ABSTRACT

Introduction: The Lichtenstein technique is currently one of the popular methods in practice as it provides very good results consistently. However many patients suffer from wound indurations and chronic wound pain which are often underreported. The transinguinal preperitoneal technique (TPT) avoids these complications by placing the mesh in preperitoneal plane by open approach.

Materials and Methods: In this study, 71 patients were randomized into two groups one, of which one underwent the Lichtenstein repair and the other preperitoneal repair by TPT. All the patients were followed up for two years.

Results: Patients in TPT group had less pain in immediate post-operative period (p = .005), less wound induration and chronic pain on follow-up. Patients were also able to return to work early (p =0.036). Average duration of operation was slightly longer compared to Lichtenstein technique (p < .0061). There was no recurrence in either group on 2 year follow-up.

Conclusion: This study shows that TPT provides a better alternative to Lichtenstein technique with decreased incidence of wound complications and chronic groin pain, while having a similar recurrence rate. Preperitoneal mesh placement by open approach in TPT is also easier and eliminates the need for laparoscopy.

Keywords: Hernia repair, Preperitoneal mesh, Lichtenstein complications

INTRODUCTION

Inguinal hernia repair is the second most common performed operation for a general surgeon [1]. In today’s scenario, the Lichtenstein technique has achieved marquee status as the procedure of choice for open repairs. It is a tensionless repair, easy to learn and perform, with very low recurrence rates [2]. However patients undergoing hernioplasty by Lichtenstein procedure can have wound complaints and chronic groin pain which is often underreported [3]. These problems can be avoided by placing the mesh in the preperitoneal plane by the transinguinal preperitoneal technique [TPT]. Preperitoneal repairs are usually performed by the laparoscopic approach but are generally restricted to bilateral and recurrent hernias. In addition, the laparoscopic approach is hampered by a long learning curve [4], increased cost and higher recurrence and complication rates. TPT avoids all these problems while retaining the benefits of preperitoneal mesh placement.

The aim of the present randomized controlled study was to compare the TPT to Lichtenstein procedure, in patients with unilateral inguinal hernia with respect to operative time, duration of hospital stay and return to work, as well as incidence of wound complications, chronic groin pain and hernia recurrence post-operatively.

MATERIALS AND METHODS

The study was designed as a prospective comparative randomized controlled study including 71 patients undergoing open repair for unilateral inguinal hernia for a period of 30 months. Exclusion criteria: patients aged below 18 years, bilateral or recurrent hernias, undergoing emergency hernioplasty, and medically unfit for the operation. The study protocol was cleared with local institutional ethics committee. Informed consent was obtained from all patients. The patients were randomized into two groups, one the Lichtenstein group (Licht) (35 patients) and other the TPT (36 patients). The median follow-up was 2 year (range 6 month – 3 years). None of the patients was lost during follow-up during the study period.

| Technique |
Both the groups were operated under spinal anaesthesia. Lichtenstein repair was done according to established techniques as per standard protocols and precautions. In case of TPT, patients were catheterised pre-operatively, to prevent any injury to the bladder and aid in preperitoneal dissection. The catheter was removed after 48 hours post-operatively.

Incision of TPT is same as that of Lichtenstein technique [5]. After dissection of the sac, the transversalis is fascia is incised [Table/Fig-1]...
Fig-2] to enter the preperitoneal space. The preperitoneal space is
developed by dissection with index finger [Table/Fig-3]. The space
extends from rectus muscle medially, arcuate line cranially, a little
beyond the anterior superior iliac spine over the psoas muscle
laterally [Table/Fig-4] and the ilipubic tract caudally. A 15 cm x 15 cm
polypropylene mesh, cut into dimension 15 cm x 12 cm, the inferior
medial angle of the mesh is trimmed in a semicircular fashion [Table/
Fig-5] to prevent trauma to the bladder neck. The mesh is placed
in the preperitoneal space and anchored to the Cooper's ligament
with a single 2-0 interrupted prolene suture [Table/Fig-6-8].

RESULTS
A total of 71 patients were studied, TPT group- 50.7% and Licht
group - 49.3% patients respectively. The duration of operation was
more in the TPT group and this was statistically significant. (p < .0061)
On assessment of post-operative pain, significant difference of pain
observed at 12 hours (p = 0.005) which was more in Lichtenstein
repair while no significant difference was found after 24, 48 and 72
hrs and at discharge. The duration of hospital stay was found to
be similar in both the groups. Return to sedentary work was earlier
in the TPT group and it was found to be statistically significant
(p =0.036) [Table/Fig-9]. Complications encountered are tabulated
below [Table/Fig-10].
Peritoneal breach and injury to inferior epigastric vessels or the
corona mortis was more in TPT group. Wound seroma (5.7%),
wound induration (17.14%) were more in the Licht group. 8.6% of
patients in Lichtenstein group had chronic pain in early follow-up
which caused sufficient alarm to the patients and which persisted
in 2.8% of patients on long term causing significant alteration in the
patient’s normal lifestyle. There was no recurrence in either of the
groups during the course of the study. Maximum follow-up for some
patients were up to 3 years but there were no recurrences in either
of the groups till date.

DISCUSSION
The Lichtenstein technique is one of the popular methods of inguinal
hernioplasty as it is easy to learn and perform, and gives consistent
good results with less than 1% recurrence rates [6]. However
placement of the mesh in the inguinal canal has some demerits.
Patients in our Lichtenstein group had increased incidence of
wound and scrotal collection in the immediate post-operative
period, as well as wound induration and chronic pain in long

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In conclusion, this study shows that the TPT provides significant advantages over the Lichtenstein technique in case of repair of unilateral inguinal hernias. Patients in TPT group had less incidence of wound induration and chronic groin pain. They were also able to return to their jobs earlier. Though the average operating time was slightly increased, the duration of hospital stay was same compared to the Lichtenstein group. On 2 years follow-up TPT did not have any recurrence. Therefore the transinguinal preperitoneal technique offers a better alternative to Lichtenstein technique for open repair of unilateral inguinal hernias and should be recommended wherever indications or scope of laparoscopy does not exist.

REFERENCES