ORIGINAL ARTICLE

Complications of Onlay and Sublay Mesh Plasty in Ventral Abdominal Hernia Repair

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ABSTRACT

Objective — *To find out the frequency of seroma, wound infection and wound disruption in patients of ventral abdominal hernia operated with onlay and sublay mesh plasty.*

Study design — *Cross sectional study.*

Place & Duration of study — *Department of General Surgery Dow University of Health Sciences & Civil Hospital Karachi, from January 2010 – December 2014.*

Methodology — *Ventral abdominal hernia patients were selected randomly for the procedure of onlay and sublay mesh plasty. Fifty patients each were operated with either of the techniques. Postoperatively patients were observed for the complications; seroma, wound infection and wound dehiscence. All patients were followed for a period of two weeks.*

Results — *A total of one hundred patients were enrolled. Fifty of them had onlay and fifty underwent sublay mesh plasty for ventral abdominal hernia. There were 18 (18%) males and 82 (82%) females with male to female ratio of 1:4.5. Minimum age was 22 year and maximum 55 year. There were 55 (55%) para umbilical hernia, 14 (14%) umbilical, 14 (14%) epigastric and 17 (17%) incisional hernia. Maximum number of cases of wound infection were noted in onlay mesh plasty group (n=16, 16%) while in sublay group only six (6%) had this complication.*

Conclusion — *Sublay mesh plasty technique for ventral abdominal hernia repair had less frequency of complications.*

Key words — *Ventral abdominal hernia, Abdominal wall hernia, Mesh plasty.*

INTRODUCTION:

Ventral abdominal hernias are common in surgical practice.[1] This term includes inguinal, umbilical, para umbilical and epigastric hernia. Another type of ventral hernia is incisional hernia that occurs in 15-20% of patients undergoing laparotomy.[2] The overall incidence of incisional hernia is slightly higher in the midline laparotomy incision compared with transverse incision.[3]

Hernia surgery is one of the most commonly performed procedures worldwide. Numerous techniques have been described for hernia repair and hernioplasty, but tension free mesh placement is widely used in current practice. Mesh plasty may be of onlay and sublay type.[4] In onlay procedure mesh is placed on the anterior rectus sheath while in sublay type the mesh is placed in between the rectus sheath and peritoneum.[5] Sublay mesh plasty is reported as superior to onlay mesh plasty.[6,7] This study was conducted to find out complications following ventral abdominal hernia repair with onlay and sublay type mesh plasty.

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METHODOLOGY:

This cross sectional study was conducted in the Department of General Surgery Dow University of Health Sciences and Civil Hospital Karachi, from January 2010 – December 2014. Patient of ventral abdominal hernia were selected randomly for the two procedures, onlay and sublay mesh plasty. Fifty patients were included in each group. Standard

surgical technique was used for both the procedures. Drain was placed in all patients over the rectus sheath. Postoperative complications like seroma, wound infection, wound dehiscence were noted. Patients were followed for a period of two weeks.

Data was entered into SPSS version 22. The data was analyzed by computing frequency and percentages for categorical variables while mean and standard deviation were calculated for numerical data. Chi square test was used to calculate the p value. The significance level was set at $p<0.05$.

RESULTS:

Total number of patients was one hundred. These were divided equally into two groups. Male patients were 18 and female 82 with male to female ratio of 1:4.5. Age range was from 22 year to 55 year. Mean age was + 6.574 year. Different types of abdominal hernias operated are given in table I. Complications are given in table II. Wound infection was more commonly seen in onlay mesh plasty (n=16 – 16%- p 0.001) in comparison with sublay technique. The p values for variables seroma and wound dehiscence were 0.005 and 0.001 respectively.

Table I: Type of Hernia

Type	Frequency n (%)
Para umbilical	55 (55%)
Incisional	17 (17%)
Epigastric	14 (14%)
Umbilical	14 (14%)
Total	100 (100%)

DISCUSSION:

Abdominal wall hernia is a common surgical problem in clinical practice. The outcome of the surgery is based not only on the technique used but on the experience of the operator, meticulous dissection, tension free repair etc.[8] Many methods are available to deal with these hernias. Commonly practiced techniques for hernia repair use mesh, which is placed either in a sublay or onlay position. Sublay mesh provides significantly better results than onlay reconstruction in relation to wound infection.[9] Laparoscopic transperitoneal sublay mesh plasty is another method of ventral and incisional hernia plasty.[10,11] Sutureless onlay technique for incisional hernia plasty using fibrin glue alone for mesh fixation is another method.[12] In this study both the positions for placement of mesh were used.

Hernia recurrence and bowel related complications are seen mostly after laparoscopic incisional hernia plasty.[13] Porcine derived acellular dermal matrix is also successfully used in the treatment of complex ventral hernia repair.[14] Frequency of wound infection notice in our study in sublay plasty was 6% which is significantly lower than onlay mesh as reported by another study.[15] Drain has an important role in reducing the seroma and hematoma formation. Drain was used in this series in all the patients as also reported by others.[16]

Prolonged hospitalization is also a risk factor for wound infection for abdominal wall hernia and incisional hernia.[17] Laparoscopic surgery has a low morbidity in old age specially the wound infection. It decreases hospital stay but is expansive as compared to open technique.[18] Hernia can be repaired without mesh when the defect is small or the mesh is not available. The rate of recurrence is such a situation is high.[19,20] Larger and complex ventral hernias can be managed by component separation technique.[21] A new technique for ventral hernioplasty is endoscopic component separation.[22] We used standard open technique for mesh plasty and results were quite encouraging.

CONCLUSION:

Sublay mesh plasty in this study was superior to onlay mesh plasty in terms of less number of complications.

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Table II: Postoperative Complications

Complications	Onlay (n)	Sublay (n)	Frequency n(%)
Seroma	14	08	22 (22)
Wound infection	16	06	22 (22)
Wound Dehiscence	03	01	04 (04)
Total	50	50	100 (100)

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