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Study of incisional hernia

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Abstract

Background: Incisional Hernias are common complication of abdominal surgery. Depending on the risk factors Incisional Hernia can occurs in 12 - 30 % of patients subjected to abdominal operations.

Aims and Objective: A clinical study on risk factors, clinical presentations, management and post-operative complications in patient with Incisional Hernia.

Material and Methods: A total of 54 patients of Incisional Hernia were studied and postoperative complications were evaluated in our institute.

Results: Incidence of incisional hernia is more common in females than males and the overall M: F ratio is 1:2. Incisional hernia incidence is high in lower abdominal incisions.

Conclusions: Closure of abdominal wound in layers and prevention of wound infection reduces chances of incisional hernia.

Keywords: Incisional hernia, hernia, ventral hernia

Introduction

Incisional hernia has followed abdominal surgery like a shadow for more than a century now. Incisional hernia is the one true iatrogenic hernia. Ian Aird defines incisional hernia as a diffuse extrusion of peritoneum and abdominal contents through a weak scar of an operation or accidental wound. Incisional hernia occurs in 12- 30 % of patients subjected to abdominal operations ^[1, 2]. Many factors are associated with incisional hernia like age, sex, obesity, chest infections, type of suture material used and most important wound infection ^[1]. All these present a challenging problem to the surgeon.

Incisional hernia usually starts early after surgery, as a result of failure of the lines of closure of the abdominal wall following laparotomy. If left unattended they tend to attain large size and cause discomfort to the patient or may lead to strangulation of abdominal contents. Furthermore, an incisional hernia can incarcerate, obstruct, perforate or can cause skin necrosis all of which markedly increase the risk to patient's life.

With the advent of anaesthesia, antisepsis, antibiotics and greater understanding of anatomy, the scientific approach to hernial treatment dawned. Currently by the judicious use of the above three concepts, incisional hernia is repaired with least morbidity, mortality and recurrence rates. Almost every surgeon has got his own techniques and may modify it to suit the situation.

Laparoscopic technique of hernia repair has revolutionized the treatment of incisional hernia repair by reducing the morbidity and less hospital stay to the patient. This study has been undertaken to assess the magnitude of this problem, various factors leading to development of this condition and the different modalities of treatment practiced in our institute.

Materials and Methodology

The present study was conducted at Surgery department, Government Medical College Dungarpur, Rajasthan. The study included a total of 54 patients who fulfilled the inclusion and exclusion criteria. Once diagnosed with incisional hernia, they were subjected to a detailed clinical examination and appropriate investigations.

Inclusion criteria

- Pain and Discomfort at the site of swelling.
- Large Hernia with small opening and risk of strangulation.
- History of irreducibility, recurrent sub-acute intestinal obstruction, incarceration.
- Willing for cosmetic purposes.

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Exclusion criteria

- Uncorrected extreme obesity.
- Skin infection.
- Aatient with ascites
- Bed ridden patient with wide defect.

A total of 54 patients were included in the present study after satisfying inclusion and exclusion criteria. Written informed consent was taken. Detailed clinical history and examination findings will be entered in predesigned preform. Following investigation findings will be noted in the predesigned proforma. A detailed history of all patients was taken and a thorough clinical examination was done after written and informed consent of the patients. All patients were analysed in various aspects like age, sex, risk factors, and mode of presentation, previous operation and site of previous scar. Patients were also evaluated for other risk factors like obesity, HTN, DM and malignant disease.

Routine investigations like Blood, Urine, CXR, and ECG were done. All the cases were operated and procedure adopted was anatomical repair or mesh repair. The immediate post-operative complications were also evaluated.

Results

1. Sex Distribution

In this study of 54 cases it has been found that incidence of incisional hernia is more common in females than males and the overall M: F ratio is 1:2. This may be attributed to poor nutritional status of female patient in developing country like ours and undergoing abdominal surgery in form of caesarean and also they tend to neglect rest after such surgeries. Also there is chance of abdominal wall weakness due to multiple pregnancy. Ellis, Gajraj and George³ obtained an incidence of 64.6% female population in their study of 383 patients. J.B. Shah⁴ studies and Goel and Dubey⁵ series have male to female ratio 1:1.17 and 1:1.25(M: F) ratios respectively.

Table 1: Sex Distribution

Sex	Male	Female
Total	21	33

2. Age Distribution

The incidence of incisional hernia is maximum in the age group of 50-70 years (78%). In this study the youngest patient was 23 years and the oldest was 79 years suggesting poor wound healing in older age group leading to incisional hernia. The maximum age incidence of incisional hernia in our study has been 51-60 years which is comparable to Ellis, Gajraj and George³ study who noticed a mean age of 49.4 years.

Table 2: Age Distribution

Age Group	Total Patients
21-30	1
31-40	3
41-50	5
51-60	24
>60	21

3. Presenting Complaints

In our study all the patient presented with abdominal swelling with 39 patients having pain in abdomen. None of the patient had presented with obstruction in our study.

4. Size of Defect

Table 3: Size of Defect

Size	Total Patients
<3	15
3-6	13
6-9	12
>10	14

14 patients had hernial defect which measured more than 9 cm. 12 patients had defects between 6 - 9 cm. 13 patients had defects between 3 – 6 cm, while 15 patients had defect less than 3 cm. Thomas A. Santora *et al.*^[8] believes that the size of the fascial defect and the appearance of the fascia should dictate the selection of the most appropriate method of hernia repair.

5. Previous Surgeries

Table 4: Previous Surgeries

Previous Surgeries	Total Patients
Hysterectomy	29
Tubal Ligation	2
Perforation	18
Obstruction	4
Hydatid Cyst	1

In our study 29 patients had undergone hysterectomy with lower midline incision and 2 patients had undergone Tubal Ligation. 18 patients gave history of laparotomy for perforation and 4 for obstruction and 1 for ruptured hydatid cyst. Ponka^[6] in his study noted 36% incidence and Goel and Dubey noted 28.76% incidence among gynaecological procedures.

In our study most of the incisional hernia occurred over lower midline incisions. This may be because of the following features

- Intra-abdominal hydrostatic pressure is higher in lower abdomen compared to upper abdomen in erect position i.e., 20 cm of water and 8 cm of water respectively. Absence of posterior rectus sheath below arcuate line.
- This incision is used in gynaecological surgeries who have poor abdominal wall musculature.

6. History of Post-operative wound Complication during previous surgery

In our study 39 patients had previous post-operative complications in the form of wound infection (29 patients) and wound dehiscence (9patients). This is comparable with that of Bose *et al* studies in which wound infection (59 out of 110 patients).

7. Comorbid Factors

History of abdominal Tuberculosis was found in 1 patient of obstruction and 2 patients of perforation. Obesity was found in 16 patients and 20 patient had COPD. This is comparable with that of Bose *et al* studies in which obesity (33/110-30%), COPD (23/110 - 20.90%). 3 patients (7%) had undergone more than one operation previously which is also one of the risk factors in our study which can be compared with Ponka⁴ series (25%). Brenden Devlin⁷ states that repeated wounds in the same region or just parallel to each other will often lead to the development of herniation.

All the patient in our study underwent meshplasty; the technique of the repair was decided by the size of the hernial defect, abdominal muscle tone, whether hernial defect could be

approximated without tension and general condition of the patient. Postoperatively patients were given antibiotics and analgesics. Abdominal binder was given to all patients and were counselled to wear support for at least 6 months. Patient were followed for 6 months. Jack Abrahamson ^[9] believes that mesh repair is excellent method of repair for large ventral abdominal hernias but has not specified the size of the defect.

6 patients had developed Seroma which was managed conservatively with drainage and antibiotics.

Conclusion

Closure of abdominal wound in layers and prevention of wound infection reduces chances of incisional hernia.

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