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TO EVALUATE THE OUTCOME OF SUBLAY OPEN MESH REPAIR IN INCISIONAL HERNIA.

Abdul Ghani[1], Muharram Ali Abbasi[2], Ehsanullah Malik[3], Nadia Bhatti[4], Sania Bhatti[5], Waqar-e-Sahar Shah[6].

ABSTRACT

INTRODUCTION: Incisional hernia is a protrusion of the tissue developed at the site of healing /8scar. This hernia accounts for 15-20% of all abdominal hernias. The causes include respiratory, urological and abdominal problems like chronic cough, difficulty in passing urine and constipation etc. Pregnancy and ascites are also etiological factors. Postoperative wound infections and wound dehiscence are also responsible for developing incisional hernias. Open sublay mesh repair is the best procedure in this regard. **OBJECTIVE: -** To assess the efficacy of Sublay Mesh repair in patients suffering from incisional hernia. **MATERIAL AND METHODS:** This is study of one year done in Chandka Medical College Hospital Larkana from March 2019 to February 2020. All the patients were taken from OPD. Clinical History particularly Past history of Surgry was taken. Patients were optimized and fitness was taken for surgery. Mesh of required size was arranged and patients were operated for Open Sublay Mesh repair. Follow up was gotten. **RESULTS:** Total patients included in this study were 45. Of them, 25(55.5%) were female and 20 (44.4%) were male. Seroma formation was in 9(20%) patients but the placement of Redivac drain resolved the issue instantly. Infection was seen in 1(2.2%) patient only. Recurrence was noted in 1 (2.2%). Flap necrosis was seen in no any patient. The rate of fecal fistula was 0%. **CONCLUSION: -** Sublay open Mesh repair was the best method in our study with good results and least complication rate.

KEYWORDS: Incisional Hernia, Ascites, Seroma Formation, Infection, Recurrence.

1. Associate Professor, Surgery, SMBBMU, Larkana.
2. Assistant Professor, Surgery, SMBBMU, Larkana.
3. Assistant Professor, Surgery, SMBBMU, Larkana.
4. Assistant Professor, Surgery, SMBBMU, Larkana.
5. Assistant Professor, Surgery, SMBBMU, Larkana.
6. Consultant Surgeon, SMBBMU, Larkana.

Corresponding Author: Muharram Ali Abbasi, Assistant Professor, Surgery, SMBBMU, Larkana. Email: dr_muharramabbasi@yahoo.com

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INTRODUCTION

Surgical mesh is a type of netting of plastic or organic material that may be implanted to support various tissues or organs, especially those of the pelvic area. It could be temporary and permanent. It is made from inorganic and biological material. It is used in many types of surgeries. Its most common application is in hernias.[1] It is also used for reconstructive purpose for prolapse of pelvic organs. Permanent meshes remain during whole life whereas temporary one dissolves with passage of time. In surgical practice of developing countries, the common usage is of permanent mesh.[2]

Hernia is the result of protrusion of viscus through openings that are weak. The mesh is implanted to strengthen the defect and prevent recurrence. Mesh repair is the method with result oriented, productive and having least recurrence rate. No consensus was seen regarding the type of mesh to be used for the repair but the unveiling of novel polyester mesh with resorbable polylaptic acid micrographs have revolutionized the technique which adheres strongly to area of repair better as compared to other types of mesh.[3,4]

Incisional hernia is the type of hernia that occurs owing to incomplete healed surgical wound. Clinically, patient presents as a bulge or protrusion at or near the area of a surgical incision. Usually, the abdominal surgeries develop incisional hernia at the scar area

most probably of intestinal or visceral surgeries like exploratory laparatomy. In cases of exploratory laparatomy, the prevalence of incisional hernia is 12.8% after 2 years[5] these hernias are mostly caused by weakness of surgical wounds due to postoperative complications of wound. Other causes include chronic cough, urinary retention, constipation, pregnancy or ascites. Poor surgical technique is also the cause. Treatment is the use of prosthetic mesh. Mesh repair is of three types. Onlay, sublay and inlay mesh repair. [6, 7]

Sublay mesh repair is the most effective method to manage incisional hernia. It has the lowest recurrence rate probably due to placement of mesh in the area between posterior rectus sheath and the anterior myo-fascial complex[8] these areas provide the tissues necessary for the integration of mesh. Complications of the surgery are the infection of incision, seroma formation, recurrence, mesh removal and flap necrosis etc.[9, 10]

The rationale of our study is to evaluate the outcome of open sublay mesh repair so that it can have least complications aimed at saving patients from psychological trauma and economic burden of postoperative complications.

PATIENTS AND METHODS

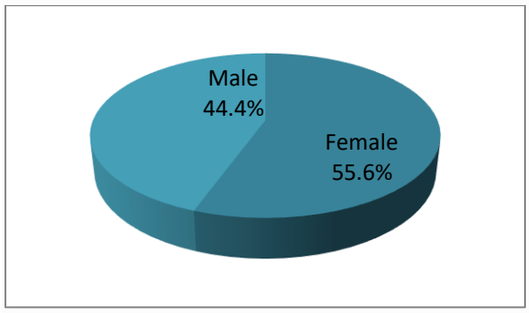
This study was done on 45 patients with diagnosis of incisional hernia at surgical department, Shaheed Muhtarma Benazir Bhutto Medical University (SMBBMU) larkana from March 2019 to February 2020. All the patients were admitted from surgical outpatient department (SOPD). Clinical history was taken. Past history of previous surgery was taken. Local and all systemic Examinations were done. The defect was examined to see its size. Reducibility was also checked in order to keep the patient on elective surgery because irreducible and obstructed incisional hernias were excluded from the study. Routine biochemical investigations like blood sugar, blood urea, serum creatinine, Blood CP, HbsAg and Anti HCV were done and found to be within normal limits. Ultrasound of Abdomen and pelvis was taken to confirm the contents in swelling and size of the defect. Cardiac and anesthesia fitness were gotten. Patients were prepared for elective list. Keeping in view the size of defect, the size of mesh was arranged.

OPERATIVE DETAILS

Patients were sifted to OT. After anesthesia, old scar of previous surgery was removed and careful dissection was done layer by layer. Hernia sac was exposed, dissected and contents were reduced. Defect was measured and space was created to place mesh in retro-rectus area. All aseptic measures were done during surgery. Broad spectrum antibiotic was injected at the time of induction of anesthesia. Wound was closed after keeping Redivac Drain in Retro muscular area. Wound was closed accordingly. Patients were shifted to ward for postoperative management. Postoperative care was done for 5 to 10 days. Patient was called for follow up to observe the outcome of procedure for period of one year.

RESULTS

Total 45 patients were included in the study. 25 (55.6%) females and 20 (44.4%) male patients were in this study as is shown in Pie Chart below



Age difference was also seen in patients of incisional hernias. 5 (11.11%) patients aged from 15 to 25 years. 10 (22.22%) patients were of age between 26 to 38 years. 30 (66.66%) patients were of age between 39 to 60 years. average age was 47 years.

Table 1 AGE OF PATIENTS

S.NO:	AGE IN YEARS	NO OF PATIENTS	%
1	15-25	05	11.12%
2	26-38	10	22.22%
3	39-60	30	66.66%
TOTAL	15-60	45	100%

All the patients operated were not of general surgery procedures performed previously. The patients also came from other departments also. Gynecological and urological patients operated also came in our ward with complain of incisional hernia.

Only 6 (13.3%) patients operated for abdominal hysterectomy admitted with diagnosis of incisional hernia. 4 (8.8%) patients came from urology previously operated for Renal stone surgeries. 10 (22.2%)patients were operated for exploratory laparotomy. 10 (22.2%) patients were of open cholycystectomy which were admitted with incisional hernia. 7 (15.5%)patients were operated for trauma either stab injury or blunt abdominal trauma. 4 (8.8%) patients were of colonic carcinomas and 4 (8.8%) patients were operated for appendectomy.

Table 2 TYPE OF **PREVIOUS SURGERY PERFORMED.**

S.NO:	TYPE OF SURGERY	NO OF PATIENTS	%
1	Abdominal Hysterectomy	6	13.3%
2	Renal Stone	4	8.8%
3	Exploratory laparotomy	10	22.2%
4	Open Cholycystectomy	10	22.2%
5	Trauma	7	15.5%
6	Colonic Carcinomas	4	8.8%
7	Appendectomy	4	8.8%
TOTAL		n=45	100%

Postoperative complications were noted. Seroma formation was in 9(20%) patients but the placement of Redivac drain resolved the issue instantly. Infection was seen in 1(2.2%) patient only. No recurrence was noted. Flap necrosis was seen in no any case. Fecal fistula was seen in 0% patients.

Table 1 POSTOPERATIVE COMPLICATIONS

S.NO:	COMPLICATION	NO OF PATIENTS	%
1	Seroma formation	09	20%
2	Infection	01	2.2%
3	Recurrence	01	2.2%
4	Flap Necrosis	0	0%
5	Fecal fistula	0	0%
TOTAL		11	24.4%

These complications were dealt with accordingly.

DISCUSSION

Incisional hernia is one of the most common procedures performed in practice of General Surgery. In United States, nearly 400,000 incisional hernias are repaired annually and add 10 billion in health care costs in a year. According to one estimate, 45% of hernias recur after repairs. Incisional hernias are very common and morbid complication after abdominal surgeries. Profound attention is given only on the risk factors of its occurrence and little attention is paid on the risk factors of its recurrence. [11]

In a study done, it is concluded that mesh placed in a sublay or underlay was associated with fewer recurrence. In our study the recurrence rate is 2.2%. The type of Mesh used is also a debate in surgical community. The location of mesh is also debate. Sosin et al in 2018 on 6227 patients' study showed recurrence of 8.9%. In same study, the recurrence rate of sublay intra-peritoneal and pre-peritoneal mesh repair was 10.9% and 12.9% respectively. In another study done by Holihan et al, the recurrence rate and wound infection was lowest. [12]

The overall complication rate in study of Sosin et al ranged from 32.6% to 39.1%. The infection rate of mesh was 7.6%. The seroma formation was found to be among 17.4%. In our study, the total complication rate was 24.4% and postoperative wound infection

was 2.2% only. In our study, the seroma formation was 20%. In a study, mesh removal was seen in 0.5% in sublay technique. In our study, mesh removal was 0%. In another study, the mortality was 0.5% but it was again 0% in our study. Fecal fistula was also 0% in our study as a complication of sublay technique. [13, 14]

There are certain limitations for sublay mesh repair in cases of incisional hernias. Very limited numbers of studies are done on sublay mesh repair.[15] Laparoscopic repair has significantly low postoperative complication rate especially the surgical site infection and others. Its disadvantages are intra operative complications. Kockerling et al study showed no difference in pain and recurrence of open and laparoscopic procedures. Open sublay mesh repair for incisional hernia have advantages over the repair of repair for epigastria, para umbilical and umbilical hernia repair. Former is associated with lower recurrence rate as compared to latter. [16, 17]

Precise scrutiny of literature reveals that different variants of meshes, fixation techniques and drain placement are of paramount importance in sublay mesh repair and have profound effects on consequences. [18]

Conclusion: - Sublay open Mesh repair was the best method in our study with good results and least complication rate.

ETHICS APPROVAL: The ERC gave ethical review approval

CONSENT TO PARTICIPATE: written and verbal consent was taken from subjects and next of kin

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CONFLICT OF INTEREST: No competing interest declared.

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