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Comparative Study of Management of Bilateral Inguinal Hernia By Bilateral Lichtenstein's Hernioplasty and Stoppa's Procedure

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Abstract:
Aim: *To evaluate the advantage of using a single incision by Stoppa's procedure for Bilateral inguinal hernia in comparison with two incisions on either side by Lichtenstein's hernioplasty.*
Methods: *Forty six cases of Bilateral inguinal hernia admitted in the department of General surgery in madurai&thoothukudi medical college and hospitals. Two groups were made. One group underwent single incision Stoppa's procedure and the second group underwent Bilateral Lichtenstein's hernioplasty and the results were tabulated and evaluated.*
Results: *The postoperative results were tabulated and evaluated. In comparison to Bilateral Lichtenstein's hernioplasty , Single incision Stoppa's procedure was found to have increased operative time , increased incidence of postoperative pain and hence Lichtenstein's hernioplasty has been advocated as a better procedure for treatment of Bilateral inguinal hernia in our study.*
Conclusion: *Stoppa's procedure has higher incidence of seroma formation than Lichtenstein's hernioplasty but due to presence of a drain the incidence of wound infection relatively lesser than Lichtenstein's hernioplasty. Less pain in the immediate postoperative period and early return to work are the advantages of Lichtenstein's hernioplasty. Recurrence in the management of bilateral inguinal hernia is very rare with both Bilateral Lichtenstein's procedure and Stoppa's procedure.*
Keywords: *lichtenstein , hernioplasty , stoppas , mesh , postoperative*

I. Introduction

Definition of hernia is the protrusion of a viscus or a part of a viscus through an abnormal opening in the walls of its containing cavity. The word hernia is derived from the Latin word meaning "rupture". The ancient Greeks were well aware of inguinal hernias and in greek Hernia means an "offshoot , bulge or budding " The definitive surgery for inguinal hernia seems to have first recognized by Marcy , a student of Joseph Lister , who described the importance of transversalis fascia in performing the internal ring closure. He used carbolised catgut to close the internal ring. Eduardo Bassini , an Italian in 19th century was clear that there were two reasons which were responsible for the failure of the procedures performed for hernia repair. The one later non anatomic repair and the larger internal ring through which the spermatic cord passes were the two reasons according to him. He described the triple layer technique incorporating the internal oblique and transversus abdominis muscle and transversalis fascia into a triple layer and approximating it with the shelving edge of inguinal ligament.

The next significant contribution was introduced by Shouldice in 1945 describing the imbrications of the full thickness of transversalis fascia to the inguinal ligament. This is followed by reinforcement of this repair by external oblique muscle and aponeurosis to the conjoint tendon. The myopectineal orifice or musculo pectineal orifice was first elucidated by a French surgeon , Fruchard which consists of medial , lateral , and femoral triangles , which are potential sites for groin herniation. Stoppa and Rives , who were students of Fruchard , developed the posterior approach or preperitoneal approach to hernia repairs. The commonly performed laparoscopic techniques TAPP and TEP follows the principle of placement of mesh pre peritoneally originally described by Stoppa. Because of long learning curve this method is not followed by many surgeons. This is the ideal method for repair of bilateral inguinal hernia and in management of recurrent inguinal hernia.

Tension free repair was standardized by Lichtensteins , which still the "gold standard" in the management of unilateral inguinal hernia repair. Lichtenstein used a mesh to cover the posterior abdominal wall and fixed it over the conjoint tendon and the shelving edge of inguinal ligament. He tailored the mesh to accommodate to the cord structures. In this laparoscopic era Transabdominal preperitoneal repair and the Totally extra peritoneal repair are the standard procedures being followed in many of the centres. Hernias can occur anywhere in the body , but it is common in the external abdominal wall , in particular , the inguinal region. Some of the regions where hernia occurs commonly in the abdominal wall are – inguinal region , femoral region , umbilical region , linea alba , sites of previous incisions. The inguinal hernia , femoral hernia and umbilical hernia constitutes 75% of the cases. The inguinal region which is lying between the lower

abdomen and the thigh is the weakest point in the abdominal wall where hernia commonly occurs. Hernia can occur in any conditions that increases the intra abdominal pressure. In childhood , whooping cough is the important predisposing cause. In adults powerful muscular effort produced during chronic cough and while straining during micturition and defeacation may precipitate a hernia.

II. Background And Purpose Of The Study:

Inguinal hernias occurs in all age groups and in both sexes. It is more prevalent in males. It is 25 times more commonly encountered in surgical field in men rather than women. Femoral hernia is more common in women as compared to inguinal hernia. Regardless of gender , inguinal hernia of indirect type is the more common type. About 75% of hernias occur in the groin region , of which two thirds of them are found to be indirect hernia. Our aim is to compare the conventional Lichenstein's hernioplasty to a single incision Stoppa's procedure for the treatment of Bilateral inguinal hernia and evaluate the outcomes of both procedure and to declare the better procedure for the treatment of bilateral inguinal hernia. With the results of both procedures , we will statistically determine the post operative outcomes of both procedures and compare them with each other to reach to a conclusion of a single best operative procedure for the treatment of Bilateral inguinal hernia.

III. Materials And Methods

Study Area :
Madurai&Thoothukudi Medical College Hospitals.(Mmch&Tkmch) Study Population : Patients Admitted In Mmch&Tkmch With A Diagnosis Of Bilateral Inguinal Hernia By Clinical And Radiological
Methods.
Inclusion Criteria:

1. All patients with Bilateral inguinal hernia in the age group of 20 to 60 years were included in this study.

Exclusion criteria:

1. Recurrent Inguinal hernias
2. Pediatric age group and patients below 20 years of age.
3. Patients with congenital abdominal wall weakness.
4. Unilateral inguinal hernias

Study Period:
12 Months.From March 2015-Feb 2016 Sample Size: 46.All patients eligible by inclusion and exclusion criteria are to be included in the study.

IV. Study Design

A Comparative study is to be conducted on patients admitted in MMCH&TKMCH for Bilateral Inguinal hernia surgical management. Informed consent will be taken from each respondent.

Methodology

The data was collected in a prepared proforma. The diagnosis of Bilateral inguinal hernia was made by clinical examination and by ultrasound abdomen. The preoperative evaluation included history and clinical findings. Routine laboratory investigations like haemoglobin , urine examination , random blood sugar , blood urea and serum creatinine , HIV , HbsAg were done. X-ray and ECG were done for patients above 40 years for anesthetic evaluation. Preoperative treatment included correction of anemia , weight reduction if obese , improvement of nutritional status , treatment of respiratory infection if any , abstinence from smoking / alcohol if any , advice regarding breathing exercises. The type of anesthesia used was spinal anesthesia and general anesthesia in selected patients. A single dose of preoperative broad spectrum antibiotic given followed by the same for 3 days postoperatively. Analgesics injection diclofenac sodium was given post operatively for two days and later if necessary. Postoperative care and complications – After surgery all patients were monitored carefully for pain , bleeding , paralytic ileus , seroma , hematoma , wound infection and wound gaping. Pain was assessed using verbal graphic rating scale. A wound infection ranged from minimal discharge of pus from a single cutaneous suture to extensive and invasive process requiring lengthy hospitalization and intravenous antibiotics. Bleeding was defined as subcutaneous hematoma which can result from careless ties or cautery.

Discharge – the patients were discharged when fit and asked to come for regular follow up after 15 days , 1 month , 3 months , 6 months , 1 year. Different patients were followed up for different periods with many dropouts. The patients were advised to return to pre hernia lifestyle except lifting heavy weights. All were followed up for post operative pain , interference with activities of daily living , use of analgesics and recurrence.

V. Discussion

Lichtenstein's hernioplasty is the gold standard technique for unilateral inguinal hernia repair. This still holds good in this laparoscopic era. For bilateral inguinal hernia , whether this is true or not is a controversy. So this study gains importance which gives a result of management of bilateral inguinal hernia by Bilateral lichtenstein's hernioplasty and stoppa's procedure. The former is compared with Stoppa's procedure because in many studies it is proven that this procedure is the ideal method for bilateral inguinal hernia in experienced hands. So this study has compared the results of its own with some standard comparative studies. In this study , 24 patients with bilateral inguinal hernia had undergone Bilateral Lichtenstein's hernioplasty. 22 patients underwent Stoppa's giant prosthetic replacement of visceral sac procedure on either sides.

Among the 24 patients with Bilateral Lichen's hernioplasty performed , 4 patients had seroma on both sides and 3 patients developed seroma on only one side. This amounts to 29.06% of cases who developed seroma in bilateral Lichtenstein's hernioplasty. All these patients were treated conservatively and started on broad spectrum antibiotics. Of these seven cases with seroma four patients had developed surgical site infection , who were managed by secondary suturing. Among the 22 patients who underwent Stopp's procedure , 8 patients developed seroma in the postoperative period. About 30.9% of patients have developed seroma after Stoppa's procedure. The suction drain which is placed superior to the mesh on an average , removed on 3rd or 4th postoperative day. This had prevented the development of seroma and wound infection and were managed by secondary suturing. This explains the importance of placement of drain in Stoppa's procedure. In this study 9.09% of cases developed wound infection after Stoppa's procedure comparing to 16.67% in Bilateral Lichtenstein's hernioplasty.

Tension free and early discharge from hospital and early return to work are the aims of hernia repair. Of patients who underwent Bilateral Lichtenstein's hernioplasty , 17 patients were discharged on fourth postoperative day , three patients on 5th post operative day and four patients on 10th postoperative day. Out of 22 patients who had undergone Stoppa's procedure , fifteen patients were discharged on 5th post operative day , five patients on 7th post operative day and two patients of 10th postoperative day. Comparison of pain in the postoperative period in the hospital say reveals 8 patients after Lichtenstein's repair had pain score of 3-4 and 7 patients in the group of Stoppa's procedure. Three patients following Stoppa's procedure had pain score of 5.

In this overall study no single patient following Bilateral Lichtenstein's hernioplasty and Stoppa's procedure has had recurrence. On an average we were able to follow the patients upto 1 year in the post operative period by advising them review periodically. Chronic inguinodynia was a follow up complication , we were able to make out in this study which was not initially added in our comparative study. Interestingly only two patients during their follow up after Stoppa's procedure had complained of pain in the groin region. This is the follow up status in the first three months of post operative period. On the other hand , 7 patients had disturbing groin pain even after three months of post operative period following bilateral lichtenstein's hernioplasty. Another important aspect that is to be kept in mind is the repair of inguinal hernia on either sides at the same setting is the operating time. On an average in bilateral Lichtenstein's repair , the mean operating time was found to be one hour and fifteen minutes. Comparing this with Stoppa's procedure we had learned that to master Stoppa's procedure takes time. Initially the procedure took two hours , later were able to reduce the operating time by one hour and fifteen minutes. This is important to be mentioned because whenever the patient had excessive seroma and increased postoperative pain , retrospectively it was found that the time taken to complete the surgery was more. Since Stoppa's procedure need technical expertise , in the initial period of study the operative time was long. On the contrary Lichtenstein's procedure has a simple learning curve and easily reproducible. In our study all the patients who had undergone bilateral inguinal hernia repair were found to be males. No female had come during our study period with bilateral inguinal hernia.

VI. CONCLUSION

In this study, Bilateral inguinal hernia is common in male population. Comparing to Lichtenstein's procedure , seroma is common in Stoppa's procedure according to this study and conservative management found to be effective in the management of seroma after these hernia procedures. Use of Drain in Stoppa's procedure found to be crucial in the prevention of development of seroma and hence the wound infection in this study. Wound infection is relatively common in Bilateral Lichtenstein's procedure according to this study. Less pain in the immediate postoperative period and early return to work are the advantages of Bilateral Lichenstein's procedure according to this study. This study explains that recurrence in the management of Bilateral inguinal hernia is very rare with both Bilateral Lichtenstein's procedure and Stoppa's procedure.

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