

The Outcome of a Double Mesh Intra Peritoneal Repair for Complex Central Hernia. A Retrospective Cohort Study

Double Mesh
Intra Peritoneal
Repair for
Complex Central
Hernia

Ameer Ali Khaskeli¹, Ishaque Soomro¹, Farhart Bano¹ and Feeroz Mahar²

ABSTRACT

Objective: The outcome of a double mesh intra peritoneal repair for complex central hernia. a retrospective cohort study.

Study Design: Retrospective study

Place and Duration of Study: This study was conducted at the SMBB Medical College Lyari and Sindh Government Lyari General Hospital, Karachi from January 2016 to January 2018.

Materials and Methods: The data has been collected from previous records for a period of 2 years. There were n=110 patients. All the patients with ventral hernias were included from age of greater than 20years to 70years with both genders included. The patients who were excluded were women with pregnancy, bleeding disorders.

Results: Out of 110 patients enrolled there were 42 males and 68 females. Male to female ratio was 1:1.6. the mean age of patient was 44.82 ±6.29 years Mostly the age range of patients were >50yrs in males and in females <50yrs. The mean BMI of patients were > 30kg/m². There were 30 (27.2%) patients reported with recurrent ventral hernias with associated multiple comorbidities. The n=22 (20%) patients reported with surgical site wound infections which resolved on follow up. No mortality was reported in our enrolled cases.

Conclusion: Double mesh repair is an effective method with an associated decreased recurrence and postoperative complications.

Key Words: Mesh Repair, Ventral Hernia

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INTRODUCTION

Complex ventral hernias account for 11-23% of all laparatomies in US with around 250000, dying to a challenging surgical dilemma¹⁻⁵. Increasing incidence has been reported in US as well as in many recent studies especially among elderly, obese patients undergoing laparatomies 5-10. This increasing burden impacts the quality of life, psychological and social aspects of life. In Pakistan the in min of Complex ventral hernias is 4.25% according to one study in 2016⁶.

Complex ventral hernias usually include recurrent hernias, associated enteric fistulas, infected mesh repairs, parastomal hernias, open wounds, large and massive hernias^{11, 12}.

Around 10% incisional hernias after laparatomies give rise to these abdominal wall defects and thus reoperations^{13,14}. Nowadays around 20-27% laparoscopic approach is preferred however the surgical method of repair is preoperative decision of surgeon^{15,16}. Different other factors like history of previous surgery, trauma, infections, any congenital defects also effect and further it is affected by size, location, depth and surrounding area condition which determines development of ventral hernias.

Formerly the management of ventral hernias involved primary closure of fascial defects. This is corner stone of treatment with improved rates of recurrence from use of tendon free mesh repair which is standard of repair method¹⁷⁻¹⁸. Some studies have shown reduction in recurrence rates after mesh placement to 1-14%^{19, 20}. However the outcome of double mesh repair is dependent on patient's comorbids, abdominal wall thickness and number of surgeries performed. Blair et al in 2015 reported 60.3% patients with recurrent ventral hernias with panniculectomy performed in 34.4% and component separation performed in 24%, wound complications in 13.3%¹². Tagar et al has observed more complications with inlay mesh repair compared to sub lay mesh repair i-e: 8.5%. 4.25% wound infections⁶. The aim of our study was to determine the outcome of a double mesh intra peritoneal repair for complex central hernia in our setup.

¹. Department of Surgery, SMBB medical college lyari Karachi.

². Department of Surgery, Sindh Government Lyari general Hospital Karachi.

Correspondence: Dr Ameer Ali khaskhly, Associate Professor of Surgery, SMBB medical college lyari Karachi.

Contact No: 0341-2696218

Email: drameeralikhaskhly@hotmail.com

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MATERIALS AND METHODS

This study was a retrospective study in institute of SMBB Medical College Lyari and Sindh Government Lyari General Hospital, Karachi. The data has been collected from previous records for a period of 2 years from January 2016 to January 2018. There were n=110 patients enrolled in the study keeping prevalence of 20%. All the patients with ventral hernias were included from age of greater than 20 years to 70 years with both genders included. The double mesh intraperitoneal repair was done. The patients who were excluded were women with pregnancy, bleeding disorders.

Both the open and the laparoscopic method were employed. The method to be employed was decided by surgeon preoperatively by computed tomography and associated comorbid conditions. Intraperitoneal double mesh was placed in external oblique fascia in open surgical method, however in patients with laparoscopic repair method is used mesh is placed intraperitoneally. Some surgeons raise flap of peritoneum and place the mesh and cause closing of peritoneum over the mesh. However, this approach is not used by all surgeons. Patients were followed for postoperative wound infections.

RESULTS

Out of 110 patients enrolled there were 42 males and 68 females. Male to female ratio was 1:1.6. the mean age of patient was 44.82 ± 6.29 years (table 1). Mostly the age range of patients were >50 yrs in males and in females <50 yrs. The mean BMI of patients were >30 kg/m².

There were 30 (27.2%) patients reported with recurrent ventral hernias with associated multiple comorbidities (table 2). Mostly the cause of recurrent hernia was weakened abdominal wall after multiple surgeries, especially among women were repeated cesarean sections in multigravida presenting with incisional hernia and associated obesity BMI of >34 kg/m². While in males there was increasing frequency of smoking and chronic obstructive airway disease and chronic cough which increased weakness of abdominal wall.

The mesh repair was done with polypropylene placed intraperitoneally. Around 22 (20%) patients reported with surgical site wound infections which resolved on follow up. No mortality was reported in our enrolled cases.

Table No. 1: Demographic variables with frequency

Demographic variables	Frequency n=110
Age in years	44.82 \pm 6.29 years
Gender	42: 68
Male: female	1:1.6

Table 2: Postoperative complications with frequency and percentage

Postoperative complications	Frequency (percentages) n=110
1. Wound infections	22(20%)
2. Recurrence of ventral hernia	30(27.20%)

DISCUSSION

Around 11-20% incisional hernias have been reported after laparotomy incisions worldwide¹⁹⁻²¹. In our study there were 30 (27.2%) patients reported with recurrent hernia. Ventral hernias develop due to defect in abdominal wall muscles and therefore include mostly incisional hernias. They are the long-term complications of abdominal surgeries, after laparotomies but also primary ventral hernias like umbilical hernias and epigastric hernias. Around 50% develop in 1-2 yrs of primary surgeries and after 3 yrs, 74% are reported²². Some studies have reported after primary suture repair recurrence rate of 50% which has been reduced after mesh repair¹⁹⁻²².

Double mesh repair is a surgical technique employed to reduce incidence of recurrent ventral hernias. Different reparative techniques have different outcomes. Some studies support double layer, while others report on lay mesh repair to have decreased recurrence rates^{10, 11}. Patient recurrence is affected by associated risk factors⁷⁻⁹.

In our study the mean age of patients was years with female preponderance in development of ventral hernias compared to males. Studies have also found around similar results however gender differences were variable. Afifi et al in his single center retrospective analysis in 2018 found increasing incidence in females 3.5:1 with average age around 49 ± 1.24 yrs¹ mean BMI was also in obese range around 33.6. However, Tagar et al has reported around 64.8% increased frequency in males compared to females with average age of 41 years⁵.

In our study there were 27.2% cases reported with recurrent ventral hernias with associated comorbidities. The surgical site infections were found in 20% cases which resolved after closed follow up. Afifi et al reported 57% patients recurrent ventral hernias with associated comorbidities found in 63% patients. Postoperative complications reported in 38% cases.

CONCLUSION

Double mesh repair is an effective method with an associated decreased recurrence and postoperative complications.

Author's Contribution:

Concept & Design of Study: Ameer Ali khaskeli
Drafting: Ishaque Soomro

Data Analysis: Farhart Bano, Feeroz Mahar
 Revisiting Critically: Ameer Ali khaskeli, Ishaque Soomro
 Final Approval of version: Ameer Ali khaskeli

Conflict of Interest: The study has no conflict of interest to declare by any author.

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