ORIGINAL ARTICLE

Preperitoneal repair (open posterior approach) for recurrent inguinal hernias previously treated with Lichtenstein tension-free hernioplasty

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Abstract

Background*:* The repair of recurrent inguinal hernias after prosthetic mesh repair is usually diffucult due to considerable technical challenge and complications. There is also a greater risk of developing further recurrence. The aim of this study was to investigate the outcome of preperitoneal repair (open posterior approach) for recurrent inguinal hernias after Lichtenstein tension-free hernioplasty.

Methods*:* We performed a prospective clinical study in 44 patients having recurrent inguinal hernias the period 2002-2008. Preperitoneal repair was performed on all patients who have had Lichtenstein tension-free hernioplasty previously. The age, gender, operating time, hospital stay, postoperative complication rates and recurrence rates of patients were evaluated.

Results*:* There were no serious intraoperative complications. There were 36 men and 9 women in the study, whose average age was 38.45 (25-68) years. The average operative time and hospital stay were 44.56 (30-120) min and 1.6 (1-3) days, respectively. Complications included 4.5 % seromas, 4.5 % hematomas and urinary retention in 9.09 % patients. Follow-up to date is 1-90 months (range, median 40 months).

Conclusions*:* We concluded that the preperitoneal repair (open posterior approach) in recurrent inguinal hernias after Lichtenstein tension-free hernioplasty is a safe and efficient method with low complication and rerecurrence rates. Hippokratia 2010; 14 (2): 119-121

Key words: recurrent inguinal hernia – preperitoneal repair – Lichtenstein tension free hernioplasty – open posterior approach - mesh repair - anterior approach

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Inguinal herniorrhaphy is one of the most common general surgical operations, with approximately 10-20 % performed for recurrence[1]. Since the introduction of the Bassini method in 1887, more than 70 types of pure tissue repair have been reported in the surgical literature. The mot effective method to repair an inguinal hernia in any given patient is not clearly defined. Recently developed tension-free methods have been found to be superior to conventional tension-producing techniques. An unacceptable recurrence rate and prolonged postoperative pain and recovery time after tissue repair along with our understanding of the metabolic origin of inguinal hernias led to the concept of tension-free hernioplasty with mesh[2]. The Lichtenstein tension-free hernioplasty began in 1984 and evolved (between 1984 and 1988) to a procedure that is now considered the gold standard of hernia repair by the American College of Surgeons[3]. It is widely accepted and used even in recurrent cases with very low recurrence rates[4]. Altough it is very rare, the repair of recurrent inguinal hernia after Lichtenstein hernioplasty is usually a difficult operation due to the disadvantage of reoperating through dense fibrotic scar tissue around the mesh with the risk of testicular damage and a large number of local haematomas. However, a preperitoneal (posterior) approach, open or laparoscopic, reduces these problems. Laparoscopic preperitoneal hernia repair is documented as an excellent choice for inguinal hernia repair in numerous studies with its low hospital stay, postoperative pain and recurrence rates, especially when the surgeon is experienced[5]. The costs and long learning curve are the two major disadvantages of laparoscopic approach. The open posterior preperitoneal mesh repair popularized by Nhyus is still a good alternative for recurrent inguinal hernias[6]. The main advantages of the preperitoneal approach are mesh placement in the preperitoneal space where the hernia is produced and avoiding the disadvantage of reoperating through scar tissue[7]. The objective of this article is to investigate the outcome of preperitoneal repair (open posterior approach) for recurrent inguinal hernias after Lichtenstein tension-free hernioplasty.

Patients and Methods

We performed a prospective clinical study in 44 patients between 2002-2008. Patients operated previously via methods other than Lichtenstein hernioplasty were excluded. This study was approved by local ethic committee and informed consent was taken from patients. Preperitoneal repair was performed by the same surgical team on 44 patients with recurrent inguinal hernias who have had Lichtenstein tension-free hernioplasty previously. Intraoperative data were recorded at the time of opera-

tion, including size of mesh and Nyhus classification of the hernia. Immediate postoperative (within two weeks) and early postoperative (within 2 months) complications of herniorrhaphy were recorded at routine visits. Patients were contacted four to five times by routine physical examination. Patients were assessed yearly for recurrence.

Surgical technique

Cefazolin (1 gr IV) was employed in antibiotic prophylaxis. Following general or regional anesthesia, open preperitoneal mesh repair (posterior approach) was undertaken. Through a lower abdominal transverse incision, the anterior rectus sheath was incised and the muscle reflected medially. The preperitoneal space was cleaved with blunt dissection, exposing the myopectineal orifice, as described by Nyhus. The cord was explored and the hernias were reduced. A 10x15 cm polypropylene mesh with a slit was inserted in the preperitoneal space and fixed with nonabsorbable sutures to pubic tubercle and Cooper's ligament (Figure 1). The mesh was passed behind the cord and manipulated to lay flat against the posterior inguinal floor overlapping the entire myopectineal orifice. No drains were used.

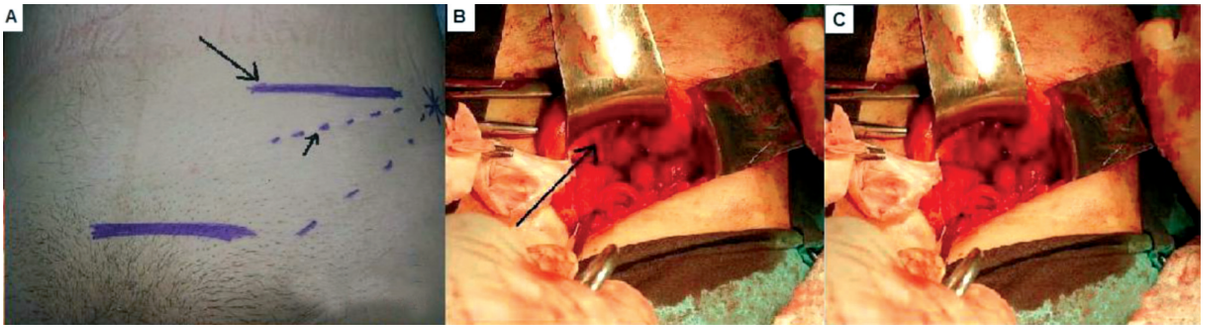

Figure 1: A) Preoperative view, long black arrow shows preperitoneal incision, short arrow shows previous lihtenstein incision.
B) Dissection of the preperitoneal virgin area, long arrow shows posterior view of the cooper line.
C) Posterior mesh placement, black arrow shows cord stracture.

Follow-up

Patients were usually mobilized 6 hours after surgery and discharged the day after operation. Follow-up visits were arranged at 7 days and 4 weeks after surgery and once yearly thereafter.

The age, gender, operating time, hospital stay, postoperative complications and recurrence rates of patients were evaluated.

Results

Forty four patients with 45 recurrent inguinal hernias were repaired via posterior preperitoneal approach during this period. In 1 case, the recurrence was bilateral. There were 36 men and 9 women. The mean age of the patients was 38.45 years (range 25–68). Patient characteristics and physical status are shown in Table 1. Of the 45 inguinal repairs, 40 (90.9%) had been repaired once previously, 5 (11.3%) followed more than one previous repairs.

The recurrent hernias were direct in 18, indirect in 13 and combined in 14 patients. The mean operation time was 44.56 (30-120) min. There were no major intraoperative complications. Minor complications were seromas (4.5%), hematomas (4.5%) and urinary retentions (9.09%). The mean hospital stay was 1.6 (1-3) days. Patients completed a 40 (1-90) months follow-up. One recurrent hernia was detected (2.2%) within 6 months of surgery. No chronic pain or testicular atrophy was detected during the follow-up period.

Discussion

Inguinal herniorrhaphy is one of the most common general surgical operations and Lichtenstein hernioplasty is recently considered as the gold standart of hernia repair[1-3]. It is a safe, simple, inexpensive and effective procedure with low morbidity rates and short hospital stay. Recurrence rates are found to be lower than 1%[8]. Altough it is very rare, the repair of recurrent inguinal hernia after Lichtenstein hernioplasty is usually a difficult operation due to the disadvantage of reoperating through dense fibrotic scar tissue around the mesh with the risk of testicular damage and a large number of local haematomas. There is still not a consensus about the best method for the treatment of recurrent inguinal hernias especially after anterior mesh replacement.

Table 1: Demographic data.

Age (Mean): 38 (25-68) Sex (M/F): 36/9
Mean Hospital Stay: 1.6 (1-3)
Mean Operative Time: 44.56 min (30-120)
Type of Hernia: Direct 18, Indirect 13, Other 14
Type of anesthesia: General 44, Regional 1

Tablo 2: Postoperative complications.

Early postoperative complications (%)
Spermatic cord stricture: 0
Injury to vessel: 0
Urinary retantion: 9.09
Wound Infection: 22.7
Postoperative death: 0
Late postoperative complications (%)
Mesh infection: 0
Hematoma: 4.5
Seroma: 4.5
Testicular atrophy: 0

A preperitoneal (posterior) approach, open or laparoscopic seems to be a good option for recurrence after Lichtenstein hernioplasty. Laparoscopic preperitoneal hernia repair is documented as an excellent choice for inguinal hernia repair in numerous studies with its low hospital stay, postoperative pain and recurrence rates, especially when the surgeon is experienced[5]. There are many who believe that it is currently the preferred approach for recurrent hernias from previous open repairs and for bilateral hernias[9]. Studies comparing the laparoscopic approach to open anterior tension-free mesh repair and posterior preperitoneal mesh repair have found less pain and earlier return to normal activities in the laparoscopic group[7-10]. The main advantages of the preperitoneal approach are mesh placement in the preperitoneal space where the hernia is produced and avoiding the disadvantage of reoperating through scar tissue[7].

According to level A evidence from randomized comparative studies, mesh repair is superior to pure tissue approximation repairs[2]. Mesh repairs of inguinal hernias anterior or posterior reduces not only the recurrence rates after primary repair but also the re-recurrences after re-operations[11].

Feliu compared the laparoscopic and open posterior approaches for recurrent inguinal hernias and concluded that both methods are equally effective although hospital stays were shorter in laparoscopic group[7]. However, laparoscopic hernia repair requires a lengthy learning curve, estimated by some to be at least 50 repairs and it is more expensive[13]. Schwab introduced a therapeutic algorithm for recurrent hernia surgery after previous mesh implantation based on analysis of clinical practice. According to this algorithm, Lichtenstein tension-free hernioplasty recurrences should be treated via posterior approach unless the explantation of the mesh is needed because of complications[12]. No mesh was needed to be explanted in our study. The risk of damage to testicular blood vessels, nerves and lymphatics is very low with the posterior preperitoneal repair as it avoids the previously distorted and scarred inguinal canal[6]. There were neither testicular complications nor chronic neuralgia in the present study. Wound infections were observed in 22.7 % patients. They were superficial and healed without mesh removal. As polypropylene is known to be very resistant to infection it was our mesh material of choice.

In conclusion, preperitoneal (open posteior) mesh repair for recurrent inguinal hernia after Lichtenstein hernioplasty is safe, allows anatomic definition of the hernial defect in a field that has not been operated on, is followed by minimal patient morbidity, and has a low rerecurrence rate. It is easy to learn, cheap and should be the general surgeons' procedure of choice.

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