



A STUDY OF MANAGEMENT AND POST OPERATIVE COMPLICATIONS OF INCISIONAL HERNIA PRESENTING IN A TERTIARY CARE HOSPITAL

General Surgery

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ABSTRACT

Introduction: One of the frequent issues encountered following abdominal surgeries is an incisional hernia. Inguinal hernias are the most frequent type of hernia, with incisional hernias coming in second. It is a significant cause of morbidity and is treatable with Laparoscopic, mesh and anatomical repair. Even with recent improvements in surgery, antibiotics, suture material, and anaesthesia, this hernia still occurs frequently. Incisional hernias have different aetiologies, which have been linked to the patient, the surgical technique, the suture material, and the surgeon's experience, according to a number of studies. The purpose of the current study is to evaluate the severity of the issue, examine the various causes of this condition, the various treatment modalities used, postoperative complications, and various factors influencing surgical outcome in these patients. **Method:** From January 2019 to December 2020, this prospective descriptive study was carried out in the surgery department of a tertiary care teaching hospital. All patients who were admitted with an incisional hernia diagnosis, regardless of age or gender, were included in the study. The size of the defect was taken into consideration when treating it. Patients were monitored after surgery to look for potential complications and treat them. **Result:** Incisional hernia was found to be the second most common type of hernia. The incidence was more common in females, who underwent gynaecological procedures by lower midline incisions. It was found to be more common in the age group 30-60 years. Predominant risk factors being wound infection and obesity. Infra-umbilical midline incision was found to be more common compared to other incisions. Majority of patients who underwent emergency surgery developed incisional Hernia. Postoperative complications noted were mainly due to wound infections and seroma. **Conclusions:** Mesh repair results in less recurrence than anatomical repair for incisional hernia. The incidence of incisional hernia is more common in women than men due to abdominal wall weakness secondary to multiple pregnancies, increased number of caesarean sections and gynaecological surgeries. Sterile aseptic technique and appropriate use of pre-operative antibiotics is necessary to reduce the occurrence of incisional hernia.

KEYWORDS

Incisional hernia; Mesh repair; Infra umbilical midline incision.

INTRODUCTION

Incisional hernia is an iatrogenic hernia.¹ It is a common complication after abdominal surgery with a reported incidence of 11-20%.² Incisional hernia is defined as any abdominal wall gap with or without a bulge in the area of a postoperative scar perceptible or palpable by clinical examination or imaging.³ More often than not the problem is recurrent and tests the abilities of even the most experienced surgeons.⁴ Unlike other abdominal wall hernias, which occur through anatomical points of weakness, incisional hernias occur through a weakness at the site of abdominal wall closure.⁵ Before the introduction of general anaesthesia by Morton in 1846, incisional hernias were rare. As survival after abdominal surgery became more common so did the incidence of incisional hernias.⁶ Until recently, incisional hernias were thought to result mainly from a technical failure in the surgical closure of the abdominal wall.⁷ The postulated predisposing factors for incisional hernia are obesity, diabetes mellitus, steroids, smoking, sub-optimal surgical technique, old age, malnutrition, multiple laparotomies, chronic pulmonary disease, type of incision and closure including suture material used and the most important wound infection.⁸ Despite the increasing progress of modern surgery, the optimum surgical treatment of incisional hernia is still an unanswered problem.⁹ The introduction of prosthetic mesh revolutionised the treatment of groin hernia but, to date, has had little impact on the treatment of incisional hernia.¹⁰ The present study entitled is undertaken to assess the magnitude of problem, analyse various factors leading to development of this condition and different modalities of treatment practiced, postoperative complications and their management, various factors affecting surgical outcome in these patients.

MATERIALS AND METHODS

This prospective study was conducted in Narayan Medical College and Hospital, Sasaram Bihar from January 2010 to December 2020. 25 incisional hernia patients included in this study which was admitted under general surgery department.

Inclusion criteria:

All adults (>18 years age) with ventral incisional hernias admitted under general surgery department during the time period of study.

Exclusion criteria:

Patients <18 years of age, patients with ventral hernia without any previous surgery, patients who have recurrence after incisional hernia repair surgery, Patients refused for surgical management.

All patients were evaluated by proper history and detailed physical examination and underwent relevant hematology and biochemistry investigations. Ultrasound examination and CECT abdomen done to evaluate numbers of defects, size of defects, sac contents and any other abdominal pathology. Comorbidity's managed medically and chronic constipation, chronic cough like conditions also managed medically. Pre-operative workup and anaesthesia fitness done and most of patients given general anesthesia as better muscle relaxation required during closer. Patients kept NPO for about 6 - 8 hours before surgery and before 1 day of surgery kept on liquid diet. Bowel preparation done before surgery. Foleys catheter and nasogastric tube were used SOS.

After induction of anesthesia painting and draping done and incision placed vertically or transversely according to previous scar and enclosing that previous scar. Abdomen opened layer by layer and hernia sac identified and dissected, Adhesiolysis done between content and sac and content reduced back to abdominal cavity and redundant sac wall was excised. Hemostasis was achieved. Defect closer done in which peritoneum along with the rectus sheath was closed by using prolene no1. Poly propylene mesh 4 - 5 cm larger than defect placed above rectus sheath and fixed with prolene no 2-0. Negative suction drain placed over mesh and subcutaneous closer done by using vicryl no 2-0. Another flange of negative suction drain put in subcutaneous plane and betadine application done and Skin closer done by using ethilon 2-0. Sterile dressing done. Dianaplast dressing placed to reinforce anterior abdominal wall and abdominal binder used in each patient of this study in post-operative period. During post-operative period all patients received same triple antibiotics and round the clock analgesic support and some patients required post-operative oxygen support. Patients kept NPO for 24 hours after surgery and after examining peristalsis NPO break and liquid diet started which gradually shifted towards soft and high fiber diet. All patients mobilized after 24 hours of surgery and each patient use abdominal binder for support. All Patients received laxative and all advised to do deep breathing exercises like 3 ball spirometry. The first dressing done on post-operative day three and stitch line examination done for seroma, hematoma or any wound infection. Subcutaneous flange of drain removed in first dressing and after that all patient discharge from hospital in order to prevent hospital acquired wound infection. After discharge all patients encouraged to take proper diet like high fiber and high protein diet, return to their normal daily activities but avoid weight lifting and any kind of straining or exercise. All patients were followed up at 1 week, 1 month, 3 month and 6-month intervals up to 3 years. In initial follow ups patients were examined for short term

complications like seroma formation, wound infection, wound gap, wound dehiscence and some of these required re-admissions for taken care of this complications. Some of these patients presented in subsequent visit with pain at scar site and recurrence.

RESULTS AND DISCUSSION

Total 25 cases were studied in which 21 patients were women and 04 patients were men. As gynaecological causes of laparotomy were most commonly associated with incisional hernia so it is more commonly seen in female.

Age distribution suggests that incisional hernia incident was common in age group of 40 to 50 years.

AGE	NO. OF PATIENTS	%
less than 30 years	0	0%
31 - 40 years	08	32%
41 - 50 years	11	44%
51 - 60 years	04	16%
more than 60 years	02	8%

Incisional hernia is more common in operated case of Emergency surgery (gynaecological+ surgical) as compared to elective surgery.

TYPE OF SURGERY	NO. OF SURGERY	%
emergency surgery (Gynecological +surgical procedure)	15 (09 + 06)	60% (36% + 24%)
elective surgical procedure	10	40%

As midline incision are more used during emergency surgery and more prone to developed infection so led to higher chances of incisional hernia compare to transverse incision. Cesarean section was noticed as most common individual operation associated with an incisional hernia, the probable cause other than co morbidity was uses of absorbable suture material during facial closer, so use of non-absorbable sutures will reduce chances of incisional hernias.

The suture material and suture technique used to close the fascia have shown the risk of incisional hernia in cases of midline laparotomy incision. Suture technique with continuous sutures placed 5 mm apart and 5 mm away using a suture 4 times the length of incision and non-absorbable in nature has been shown to prevent incisional hernias.¹¹

NAME OF CAUSES	NO. OF CASES	%
abdominal hysterectomy	06	24%
cesarean section (LSCS)	03	12%
acute intestinal obstruction	04	16%
appendicular perforation	02	8%
peptic perforation	05	20%
other causes of exploratory laparotomy	05	20%

Incisional hernias are more common in Infra umbilical midline incision compare to other incisions as it has more chances of wound infection, wound gap and wound dehiscence and also there is no posterior rectus sheath below umbilicus to give strength to anterior abdominal wall.

TYPE OF INCISION	NO. OF CASES	%
supra umbilical	07	28%
infra umbilical	12	48%
mid midline	05	20%
pflannenstiel	01	4%

Co morbidity and other predisposition factors also leads to increased chances of incisional hernias.

PRE-DISPOSING FACTORS	NO. OF CASES	%
obesity	19	76%
Diabetes mellitus	12	48%
hypertension	08	32%
chronic respiratory condition (COPD+chronic bronchitis)	04	16%
chronic constipation	11	44%
Multiparty	10	40%

COMPLICATIONS	NO. OF CASES	%
Seroma	10	40%
wound infection	06	24%
wound dehiscence	04	16%

recurrence within 2 years of surgery	00	0%
recurrence after 2 years of surgery	02	8%

CONCLUSION

Incisional hernias occur more commonly in females than males. Wound infection in the post operative period was the most common risk factor for incisional hernia. Recurrence rate is more in emergency operated cases. Polypropylene mesh repair is superior to anatomical repair as it has less recurrence rate. Proper preoperative preparation of the patients with high risks (diabetes mellitus, COPD, obesity etc.) is an important factor in preventing recurrence of incisional hernia. As lower midline incisions are more prone for incisional hernia their use should be restricted whenever possible. Meticulous aseptic technique and careful closure of the abdominal wound is necessary to prevent post-operative wound infection and subsequent incisional hernia formation. Sterile aseptic technique and appropriate use of pre-operative antibiotics is necessary to reduce the occurrence of incisional hernia. Suction drains must be used in both anatomical and mesh repairs to reduce the post-operative complications like seroma, wound infection and wound gapping, thereby reducing the recurrence of incisional hernia. Mesh repair has less rate of recurrence when compared to anatomical repair; hence, mesh repair should be preferred over anatomical repair. Laparoscopic hernia repair should be the first line of treatment for recurrent incisional hernias.

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