present times, inguinal hernia repair is increasingly becoming a day care surgery. Day care surgery can be superior to surgery performed under regional or general anaesthesia in terms of shorter recovery period. This retrospective study was done at our hospital to evaluate the procedure of local anaesthesia for inguinal hernia repair.*

#### Introduction:

Inguinal hernia has been defined as a bulge of the peritoneum through a congenital or acquired defect in the muscular and fascial structures of the abdominal wall.<sup>1</sup> Groin hernias are the most common form. The lifetime risk of developing an inguinal hernia is 27% for men and 3% for women.<sup>2</sup>

Worldwide, hernia surgery continues to be one of the commonest surgeries performed.<sup>3</sup>

More than 100 types of surgeries have been described for repair of inguinal hernia. Notable people in history have suffered from inguinal hernias. However, no single procedure is applicable to all. Nowadays with changing times, trend is towards better outcome with minimal loss of work and very less affect on Quality of Life.

Laparoscopic hernia repair is one such attempt at reducing the operative morbidity, whereas surgery under local anaesthesia is another attempt at it.

Laparoscopic hernia repair requires administration of general anaesthesia which not only exposes the person to various anaesthetic drugs, but also increases the cost of hernia repair.

Repair of inguinal hernia under local anaesthesia attempts to decrease operative morbidity with faster return to activity and costs less to the patient, which is particularly important in developing nations like India.

The merits of local anaesthesia have been promoted by Frank Glassow, who worked in Shouldice Clinic.<sup>4</sup>

Several studies have shown that hernia surgery performed under local anaesthesia provides the best outcome.<sup>5,6,7,8,9</sup>

A systematic review of groin hernia surgery published by the RCSE in 1998 addressed the topic of local anaesthesia from 11 randomised studies. It concluded that local anaesthesia was as safe and effective as general anaesthesia and had less adverse effects on respiratory function.<sup>10</sup>

The Plymouth Hernia Service has championed the use of local anaesthesia in inguinal hernia surgery. <sup>11,12,13</sup>

Open mesh repair under local anaesthesia is an effective day care technique, particularly in the elderly and medically unfit. The economic benefits are enhanced by low morbidity, early return to normal activities and low recurrence rates. <sup>14</sup>

Also, use of local anaesthesia for hernia repair can allow less dependence of surgeon on anaesthetist, which is of concern with less manpower in certain areas of healthcare in India.

Specialised clinics of hernia like Toronto Clinic, Shouldice clinic routinely use only local anaesthesia for repair of hernia.

#### Materials and methods:

This retrospective study data was analysed in IIMS&R Hospital, Lucknow, for a period of one year from 01 Jan 2015 to 31 Dec 2015. The study included 35 patients, who underwent inguinal hernia mesh repair under local anaesthesia. After detailed history and clinical examination patients underwent standard preoperative investigations which included haemoglobin, total leucocyte count, differential leucocyte count, platelet count, random blood sugar, renal function tests in all cases and Chest X Ray and electrocardiogram in selected cases. Informed written consent was taken. Perioperative antibiotics were given in all the patients as per unit protocol.

#### The following cases were excluded from the study:-

1. Complicated hernias like irreducible hernia, obstructed hernia, strangulated hernia and all patients who underwent emergency operations.
2. Patients with bilateral hernias.
3. Recurrent hernias.

Anaesthetic solution was a 50:50 mixture of 2% xylocaine with 1:2,00,000 adrenaline and 0.5% bupivacaine. Lichtenstein tension free hernioplasty was done in all patients.

#### Detailed steps of infiltration with anaesthetic mixture that was followed:

##### Ilio-inguinal block:

Anterior superior iliac spine is palpated and a point is located 2 cm medial and superior to it.

The needle is inserted perpendicular to the skin and the first resistance to needle is encountered at the external oblique muscle and loss of resistance is appreciated as the needle passes through the muscle and after negative aspiration, around 2- 3 ml of local anaesthetic mixture is injected. The needle is then advanced further with second resistance felt at internal oblique muscle. After the loss of second resistance, with needle between the internal oblique and transverses abdominus muscle, another 2 – 3 ml of local anaesthetic mixture is injected after negative aspiration. The needle is then withdrawn to the level of skin and advance in a medial fashion at 45 degree angle to pierce both external and internal oblique muscle and around 4 – 6 ml of local anaesthetic mixture is injected. The same manoeuvre is then

applied with needle at 45 degree angle in lateral direction and another 4 – 6 ml of the mixture is injected after negative aspiration.

Care must be taken in patients with thin abdominal musculature and obese patients.

Second step involves injecting of the anaesthetic mixture along the line of proposed skin incision and approximately 5 – 6 ml of the mixture is injected after negative aspiration.

Third step includes injection of the mixture in subfascial plane beneath the external oblique muscle, and approximately 10 ml of mixture is injected. In patients with very thin abdominal wall or very obese patients, it is helpful to carry out this step after making the skin incision and inject the anaesthetic mixture in the subfascial plane under vision.

The last step is to inject 2-3 ml of this solution around the pubic tubercle and another 5 – 6 ml of solution into the hernia sac.

### Results:

All 35 patients were males and the age range was 22 – 76 years. Out of the 35 cases, 22 were indirect hernias and 13 were direct hernias.

All patients had satisfactory anaesthetic effect after local infiltration.

Operative time ranged from 40 – 70 minutes and mean operative time was 55 minutes.

Intra-operative complications: There were no intra-operative complications.

Post-op results:

Post-op urinary retention- nil

Post op wound infection – nil

Haematoma – nil

Deep venous thrombosis – nil

Persistent wound pain – nil

### Discussion:

India is a developing economy and many patients in India cannot afford even simple routine procedures. Most of the government run hospitals are overcrowded and overburdened. Any surgical modification that can decrease the surgery time and cost will increase the turnover of patients and also, a day care procedure done under local anaesthesia will reduce the financial burden on the patients.

Despite these factors, many surgeons are reluctant to adopt hernia surgery under local anaesthesia due to many factors. Lack of awareness, unfamiliarity with the technique for local anaesthesia, apprehension of the patient, occasional uncooperative patient continues to hamper widespread acceptance of hernia surgery as ambulatory procedure.

Decreased financial burden on the patient and early recovery should definitely prompt both the treating surgeons and the patients to adopt this procedure.

Although the anaesthetists did not actively participate during the surgery done at our centre, however their immediate care was available in case it was needed. It is advisable to have an anaesthetist cover, especially during initial few cases, which will help to wean off the anxiety on the operating surgeon about effectiveness of local infiltration and at times, also when the patient is medically a high risk case for intra-operative monitoring during the surgery so that the surgeon can concentrate on the surgery.

Many studies have compared the cost effectiveness of the practice of local infiltration over regional or a general anaesthesia.

Self-explanatory financial benefit is seen with avoidance of regional/ general anaesthesia.

In our series, there was no incidence of urinary retention, pulmonary complications, cardiac complications or DVT. Early mobility after surgery and avoidance of regional/general anaesthesia helps in having a low post-op complication rate.

### Conclusion:

The study shows that use of local anaesthesia is feasible for routine elective uncomplicated hernia surgery. Although the financial impact was not studied as a part of this study, but non usage of regional or general anaesthesia would automatically lead to decreased cost to the patient.

Also, such a procedure can be readily extended to patients who are otherwise deemed unfit or high risk due to age or other comorbidities. More and more surgeons should adopt this practice for benefit of the patients.

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