

A Comparative Study between Modified Bassini's and Lichenstein's Hernioplasty With Regard To Postoperative Complications and Review of Literature

¹Dr.A. Sai Datta, ²Dr.S.V.Subba Rao, ³Dr. R. Sai Krishna,

¹Associate Professor Dept. Of General Surgery Katuri Medical College & Hospital, Guntur.

²Associate Professor Dept. Of General Surgery Katuri Medical College & Hospital, Guntur.

³Senior Resident Dept. Of General Surgery Katuri Medical College & Hospital, Guntur

Abstract:- Hernia Surgery is one of the most common surgical procedures done day to day practice. Even though some procedures are Gold standardized world wide, but still majority of high volume centres there is lack of standardization. Inguinal hernia is a common problem, Any method which reduces the recurrence rate as well as lowers the morbidity and post-operative complication rate, must however be considered superior. The common aim in treatment of hernia is to restore the anatomical integrity of the disrupted tissue, performing a strong repair and to prevent further recurrences. In this study we analyse the post operative complications following Modified Bassini's repair (n=73) and Lichtenstein's hernioplasty (n=77)

Keywords:- Inguinal hernia, Modified bassini's, Lichstein's, Recurrence

I. Methodology Source of Data.

Patients admitted Electively in the surgical wards as in all the units of Katuri medical college and Hospital, Guntur were included in the study without bias on a serial basis. This is a randomized prospective study comprising 150 patients with uncomplicated Inguinal Hernia over a period April 2012 to April 2015.

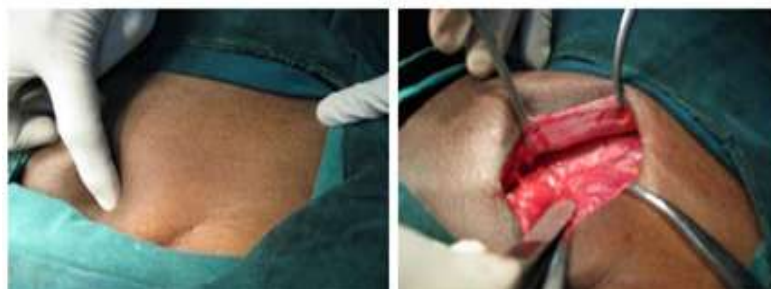
Method of collection of data

Inclusion Criteria: All patients coming to the surgical outpatient department at Katuri medical college and Hospital Guntur, with inguinal hernia.

Exclusion Criteria: Children presenting with congenital inguinal hernia, patients with Femoral hernia, recurrent inguinal hernias and complicated inguinal hernia. Patients were subjected to either Modified Bassini's Repair (n=73) and Lichtenstein's mesh hernioplasty (n=77) by the affordability of the patient to buy the mesh. All patients were given pre-operative prophylaxis with Inj. Cefotaxime 1gm IV. Only spinal anesthesia was administered to both the cohorts. Classical incision was used i.e., 2.5 cms above and parallel to the medial three fifths of the inguinal ligament and

Modified Bassini's repair - After making in the groin crease external oblique aponeurosis was identified and divided. Sac was separated from cord structures and was dealt appropriately depending on the type of hernia. Conjoint tendon was sutured unto the inguinal ligament with polypropylene '1' interrupted sutures. (n=73)

Lichtenstein repair - After dissection of the sac a polypropylene mesh was placed on the defect and fixed to the inguinal ligament below and to the conjoint tendon above with '2-0' polypropylene. (n=77) Postoperatively, I.V Diclofenac 50 mg was given as analgesia for 48 hours to both. Pre & Post operatively Inj Cefotaxime 1gm IV, was given to both the cohorts.



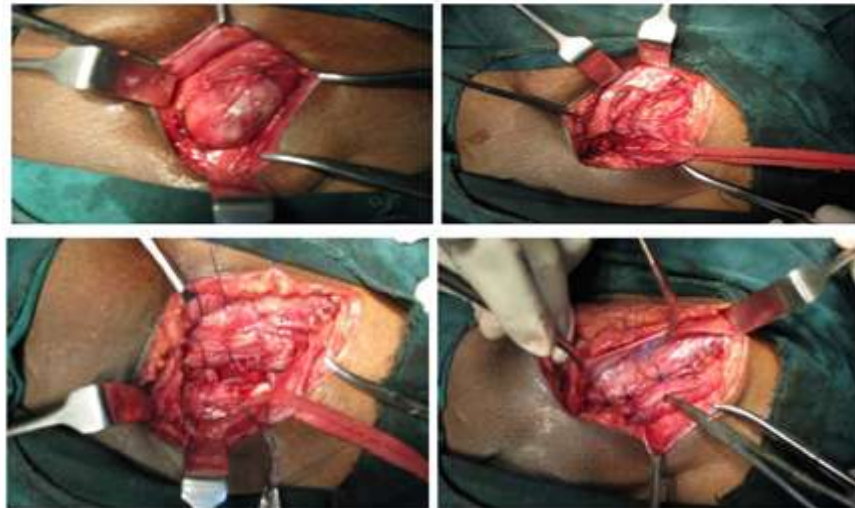


Figure 1 Modified Bassini's repair

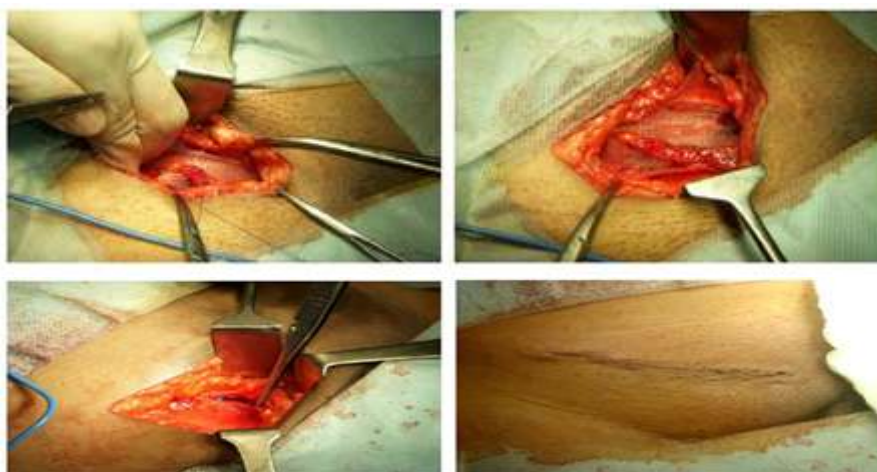
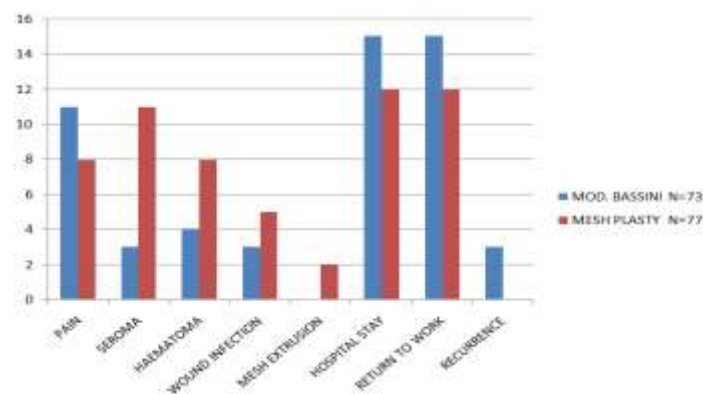


Figure 2 Lichtenstein's hernioplasty

II. Results

Post operative complications	Anatomical repair N=73	Mesh Hernioplasty N=77
PAIN	11 (15.06%)	8 (10.38%)
SEROMA	3 (4.1%)	11 (14.28%)
HAEMATOMA	4 (5.4%)	8 (10.38%)
WOUND INFECTION	3 (4.1%)	5 (6.4%)
HOSPITAL STAY (IN DAYS)	7	7
RETURN TO WORK (IN DAYS)	15	12
RECURRENCE	3 (4.1)	NIL



III. Discussion

Pain

Residual neuralgia following herniorrhaphy represents the most vexing complication in the inguinal region. In some cases the postoperative pain can be debilitating requiring reexploration and division of the nerves. In the present study only immediate post operative pain was evaluated. 10.38% of patients who had undergone Lichtenstein's mesh hernioplasty complained of pain whereas 15.06% of patients who had undergone modified

Bassini's repair complained of pain. Significant tension in tissues by the suture line in Bassini's repair may be the cause of pain. In a previous study by Callesen et al 54 showed that there was no significant difference in pain following Lichtenstein's mesh hernioplasty or modified Bassini's repair (36% and 28%). Here also p-value was not significant. The significantly higher percentage of patients complaining of pain in the present study may be due to the pain which accompanies any surgery (no scoring system was used to quantify pain and only complaint by the patient was taken into consideration) and individual variation with threshold level of pain. The study needed to take into consideration long term chronic and persisting type of pain during follow-up to assess pain intrinsic to the technique.

Haematoma

Bleeding from either artery or vein may result at all anatomic levels during an inguinal repair resulting in haematoma formation. In our study 8% and 5.4% of patients undergoing Lichtenstein's mesh repair and modified Bassini's repair developed haematoma respectively. The difference was insignificant. In a study by Bholla Singh Sidhu³³ et al 4% of all patients developed haematoma. Compared with that study the present study has a slightly higher rate, but statistically is insignificant.

Seroma

Seroma represent exudates (e.g. solutes, water, plasma proteins including fibrin and neutrophils). Seroma results from the trauma of scalpel, scissors, cautery and foreign bodies. In the present study 14.28% of patients who had undergone Lichtenstein's mesh hernioplasty developed seroma and 4.1 of patients who had undergone modified Bassini's repair developed seroma. In a study by T.Faish et al (2000)⁴⁸ 2% of patients developed seromas in patients who had undergone mesh plug hernioplasty. This discrepancy in the percentage between the two studies may be attributed to the criteria used to define seroma. In our study all cases with ooze from the incision site were included. In the other study only those cases which required drainage were included.

Infection

Infection represents a dreaded complication for all types of surgeries and it is no different in inguinal hernia surgeries. Inguinal hernia surgeries complicated by infections have a higher rate of recurrence as the repairs are destroyed along with the tissues. In the present study 6.4% of cases who had undergone Lichtenstein's mesh hernioplasty and 4.1% of patients who had undergone modified Bassini's repair developed post operative wound infection. In a study by Bholla Singh Sidhu et al wound infection rate was 6%. Further more it is important to recognize superficial from deep infections as deep infections are ominous. The rate of infection is influenced by the duration of surgery as is seen in the study quoted by Bendavid (1998)⁴¹. In operations which lasted 30 minutes or less, 2.7% of infection was reported and when it was 90 minutes, 9% of infection rate was recorded.

Hospital stay & return to work

In the fast paced life of today, duration of hospital stay may be the determining factor when the rates of other complications are comparable including recurrence. In our present study the mean hospital stay in case of modified Bassini's repair was 7 days and in case of Lichtenstein's mesh hernioplasty it was 7 days. 5 patients who underwent modified Bassini's repair and 3 patients who underwent mesh hernioplasty stayed for more than 7 days in the hospital. Quicker return to work was seen in Lichtenstein's hernioplasty (12 days) compared to delayed 15 days in modified Bassini's repair. Three studies quoted by Martin kuzer et al (1998)³² shows that there is not much difference between the conventional tissue repair and Lichtenstein's mesh hernioplasty with regard to return to normal work and also in all the other short term complications.

Recurrence

The ultimate test of any hernia repair is the recurrence rate. There are studies plenty which have determined the recurrence rate for different techniques. Bendavid R (1998)⁴¹, after a survey of literature quoted the following recurrence and re-recurrence rate in different techniques. In the present study there was 0 % recurrence in Lichtenstein's mesh hernioplasty group and 3% in modified Bassini's group. The study did not include recurrent hernias. A 10 year review conducted by Janu, Sellers, Mangiante (1997)⁵⁵ to compare mesh

versus non-mesh repairs reported 0.3% recurrence in mesh hernioplasty and 3.5% in non-mesh group. The p-value was insignificant ($p < 0.01$) ($n = 879$). In the study it was concluded that the results following mesh hernioplasty are superior to non-mesh repairs, with not much difference in the other early post operative complications. A four year study Csontos et al. (2005)56 of 714 cases had 16 recurrence (2.04%) following Lichtenstein's mesh repair. The good results indicate that Lichtenstein's mesh repair is better than the Bassini's. Many studies have shown conventional tissue repair comparable with that of mesh hernioplasty. This may be due to the bias introduced by the skill of the surgeon. This is not so in mesh hernioplasty which gives consistent good result whether the surgeon is a beginner or an experienced. A study by Amid P K (2005) 57 has shown that mesh repair is superior to pure tissue approximation repairs. A study by Nathan J D and Pappas T N (2004)58 concluded that Lichtenstein's mesh repair is the most frequently performed inguinal hernia operation with recurrence rate of less than 1%. Forte A, Gallinaro L S et al.59 stated that mesh repair of inguinal hernia is more effective than conventional Bassini's repair. Mesh repair allows optimal results both for the surgery point (easiness of the technique, repeatability, less invasivity, scanty incidence of recurrence, low frequency of postoperative complications) and in economic terms, allowing an early mobilisation of the patients. In the present study the maximum follow-up period was 24 months with different patients being followed for different length of time. It is seen that follow up is inadequate as is highlighted by the following comment by F. Andrew Mosfesis et al (1996)60.

“In spite of the extensive use of mesh in the last 15 years, I still am not sure that we know what the effect of a piece of mesh implanted for periods of 30, 40, 50 years will be in substantial populations numbering in thousands regarding the recurrence rate of hernia repair. These figures are at best factitious. As such we are looking at long term recurrence of around 15% and it seems absurd to talk about figures of 1% and 2%. The truth of the matter is that apparently most patients who have recurrence go to another surgeon to have them repaired”. These results show success of hernia surgery depends primarily on the technique of repair and the experience of the surgeon. The combined recurrence rate may fall well below 0.1% with specialization and with proper selection of patients and technique tailor made for individual patients.

IV. Conclusion

- Post operative pain was almost the same following either surgery, but patient undergoing mesh repair had pain of less intensity.
- Post operative haematoma occurrence was almost of same magnitude following either surgery.
- Occurrence of seroma following mesh repair was significantly more than Lichtenstein's hernioplasty
- Post operative wound infection was slightly more following Lichtenstein's hernioplasty
- The average duration of hospital stay for patients was same for both group
- There were no recurrences in patients who had undergone Lichtenstein's hernioplasty and 3 (6.8%) recurrences in patients who had undergone modified Bassini's repair, over the period of study.
- Quicker return to work was seen in patients who underwent Lichtenstein's hernioplasty

Though the present comparative study does not show any distinct advantages of one repair over the other, Lichtenstein's mesh hernioplasty gives superior results compared to modified Bassini's repair with regards to recurrence. However, the sample size and the follow up period in the current study being relatively short, a larger study sample and a longer follow up study may be needed before any further conclusions can be made.

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