Original Article

Assessment Of Causes And Complications While Repairing The Incisional Hernia By Preperitoneal Meshplasty

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Abstract

Background: Incisional hernia is defined as a defect occurring through the operative scar. The present study was conducted to assess causes and complications while repairing the incisional hernia by preperitoneal meshplasty.

Materials & Methods:45 with incisional hernia between 15 and 65 years located in the upper and lower midline incisions of the abdomen were included. Parameters such as operative time, creation of adequate preperitoneal plane, duration of hospital stay(days), recurrence, assessment of pain using VAS score and complications such as bleeding, wound infection, peritoneal breach were recorded.

Results: Out of 45 patients, males were 28 and females were 17. The mode of presentation was abdominal swellingin 22 and abdominal swelling & pain in 2. It was reducible swelling in 27 and non- reducible swelling in 18. Duration since surgery was 0-3 months in 11, 3 months- 1 yearin 15 and 1-3 years in 19 patients. VAS on day 1 was 5.6, on day 2 was 3.2 and on day 7 was 1.4. Type of incision used in previous surgeries was upper midline in 28, lower midline in 3, paramedian in 2, pfannensteil in 10 and umbilical port site in 2 patients. The difference was significant ($P< 0.05$). Complications recorded were post-operative cough in 5, wound infection in 3, peritoneal breach in 6 and bleeding in 2 cases. The difference was non- significant ($P>0.05$).

Conclusion: Preperitoneal mesh repair had excellent long-term results with minimal morbidity. The preperitoneal mesh repair is the gold standard treatment for incisional hernia repair as compared to other types of mesh repair techniques.

Key words:mesh repair techniques, Incisional hernia, Preperitoneal

INTRODUCTION

Incisional hernia is defined as a defect occurring through the operative scar. It is one of the most common conditions requiring major surgery despite advances in surgical techniques and suture material.[1] The incidence of incisional hernia in literature is 2- 11% following all laparotomies and it is a source of morbidity and requires high health care costs. It is seen more in females, obese and older age group. As a result of high recurrence rate in the repair of incisional hernia, various types of repairs have been used both anatomical and prosthetic.[2]

Various types of repairs have been described, both anatomical and prosthetic. But the results have been disappointing with a high incidence of recurrence-about upto 50% after an anatomical repair and upto 10% following prosthetic mesh repairs.[3] In general, the postoperative complications of incisional hernia include pulmonary atelactasis, bronchitis, pulmonary embolism, postoperative ileus, thrombophlebitis and deep venous thrombosis, where as local complications like wound seroma, haematoma, infection, sinuses and complications of mesh. Mesh repair is an excellent method of repair preferred for patients with large defects of the anterior abdominal wall, especially preferred more than 4 cm, size defect.[4]The implantation of prosthetic mesh remains the most efficient method of dealing with incisional hernia. The prosthetic mesh can be placed between the subcutaneous tissues of the abdominal wall and the anterior rectus sheath (onlay mesh repair) as well as in the preperitoneal plane.[5,6]The present study was conducted to assess causes and complicationswhile repairing the incisional hernia by preperitoneal meshplasty.

MATERIALS & METHODS

The present study comprised of 45 with incisional hernia between15 and 65 yearslocated in the upper and lower midline incisions of the abdomen. All gave their written consent for the participation in the study.

Data such as name, age, gender etc. was recorded. All patients underwent routine preoperative haematological and biochemistryinvestigations, chest x ray and ultrasonography. After PAC fitness, patients underwent surgery. The

procedure was done under general anaesthesia, spinal or epidural anaesthesia in supine position.The sac was opened and contents were reduced after lysis of the adhesions. The excess sac excised, peritoneum closed with absorbable synthetic suture. Adequate preperitoneal plan prepared between the posterior rectus sheath and peritoneum, mesh placed and fixed with prolene no. 2-0 or 3-0 sutures. Parameters such as operative time, creation of adequate preperitoneal plane, duration of hospital stay(days), recurrence, assessment of pain using VAS scoreand complications such as bleeding, wound infection, peritoneal breachwere recorded. Results thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 45		
Gender	**Males**	**Females**
Number	28	17

Table I shows that out of 45 patients, males were 28 and females were 17.

Table II Assessment of parameters

Parameters	**Variables**	**Number**	**P value**
Mode of Presentation	Abdominal swelling	22	0.82
	Abdominal swelling& pain	23	
Reduction	Reducible swelling	27	0.05
	Non- reducible swelling	18	
Duration since Surgery	0-3 months	11	0.91
	3 months- 1 year	15	
	1-3 years	19	
VAS	Day 1	5.6	0.04
	Day 2	3.2	
	Day 7	1.4	
Type of incision used in previous surgeries	Upper midline	28	0.01
	Lower midline	3	
	Paramedian	2	
	Pfannensteil	10	
	Umbilical Port site	2	

Table II, graph I shows that mode of presentation was abdominal swelling in 22 and abdominal swelling & pain in 2. It was reducible swelling in 27 and non- reducible swelling in 18. Duration since surgery was 0-3 months in 11, 3 months-1 year in 15 and 1-3 years in 19 patients. VAS on day 1 was 5.6, on day 2 was 3.2 and on day 7 was 1.4. Type of incision used in previous surgeries was upper midline in 28, lower midline in 3, paramedian in 2, pfannensteil in 10 and umbilical port site in 2 patients. The difference was significant (P< 0.05).

Graph I Assessment of parameters

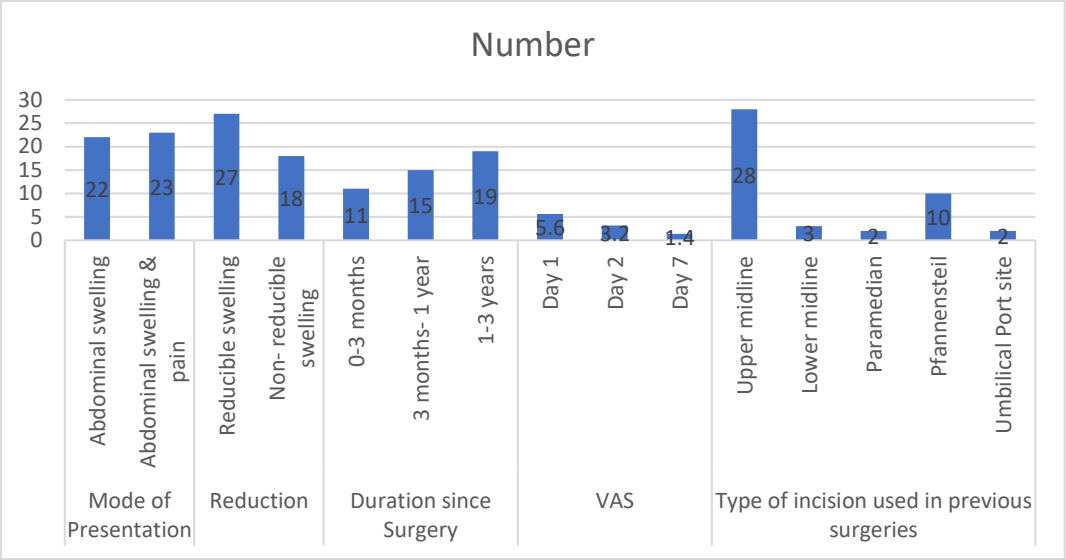

Table III Assessment of complications

Complications	Number	P value
Post-operative cough	5	0.75
Wound infection	3	
Peritoneal breach	6	
Bleeding	2	

Table III shows that complications recorded were post-operative cough in 5, wound infection in 3, peritoneal breach in 6 and bleeding in 2 cases. The difference was non- significant (P>0.05).

DISCUSSION

Incisional hernia is defined as a diffuse extrusion of peritoneum and abdominal contents through a weak scar after an operation or accidental wound.[7] The exact incidence of incisional hernia has not been well defined, although a number of reports in the literature suggest that the incidence is probably between 10% to 20%.[8,9] Recent studies however show that about 2/3rd appear within the first 5 years and that at least another third appear 5-10 years after the operation. It is seen more in females, obese and older age group.[10,11]The present study was conducted to assess causes and complicationswhile repairing the incisional hernia by preperitoneal meshplasty.

We found that out of 45 patients, males were 28 and females were 17. The mode of presentation was abdominal swelling in 22 and abdominal swelling & pain in 2. It was reducible swellingin 27 and non- reducible swelling in 18. Duration since surgery was 0-3 months in 11, 3 months- 1 year in 15 and 1-3 years in 19 patients. VAS on day 1 was 5.6, on day 2 was 3.2 and on day 7 was 1.4. Akruwala et al[12]evaluated the technique of preperitoneal mesh repair of incisional hernias. Preperitoneal mesh repair was done in all the 53 cases. Follow up of 12 to 24 months was carried in the OPD with regards to postoperative complications and recurrences if any. No recurrence was noticed in the present study. Less number of postoperative complications were noticed in the present study. They concluded that preperitoneal mesh repair is the ideal technique for incisional hernia repair.

We observed that type of incision used in previous surgeries was upper midline in 28, lower midline in 3, paramedian in 2, pfannensteil in 10 and umbilical port site in 2 patients. Shahi et al[13] assessed causes, complications, operating time, while dealing to Incisional hernia cases. A total of 30 patients were included in the present study. In which 11 (37%) were male and 19 (63%) were female. All patients were in ranged of 16years to 64 years of age. Maximum number of patients were between to the age group of 36-45 years followed by 46-55 years and 10-20 years. And 14 patients (46.7%) with abdominal swelling and 16 Patients (53.3%) presented with swelling and pain both in abdomen. Out of total of 30 patients, (12) of patients had history of Exploratory Laparotomy followed by Hysterctomy (7), LSCS (6), Herniorraphy and Laproscopy 2 each and Tubal Ligation and open Appendectomy one each, 7 patient (23.3%) presented with incisional hernia within 3 months of the previous surgeries. 9(30%) patients noticed swelling at the operation site within 3 months to one year of surgery, 5 patients (16.7%) within 1-3 years of surgery and Remaining 9(30%) patients developed hernia after 3years.

We found thatcomplications recorded were post-operative cough in 5, wound infection in 3, peritoneal breachin 6 and bleeding in 2 cases.Bucknell, Cox and Ellis[14] in their of 1129 laparotomy closures, found that 48% of their patients with incisional hernia had previous wound infection and those with wound infection developed hernias almost four times more often.

The limitation the study is small sample size.

CONCLUSION

Authors found that Preperitoneal mesh repair had excellent long-term results with minimal morbidity. The preperitoneal mesh repair is the gold standard treatment for incisional hernia repair as compared to other types of mesh repair techniques.

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