



Original Article

Transabdominal pre-peritoneal (TAPP) laparoscopic inguinal hernia repair: Our experience with 40 cases

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Abstract

Background: Groin hernias are the most common surgical conditions all over the world. Laparoscopic (TAPP) approach has been achieved as the best technique of inguinal hernia repair due to less post-operative pain, earlier return to activity and fewer wound complications.

Objectives: To share our experience with Transabdominal preperitoneal (TAPP) hernia repair and its outcome.

Methods: This prospective study was performed in Shaheed Suhrawardy Medical College Hospital between January 2016 to December 2017. Forty male patients with inguinal hernia were included in this study. Data was collected in a proforma regarding demographic and baseline characteristics, operative time, outcome of patients and were analyzed in tabulated form.

Results: Total 40 patients were included in our study. Age ranged from 20-60 years (mean age \pm SD 38.88 \pm 10.92 years). The maximum duration of TAPP hernia repair ranged from 100-120 minutes (mean \pm SD 109 \pm 16.3 minutes). Post-operative complications were severe pain (10%), infection (5%), scrotal oedema (5%).

Conclusion: Laparoscopic TAPP hernia repair is associated with satisfactory short- and long-term results.

Key words: Inguinal hernia, Laparoscopy, TAPP hernia repair.

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Introduction

Inguinal hernias are common and surgical repairs of inguinal hernia remains one of the most common operations in general surgery. With gaining experiences in laparoscopic surgery, laparoscopic inguinal hernioplasty was first described by Ger¹. Laparoscopic preperitoneal (TAPP) repair was a revolutionary concept in the hernia surgery and was introduced by Arregui et al² and Dion and Morin³ in the early 1990s. TAPP can be performed in any type of hernia even in complicated cases (strangulated hernia). Relative contraindications are the large inguino-scrotal hernias and history of radical prostatectomy. Different comorbidities (eg, heart failure, chronic respiratory disease) are

contraindicated for general anesthesia and as consequence, the TAPP^{4,5}. The ideal method of hernia repair should be simple to perform, easy to learn, have a low rate of complications and recurrence, cause minimal discomfort to the patient during the post-operative period and require a short period of convalescence⁶. Laparoscopic inguinal hernioplasty have claimed several advantages over open repair: less postoperative pain, reduced recovery time with earlier return to full activity, fewer wound complications and improved cosmesis⁷. Furthermore when repairing recurrent hernias, it does offer an advantage of dissection in a previously non damaged area. Bilateral hernias are repaired without extra incision and there is rapid recovery⁶. The aim of this study was to determine the outcome after transabdominal preperitoneal (TAPP) hernia repair and sharing our experiences.

Materials and methods:

This was a prospective study conducted over 40 patients of inguinal hernia treated with laparoscopic (TAPP) hernia repair, from January 2016 to December 2017 which included a minimum of 2 year of follow up, in the Surgery Department of Shaheed Suhrawardy Medical College Hospital. Male patients above 18 years of age with Unilateral inguinal hernia were included in this study. Female patients, Patient with bilateral hernia, Patient unfit for laparoscopic hernia repair under general anaesthesia, Recurrent, obstructed and strangulated hernias were excluded from this study. There were no ethical problems, informed consent of patient was taken. Diagnosis of inguinal hernia was established through history and complete clinical examination. After taking consent for the procedure the patient was investigated thoroughly. Laboratory tests and imaging included tests were done for all patients. Imaging includes chest X-ray and abdominal ultrasonography (to see any intraabdominal pathology). After operations patients were observed for any complications such as haematoma, wound sepsis, post-operative pain and its severity during their stay in the hospital. Patients were discharged when mild pain controlled with oral analgesics, normal bowel and bladder habit, no sign of haematoma or sepsis and they resumed their normal daily activities. During discharge, they

were advised to come after 2 weeks (1st follow-up), 6 months (2nd follow-up), 1 year (3rd follow up) and 2 years (4th follow-up) of surgery. All the data were collected and analyzed and the results were established in a tabulated form.

Result

Table I

Age distribution of patient (years) (n=40)

Age group	TAPP	Percentage	Mean \pm SD
20 - 30	10	25%	38.88 \pm 10.92
31 - 40	14	35%	
41 - 50	8	20%	
51 - 60	8	20%	

Table II

Diagnosis of different hernia (n=40)

Diagnosis	Laparoscopic (TAPP)	
Percentage		
Right direct hernia	7	17.5%
Left direct hernia	5	12.5%
Right indirect hernia	18	45%
Left indirect hernia	10	25%

Table III

Operative time (n=40)

Duration of surgery(min)	TAPP	Mean \pm SD
60 – 80	2	109 \pm 16.3
80 -100	8	
100 -120	20	
120 -140	10	

Table IV

Pain score (n=40)

Post operative pain (visual analog score)	TAPP	Percentage
<3 (mild)	26	65%
3 – 6 (moderate)	10	25%
>6 (Severe)	4	10%

Table V
Results of follow up (n= 40)

Results	No. of patient	Percentage
Infection	2	5%
Scrotal oedema	2	5%
Chronic pain	1	2.5%
Recurrence	0	0%

Discussion

Surgical repair of inguinal hernia remains a common operation in general surgery. No consensus has been achieved on the best surgical technique of inguinal herniorrhaphy.

Total 40 patients were included in this study. Inguinal hernia was more common in younger patient in this study and it was 35% between 31-40 years age group, youngest was 22 years, eldest was 57 years, mean±SD in years 38.88 ±10.92. Bahram MAL showed age of patients, mean±SD in years (38±12.7)⁸. In comparison between right and left inguinal hernia among the 40 cases, 25 (62.5%) were right and 15 (37.5%) were left inguinal hernia. This study also showed indirect inguinal hernia were 28(70%) and direct inguinal hernia were 12(30%). In adult males, 65% of inguinal hernias are indirect and 55% are right sided⁹.

This study revealed that maximum operation time was 100-120 minutes that was 20 cases, lowest time was 64 minutes, highest 135 minutes, mean time with standard deviation in minutes was 109 ±16.3. Shivakumar et al shoed the mean operative time was 110 minutes for laparoscopic TAPP hernia repair¹⁰.

In our study post-operative pain (visual analogue score) was mild pain 65%, discomforting 25%, and only distressing 10%. Another study showed 30% with a score of <3 (mild pain), 50% with a score of 3-6 (discomforting) and 20% with a score of >6 (distressing)¹⁰.

In this study the findings of different complication after 40 cases of hernia repair showed infection 5%, scrotal oedema 5% and chronic pain 2.5% and no recurrence within 2 years of follow up. Shivakumar et al showed that there were 7 patients with minor complications in laparoscopic TAPP group (35%): haematoma (20%), seroma(15%)¹⁰. The perceived advantages of the hernia repair over the open repair

are the reduction of post-operative pain and early return to normal activities. Several studies and this study using pain scores have validated this advantage with low levels of pain^{11, 12, 13, 14}. Also TAPP patient have lower wound complications and minimal surgical trauma. Tzovaras G, Symeonidis D et al showed one patient (1.07%) scrotal haematoma, one patient (1.07%) trocher site infection, two patients (2.1%) were diagnosed with an operation related orchitis while 31 patients(33%) developed symptoms of urinary retention. At a median follow up of 35 months (range 14-59), four patients(4.3%) were diagnosed with a recurrence, while 89% of patients reported satisfied from the procedure in the long-term.¹⁵

Conclusion

Laparoscopic TAPP hernia repair for the inguinal hernia is associated with low rate of post-operative morbidity and recurrence in experienced hand. Accuracy in dissection is also a good indicator to improve the outcome of laparoscopic transabdominal preperitoneal (TAPP) hernia repair.

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