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Clinical Study of Management And Post Operative Complications of Incisional Hernia: Prospective Study

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ABSTRACT:
BACKGROUND:-Incisional hernia is one of the common complications facing after abdominal surgeries. Incisional hernia is 2nd most common type of hernia followed by inguinal Hernias.It is important cause of morbidity and It can be taken care by anatomical, mesh and laparoscopic repair. The incidence of this hernia is high even with recent advances in surgery, antibiotics, suture material and in anesthesia. We plan to study epidemiology, etiology, modes of presentation,modalities of treatment and its outcomes for incisional hernias.
AIM:-This study conducted to study epidemiology, etiology, modes of presentation,modality of treatment and outcome with post-operative complications in incisional hernias.
METHOD:-This prospective study was conducted in SMT. SHARADABEN GENERAL HOSPITAL,SARASPUR,AHMEDABAD which is tertiary care center; from September 2020 to august 2022 and 25 incisional hernia patients included which was admitted under department of general surgery.
RESULT:-Incisional hernia was found to be the second most common type of hernia.The incidence was more common in females, who underwent gynecological 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.
CONCLUSION:-
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 gynecological surgeries. Sterile aseptic technique and appropriate use of pre-operative antibiotics is necessary to reduce the occurrence of incisional hernia.
KEY WORDS:-*Incisional hernia,meshplasty,obesity, Infra Umbilical Midline Incision*

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I. INTRODUCTION:

Incisional hernia is defined by the European hernia society(EHS) as "any abdominal wall gap with or without a bulge in the area of postoperative scar perceptible or palpable by clinical examination or imaging".it is the second most common type of hernia. (1)Earliest description about incisional hernia and its management was done by celsus in first century AD however no attempt to repair of incisional hernia were done till 19th century. Even with the recent advances in surgery,antibiotics,suture materials and modern anesthesia the incident of incisional hernia has been reported at least 10% - 20%.(2) Mostly this patients are asymptomatic so incidence of incisional hernia might be higher than reported cases.(3) Abdominal incision differs from other incision as abdominal wall strength is different in every individual and subjected to variable presumably. (4) The overall incidence of incisional hernia is slightly higher in midline laparotomy incision as compare to the transverse incision and highest in lower abdominal incision through which most of gynecological operation are done.(5) The pressure in the lower abdomen is more than upper abdomen and there is deficit of posterior rectus sheath below umbilicus. The risk factors for incisional hernia includes Age,sex,obesity,nutritional status,smoking,emergency surgery,chronic obstructive lung disease,chronic constipation,heavy weight lifting,diabetes mellitus,jaundice,malignancy etc. (6) Increased intra-abdominal pressure and Wound infection is seen as one of the most significant prognostic risk factors for development of an incisional hernia. Majority of incisional hernias presented within the first 12 months following laparotomy,after 5 years of surgery incisional

hernia is less likely. The patients of incisional hernia presented with bulge through previously operated scar, expansion of this bulge on coughing,sneezing and straining, which causes discomfort and cosmetic anxiety in patients. On examination incisional hernia very well identified and edges of facial defect easily palpable. The treatment of ventral hernia includes primary suture repair of defect of hernia, open repair with meshplasty, laparoscopic hernia repair. The recurrence rate is more with primary suture repair in compared to open repair with meshplasty so in this modern era hernia defect repair with placement of sheets of non-absorbable prosthetic mesh is widely accepted and performed. (7) Incisional hernias are frequently associated with excess fat,Laxity of abdominal muscles and deformity in shape of abdomen with bulge through scar.

OBJECTIVES:

1) Various etiologies predisposed for incisional hernias.
2) Distribution of cases in relation to age and sex.
3) Various types of incision of previous surgery.
4) Management of incisional hernias.

II. METHODS:

THIS PROSPECTIVE STUDY CONDUCTED IN SMT.SHARADABEN GENERAL HOSPITAL, SARASPUR, AHMEDABAD (A TERTIARY CARE CENTRE) from September 2020 to August 2022. 25 incisional hernia patients included in this study which was admitted under general surgery department.

Inclusion criteria:

All adults (>18years 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 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 anesthesia 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 ethilone 2-0. Sterile dressing done. Dianaplast dressing placed to reinforce anterior abdominal wall and abdominal binder used in each patients 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 this patients presented in subsequent visit with pain at scar site and recurrence.

III. RESULTS AND DISCUSSION:

Total 25 cases were studied in which 21 patients were women and 04 patients were men. As gynecological 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 were 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(gynecological+ 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 lead 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(8).

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%
pfannenstiel	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%

PRE DISPOSING FACTORS	NO. OF CASES	%
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%

IV. CONCLUSION:

Incisional hernia is more common in women than men due to abdominal wall weakness secondary to multiple pregnancies, increased number of caesarean sections and gynecological surgeries. Infra-umbilical midline incisions should be restricted to the surgeries where access to the lower abdomen and pelvis organs is a must. 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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