

PREVALENCE AND RISK FACTORS OF INCISIONAL HERNIA: AN OBSERVATIONAL STUDY

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ABSTRACT

Infection at the surgical site, which leads to the development of excessive tension causing inadequate healing is the most common cause of incisional hernia. **Objective:** To find out risk factors associated with incisional hernia and its prevalence. **Method:** A general proforma was prepared for studying each case in detail and underwent routine blood, radiology investigations. A detailed enquiry was made regarding the demographic profile, history of previous operations, its nature and postoperative period. Onset and progress of the hernia were noted. **Result:** During the study period total operated cases were 921. From that 50 cases of incisional were reported during the follow-up. Out of fifty cases 12 (24%) were male, and 38 (76%) were female. Ratio of male to female is 1:3.2. The difference was found to be significant ($p < 0.05$). Maximum cases were distributed between the age group of 41-50 (32%). Overall highest prevalence of incisional hernia was noted with perforation peritonitis operation, and female it was noted with LSCS operation commonest incision was midline (76 %) which lead to incisional hernia. **Conclusion:** The prevalence rate of incisional hernia was 5.42%. Overall highest prevalence of incisional hernia was noted with perforation peritonitis operation, and female it was noted with LSCS operation. 76 % cases of incisional hernia associated with midline incision.

Keywords: Incisional hernia; prevalence; LSCS.

INTRODUCTION

Incisional (postoperative ventral) hernia is an iatrogenic abdominal wall defect that occurs at the site of previous incision following breakdown in the continuity of the fascia closure [1]. It has been described as a bulge visible and palpable when the patient is standing and often requiring support and repair [2]. It is a very common complication of abdominal surgeries and is associated with considerable morbidity and mortality [3, 4]. It is a common postoperative complication following abdominal surgery with an incidence varying between 2% and 50% [5] and extreme values ranging from 0 to 91% [6]. This wide variability probably depends on the not quite accurate reports of incisional hernias and the reparative surgery performed by a different surgeon or a too short period of follow-up.

Infection at the surgical site, which leads to the development of excessive tension causing inadequate healing is the most common cause of incisional hernia. Besides infection, obesity, pregnancy, advance age, malnutrition, ascitic and other conditions that increase

intra-abdominal pressure also contributes the increase in the incidence of incisional hernia. Like any other hernia, it can lead to pain, bowel obstruction, incarceration and strangulation [7-9]. Studies have also shown that women with a midline (vertical) incision are more likely to have a hernia than women with a transverse (horizontal) incision.

As per the literature number of women's affected are more because of anatomical variations and surgical procedures. Hence the purpose of this study was to find out risk factors associated with incisional hernia and its prevalence in women's.

MATERIALS AND METHODS

Study design: An Observational descriptive study

Ethics approval: The study was approved by the institutional ethics committee and informed consent was obtained from the participants.

Study location: Dr. Panjabrao Deshmukh Memorial Medical College Amravati, Maharashtra.

Study period: period from June 2011 to June 2013.

Sample size: In the present study convenient sampling method was used.

Inclusion criteria: The patients were operated for different surgeries in the department of surgery during the study period.



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Methodology

A general proforma was prepared for studying each case in detail and underwent routine blood, radiology (ultrasound, chest X-ray) investigations. A detailed enquiry was made regarding the demographic profile, history of previous operations, its nature and postoperative period (to know the etiology of incisional hernia). Onset (duration after which incisional hernia developed) and progress of the hernia were noted. Thorough general examination of the patient was carried out to know the general state of health and any associated disease states.

RESULTS

During the study period total operated cases were 921. From that 50 cases of incisional were reported during the follow-up. The prevalence rate was 5.42%. Out of fifty cases 12 (24%) were male, and 38 (76%) were female. Ratio of male to female is 1:3.2. The difference was found to be significantly significant (p<0.05). Which shows that the incidence of disease is high in females as compared to males

Table 1: Distribution of patients according to sex

| Sex | Patients |
|--------|----------|
| Male | 12 (24%) |
| Female | 38 (76%) |

Age wise distribution of patient: **Table 1:** Age wise distribution of patient

Table 2. Age wise distribution

| Age group | Patients |
|-----------|----------|
| 21-30 | 5 (10%) |
| 31-40 | 14 (28%) |
| 41-50 | 16 (32%) |
| 51-60 | 14 (28%) |
| 61-70 | 1 (2%) |

Minimum age at which patient presented with incisional hernia was 28 years and the maximum age at which patient presented with incisional hernia was 70 year, and maximum cases were distributed between the age group of 41-50 (32%).

Overall highest prevalence of incisional hernia was noted with perforation peritonitis operation, and female it was noted with LSCS operation.

Table 3. Type of operation patient had undergone earlier

| Type of surgery performed | Patients |
|---------------------------|----------|
| Tubectomy | 4 (8%) |
| Hysterectomy | 2 (4%) |
| Lscs | 12 (24%) |
| Appendectomy | 4 (8%) |
| Perforation peritonitis | 16 (32%) |
| Ectopic pregnancy | 2 (4%) |
| Intestinal obstruction | 2 (4%) |
| Psoas abscess | 1 (2%) |
| Lump in abdomen | 5 (10%) |
| Hydatid cyst of liver | 2 (4%) |

Table 4. Type of incision used in previous operation

| Type of incision | Patients |
|------------------|----------|
| Midline | 38 (76%) |
| Paramedian | 2 (4%) |
| Gridiron | 4 (8%) |
| Pfannanstiel | 3 (6%) |
| Subcostal | 2 (4%) |
| Right lumbar | 1 (2%) |

From the table it was found that in females commonest incision was midline (76 %) which lead to incisional hernia.

DISCUSSION

Our study highlighted the prevalence of hernias and their risk factors. Being a commonly performed general surgical operation, abdominal wall hernia comprises a significant proportion of total surgical work load in most of the hospitals.

In our series/ male to female ratio was 1: 3.2. (Table 2). High incidence in female is reported by the other workers also such as Zimmarman [10] and Goel [11] the male to female ratio being 1:4.

The results of the study done by Ahmed Alenazi A et al also showed that, hernias were significantly more prevalent in females than in males (63.4% vs. 36.6%) [12].

The structural differences between males and females may cause variations in both frequency and pattern of hernias. High prevalence of incisional hernia in females may be attributed to; Comparatively lax abdominal wall and poor muscle tone. According to Watson, distention of abdomen and stretching of the abdominal wall during pregnancy. Weakens the abdominal wall and cause flaccidity after delivery [13].

It was also mentioned that comparatively more amount of subcutaneous fat in female which holds the sutures poorly and predisposes to postoperative wound infec-

tion [14]. Frequency of lower midline incision employed for gynecological and obstetrical operations, where posterior rectus sheath is deficient gives a weak scar, liable to herniation.

It may also be a reflection of the increase in the number of surgical operations, particularly obstetric and gynaecological surgeries which are common in this group of patients. Most studies that have evaluated incisional hernias have also reported a higher incidence in women with majority occurring following obstetric surgeries [15].

More than one fifth of our participants represented with previous abdominal surgery which included LSCS. (Table 3) These findings are supported by findings from south-western Nigeria [16], which stated that post obstetric and gynecologic surgical interventions ranked highest as the cause of incisional hernias. This could be due to the weakness of the abdominal wall following surgery.

Around 76 % of patients with Incisional hernia were previously operated using midline incision (Table 4). The midline incision is a preferred manner to achieve exposure of the abdominal cavity and is considered to be easily performed and quick. Although the midline incision is generally accepted, the incidence of incisional hernias is surprisingly high [17]. The choice for a particular incision should not only be based on exposure, but also on hernia incidence reduction, especially since recurrence rates after hernia repair are reported to be very high.

CONCLUSION

The prevalence rate of incisional hernia was 5.42%. Overall highest prevalence of incisional hernia was noted with perforation peritonitis operation, and female it was noted with LSCS operation. 76 % cases of incisional hernia associated with midline incision.

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