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Incisional Hernia Management with Preperitoneal Meshplasty

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ABSTRACT

Background: To assess cases of incisional hernia managed with preperitoneal meshplasty.

Material and Methods: 72 patients of incisional hernia of both genders underwent preperitoneal meshplasty. Parameters such as mode of presentation, type, type of incision used, time of onset after the previous surgeries and complications were recorded.

Results: Out of 72 patients, males were 42 (58.3%) and females were 30 (41.7%). Mode of presentation was abdominal swelling in 38 and abdominal swelling & pain in 34. Swelling was reducible in 26 and irreducible swelling in 46. Type of incision used was upper midline in 18, lower midline in 26, paramedian in 12 and umbilical port site in 16 patients. Time of onset after the previous surgeries was 0-6 months in 24, 6 months- 1 year in 12, 1-3 years in 10 and >3 years in 26 cases. Post- operative pain after 1 week was mild in 22 and moderate in 50. A significant difference was observed (P< 0.05). Common risks factors were diabetes mellitus in 12, post-operative cough in 2, wound infection/dehiscence in 5, obesity in 3, anemia in 6 cases. The difference was significant (P< 0.05).

Conclusion: Preperitoneal meshplasty found to be efficient method of incisional hernia repair with less post- operative complications.

Keywords: Incisional hernia, Preperitoneal Meshplasty, Post- operative complications.

INTRODUCTION

Incisional hernia is defined as a diffuse extrusion of peritoneum and abdominal contents through a weak scar after an operation or accidental wound.[1] 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%.[10] Research shows 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.[2]

Various surgical techniques including open tissue repair, double breasting, darning, open and laparoscopic meshplasty have been used to repair the incisional hernias. In spite of ventral hernias repair being done in large numbers there is still unclear consensus about the best repair.[3,4] In this era, 'Pre-peritoneal versus on-lay meshplasty in incisional hernia repair' aims to focus on advantage and disadvantage of two methods of hernia repair and to provide information regarding indications and benefits of one over another.[5] The main advantage of pre peritoneal mesh repair are less chance of mesh infection and erosion through skin because the graft lies in preperitoneal plane between posterior rectus sheath and peritoneum, avoids adhesions, bowel obstruction, enterocutaneous fistula and erosion of mesh, minimal

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morbidity and duration of hospital stay is less compared to other techniques.[6] The present study assessed cases of incisional hernia managed with preperitoneal meshplasty.

MATERIAL & METHODS

A sum total of seventy- two adult patients of incisional hernia of both genders were recruited for the study. All agreed to participate in the study with their written consent. Ethical clearance was obtained from institutional ethical committee.

Demographic data such as name, age, gender etc. was recorded. All patients underwent preperitoneal meshplasty. Parameters such as mode of presentation, type, type of incision used, time of onset after the previous surgeries and complications were recorded. Data thus obtained were statistically analysed using Mann Whitney U test. The level of significance was set below 0.05.

RESULTS

Table I Distribution of patients

Total- 72		
Gender	**Males**	**Females**
Number	42 (58.3%)	30 (41.7%)

Out of 72 patients, males were 42 (58.3%) and females were 30 (41.7%) (Table I).

Table II Determination of parameters

Parameters	Variables	Number	P value
Mode of presentation	Abdominal swelling	38	0.81
	Abdominal swelling & pain	34	
Type of swelling	Reducible swelling	26	0.02
	Irreducible swelling	46	
Incision type	Upper midline	18	0.51
	Lower midline	26	
	paramedian	12	
	Umbilical port site	16	
Time of onset after the previous surgeries	0-6 months	24	0.05
	6 months- 1 year	12	
	1-3 years	10	
	>3 years	26	
Pain after 1 wek	Mild	22	0.01
	Moderate	50	
	Severe	0	

Mode of presentation was abdominal swelling in 38 and abdominal swelling & pain in 34. Swelling was reducible in 26 and irreducible swelling in 46. Type of incision used was upper midline in 18, lower midline in 26, paramedian in 12 and umbilical port site in 16 patients. Time of onset after the previous surgeries was 0-6 months in 24, 6 months- 1 year in 12, 1-3 years in 10 and >3 years in 26 cases. Post- operative pain after 1 week was mild in 22 and moderate in 50. A significant difference was observed ($P< 0.05$) (Table II).

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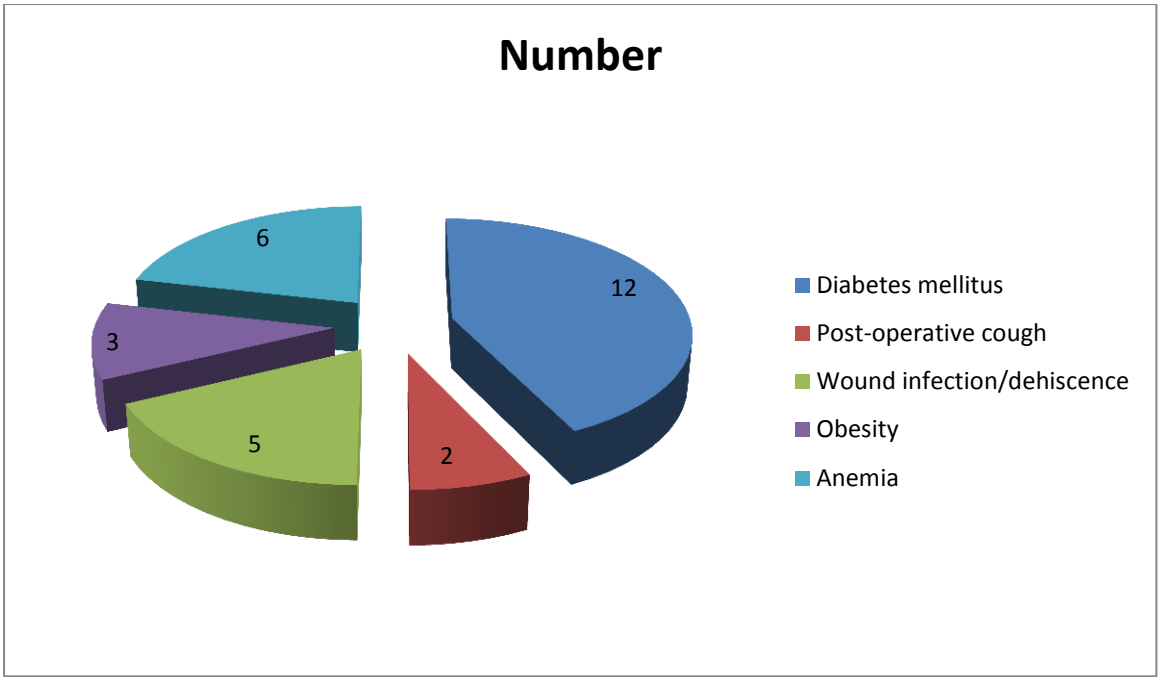

Graph I Assessment of risk factors and complications

Common risks factors were diabetes mellitus in 12, post-operative cough in 2, wound infection/dehiscence in 5, obesity in 3, anemia in 6 cases. The difference was significant (P< 0.05) (Graph I).

DISCUSSION

Incisional hernia is the most common complication of laparotomy that requires reoperation.[7] Recent figures cite an overall incidence of nearly 10%.[8,9] For stoma site hernias, the incidence of hernia formation may be as high as 30% and, when surgical site infections occur, the incidence is believed to double. The costs of incisional hernia repair surgeries are staggering.[10,11]The present study assessed cases of incisional hernia managed with preperitoneal meshplasty.

Our results showed that out of 72 patients, males were 42 (58.3%) and females were 30 (41.7%). Schumpelick VC et al[12] evaluated the results of 272 incisional hernia repairs. The group consisted of 58% male and 42% female patients with a mean age of 61.1 years and 111 primary and 161 recurrent incisional hernias. Conventional techniques (simple closure, Mayo) and alloplastic repairs were performed in 69.9 and 30.1%, respectively. During the last 4 years we predominantly used the pre-peritoneal mesh repair with polypropylene mesh (Marlex). The results of 87% of our group of patients were evaluated by questionnaire and information from the family physicians (mean follow-up period 64 months). The patients who underwent preperitoneal mesh repair were examined clinically and with ultrasound. In comparison to the results of conventional hernia repair, early complications (seroma, hematoma) were higher. The recurrence rate, however, was significantly lower in this group with mesh repair (6.8%) than in patients without alloplastic augmentation (32.6%). Whereas preperitoneal mesh repair is convincingly the ideal surgical technique, optimization of the alloplastic materials by reduction of the amount of foreign substance and improvement of elasticity and biocompatibility is mandatory.

Our results showed that mode of presentation were abdominal swelling in 38 and abdominal swelling & pain in 34. Swelling was reducible in 26 and irreducible swelling in 46. Type of incision used was upper midline in 18, lower midline in 26, paramedian in 12 and umbilical port site in 16 patients. Time of onset after the previous surgeries was 0-6 months in 24, 6

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months- 1 year in 12, 1-3 years in 10 and >3 years in 26 cases. Post- operative pain after 1 week was mild in 22 and moderate in 50. Patel et al[13] in their study 77 cases of ventral hernia were taken in On-lay and pre-peritoneal group. group (A): On-lay meshplasty and group (B): Pre-peritoneal meshplasty. Mean age in On-lay group is 47.96 year. While in Pre-peritoneal group mean age is 48.66 year. Results showing pain is not making difference between two methods in post operative period 6th day onwards. The duration of hospital stay was comparable and mean duration in On-lay is 3.51 day and in pre-peritoneal is 3.9 day. It showed that pre-peritoneal method required more time than On-lay. In this study, 6/33 patients develop seroma in on-lay method, while 1/44 patients develop seroma in preperitoneal method in post operative period.

Our results revealed that common risks factors were diabetes mellitus in 12, post-operative cough in 2, wound infection/dehiscence in 5, obesity in 3, anemia in 6 cases. Akruwala et al[14] 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.

Dhanasekaran et al[15] in their study 40 patients with incisional hernia undergone open preperitoneal polypropylene mesh repair. Out of 40 patients, the size of the defect, 10 patients had less than 2 cm, 28 patients had between 2.1-4 cm, 1 patient between 4.1-6 cm and 1 patient between 6.1-8 cm. The type of hernia, 32 patients had infra umbilical hernia, and 8 patients had a supraumbilical hernia. Post-operative complication 3 patients had seroma, 1 patient had edge necrosis, 1 patient had post-op ileus, and 1 patient had chronic pain. Based on follow up, 4 patients had followed until 6 months, 10 patients till 9 months and 26 patients till one year.

CONCLUSION

Preperitoneal meshplasty found to be efficient method of incisional hernia repair with less post- operative complications.

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