Comparison of Open Lichenstien Mesh Repair and Transabdominal preperitoneal (TAPP)

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Abstract—

Background:

Laparoscopic Transabdominal preperitoneal [TAPP] repair of inguinal hernia has become more popular in recent years as minimally invasive surgery is getting hold in surgery. Although controversy still exists about the most effective inguinal hernia repair. The aim of this study was to compare the common complications of open lichenstien repair and TAPP.

Method

Between Oct 2018 to Oct 2021 patients with unilateral inguinal hernia and ASA grade 1&2 were selected to be included in the study in outpatient department and randomized prospectively into group-1 (TAPP repair), and group-2 (lichenstien open mesh repair).

Results:

A total of 80 patients were included in the study. Male 76 and Female 4. Age range was 24 to 68 years. Primary inguinal hernias were present in 68 cases while recurrent in 12. Post-operative pain was more in Liechestien group. Scrotal swelling was most common complication noted in group-2. Operative time was more in TAPP, 90 minutes as compared to 55 minutes in lichenstien group. Recurrence was more in group -2. Overall complication rate in group -2 was 14(17.5%) and in group -1 it was 2(2.5%).

Conclusion:

TAPP is a safe and effective alternative to open surgery with less complication and recurence rate. However, it has more operative time and steep learning curve.

Keywords: TAPP, inguinal hernia, lichenstien, complication.

I. INTRODUCTION

Inguinal hernia repair is one of the most common surgical procedures performed all over the world and it has evolved over the years from tissue repair to Darning to mesh repair.[1] Liechestien mesh repair was gold standard technique for quite a long time till the introduction of laproscopy. More recently with the popularity of minimally invasive surgery, surgeons are becoming more and more inclined towards the laproscopic approach.[2,3]

Laproscopic inguinal hernia surgery has started in 1990s and since then has been adopted with great fervor by the surgeons all over the world.[4] There are different laproscopic approaches to the inguinal hernia like TAPP, TEP, IPOM. IPOM has recently fallen from favour as a procedure of choice for inguinal heria but TAPP and TEP has proved to be effective day by day.[5,6] Although laproscopic surgery has many advantages over open it has disadvantages also. The learning curve is very steep and surgery time is almost double to open.[7]

TAPP is a well standardized procedure for inguinal hernia repair and its effectiveness is increased even more when it comes to the bilateral hernia and in case of recurrence if anterior repair has failed.[8,9] Adherence to the principles of minimally invasive

surgery and a thorough knowledge of the local pre peritoneal anatomy i.e myopictineal orifice, use of proper size mesh has largely eliminated the adverse events associated to the TAPP.[10]

The purpose of this study is to compare the two procedure, TAPP vs Open Lichenstien mesh repair in terms of duration of surgery, complications, recurrence rate.

II. MATERIAL AND METHODS

This study was conducted in the Surgical unit C of Hayatabad medical complex Peshawar from 1st Oct 2018 to 30th Oct 2021. After taking approval from the hospital ethical committee a total of 80 patients from age 24 to 70 years were included in the study through the OPD. Patient with bilateral hernia, obstructed hernia, presence of infection and those unfit for anesthesia were excluded from the study.

All the patients were divided in to two groups, A –TAPP and B- Open lichenstien via simple randomization with a computer. Before the procedure informed written consent and pre-operative anesthesia assessment done. General anesthesia was given to all patients and operated by the surgeons with more the 5 years of experience of both open and laproscopic surgery. Follow up period was one year.

III. RESULTS

Out of the 80 patients 76 were male and 4 were female. Demographic characteristics and comorbid conditions of both the groups were almost equal. Postoperative pain was significantly more in Lichenstien group. Complication rate was more in Group–2 (17.5%) as against 2.5% in Group -1 (Table 1). Scrotal swelling was most common complication noted in Lichestien group 4(5%) followed by Wound infection 3(3.75%). Three patients presented with recurrence within 6 months in group B. No recurrence noted in TAPP group. Duration of surgery was more in TAPP group 90 minutes.

TABLE 1
POSTOPERATIVE COMPLICATIONS

Complications	TAPP-1	Lichenstein-2
Scrotal swelling	0	4
Wound infection	0	3
Mesh infection	1	2
Chronic pain	1	2
Hernia recurrence	0	3
Total	2 (2.5%)	14 (17.5%)

IV. DISCUSSION

Past 10 years has seen the introduction of many open mesh and laproscopic techniques in inguinal hernia surgery. It has increased the interest of the surgeons in the groin hernia surgery.[11]

Although open liechenstien mesh repair and TAPP both have proved to be effective in the management of inguinal hernias, optimal surgical approach still remains controversial. TAPP has the advantage of less postoperative pain, shorter hospital stay and early return to work it has the disadvantage of longer operative time and steeper learning curve.[12,13] In the same way liechenstien repair has the disadvantage of more post op pain, long visible groin scar and delayed return to work.[14]

In our study the baseline characteristics in both the group were almost similar. Regarding co- morbidities two patient in 1 group were diabetic while 3 in 2. 10 patients were hypertensive in A while 9 in B. Immediate post op complications were more in group -2, like post op pain, hematoma, seroma, scrotal swelling and wound infection. Most of these complications are related to groin incision, they were common in open group -2. Recurrence is reported to be from 0% to 4% and in our study it was 0 % in TAPP while 3.75% in liechestien group.

Acute pain in the immediate postoperative period is common after any surgery.[15,16] However the intensity varies as recorded by visual analog pain scoring. In this study pain was more pronounced in group-2 requiring analgesics. Chronic pain occurred in 1 patient in group-1 and in 2 patients in group-2. The reason for this may be as infection, hematoma, and seroma formation

is more common in group 2, they may contribute to more pain. This also explains to the increased length of hospital stay in group-2 (2.5 days). As TAPP is associated with a steeper learning curve, initially the duration of surgery was much higher than open repair. However with experience and better understanding of the myopectineal orifice and the critical view of safety and use of takers the duration of surgery has reduced significantly.

V. CONCLUSION

This study confirms the safety and effectiveness of TAPP approach as compared to open repair. The reduction of operative time, complication and recurrence is correlated with the surgeon experience.

CONFLICT OF INTEREST.

The Authors declares that there is no conflict of interest.

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