

## Epidemiology of Patients with Incisional Hernia in Kashmir Region

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### ABSTRACT

**Introduction:** A hernia is the abnormal exit of tissues or an organ through the wall of cavity in which it normally reside. In the modern world with an increase in the number of surgeries performed, the incisional hernias have emerged as an important concern in any post-surgical abdomen. Overall, the incidence of the incisional hernia reported world-wide is 3% to 20%.

**Materials and methods:** The study was conducted in SMHS Hospital of Government Medical College, Srinagar. All patients presenting form 2014 to 2018 in the surgical OPD of the hospital with Incisional hernia were included in the study. A detailed enquiry of risk factors like obesity, hypertension, diabetes mellitus and malignant disease, number of previous surgeries and nature of previous abdominal surgery was recorded and the data was systemically recorded and statistically analysed.

**Results and observations:** In a total of 300 patients included in our study, 63 were males and 237 were females. While majority of patients were in the age group between 30 and 60 years, the mean age was  $48.5 \pm 12.1$  years. Majority of the patients had an incisional hernia following a pelvic surgery by an infraumbilical midline incision; LSCS in 65.8% of females and abdominal hysterectomy in 12.6% of patients. Most common comorbidities in our patients with incisional hernias were BMI > 35 kg/m<sup>2</sup> in 25.6% of the patients followed by both diabetes and hypertension in 19% of the patients and diabetes and hypertension in 12.3% and 17.6% of patients, respectively.

**Conclusion:** We concluded that in patients with high risk of incisional hernia a proper attention to the suture technique, i.e., mass and continuous suture, use of non-absorbable suture material, closure by a senior surgeon, better preparation of the operative field and scrupulous sterility throughout the procedure in order to decrease the incidence of post-operative wound infection should be followed strictly so as to minimize the occurrence of this preventable post-surgical complication of the wound.

**Keywords:** Hernia, Incisional hernia, Laparoscopic

### INTRODUCTION

A hernia is the abnormal exit of tissues or an organ through the wall of cavity in which it normally reside (often involving the intestine at a weak point in the abdominal wall). Abdominal wall hernias occur only at sites where aponeurosis and fascia are not covered by striated muscles. Groin hernias are most common type of hernia other hernias include hiatus, incisional and umbilical. In the modern world with an increase in the number of surgeries performed, the incisional hernias have emerged as an important concern in any post-surgical abdomen. Incisional hernia develops in the scar of a wound in the abdominal wall, which was inflicted during previous surgery. Overall, the incidence of the incisional hernia reported world-wide is 3% to 20% [1,2]. However, different areas have different incidences. Till now, there is very limited data available on the incidence of abdominal incisional hernia in developing countries. We performed a study to assess the incidence of this disease and

the possible risk factors for the disease prevalent in this part of the world.

### MATERIALS AND METHODS

The study was conducted in SMHS hospital of Government medical College Srinagar. All patients presenting form 2014 to 2018 in the surgical OPD of the hospital with Incisional hernia were included in the study. A detailed history and clinical examination of all patients was obtained. A detailed

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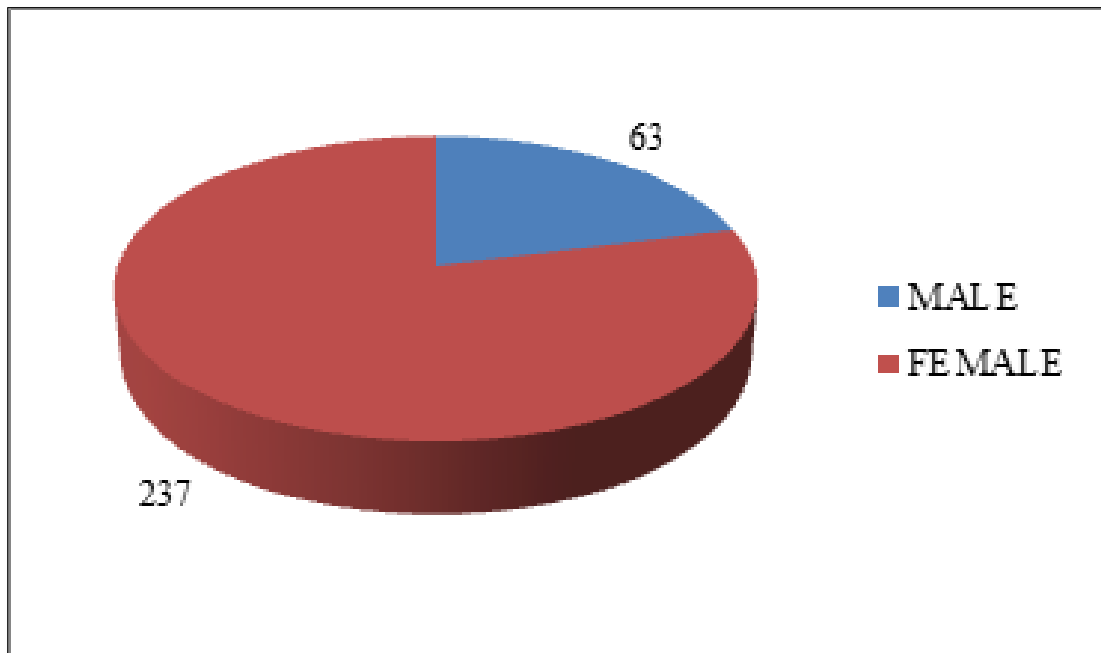
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enquiry of risk factors like obesity, hypertension, diabetes mellitus and malignant disease, number of previous surgeries and nature of previous abdominal surgery was recorded. Routine investigations were also documented. The recorded data was systemically recorded and statistically analysed.

**RESULTS AND OBSERVATIONS**

In a total of 300 patients included in our study, 63 were males and 237 were females. Pie chart below shows the sex distribution of patients in our study (**Figure 1**).



**Figure 1.** Sex distribution of patients in our study.

In our study, majority of patients were in the age group between 30 and 60 years with a mean age of  $48.5 \pm 12.1$  years. The table shows the age distribution of patients in our study (**Table 1**).

**Table 1.** Showing age distribution of patients in our study.

Age group	No. of patients	Percentage
11-20	4	1.33%
21-30	8	2.67%
31-40	68	22.67%
41-50	97	32.33%
51-60	72	24%
61-70	39	13%
71-80	12	4%

In our study majority of the patients had an incisional hernia following a pelvic surgery by an infraumbilical midline incision; LSCS in 65.8% of females and abdominal

hysterectomy in 12.6% of patients. **Figure 2** below shows the nature of the surgery leading to incisional hernias in our patients.

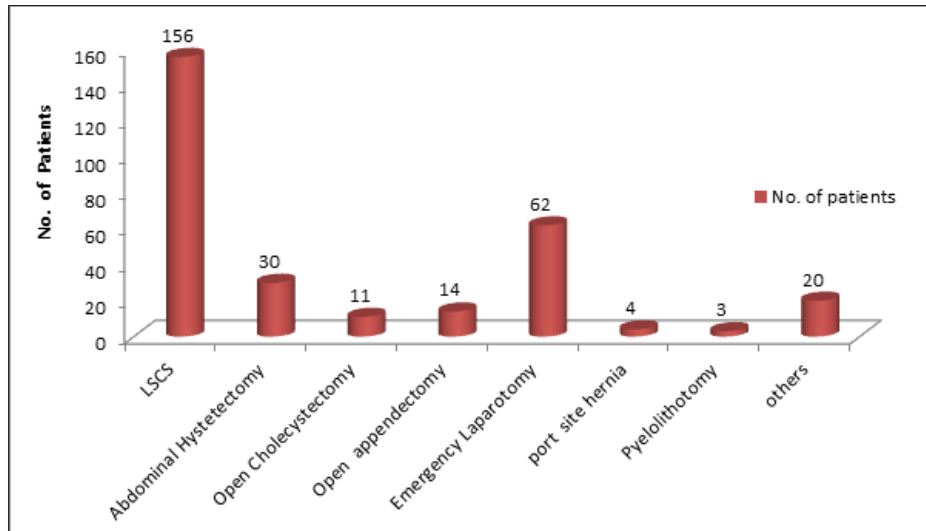


Figure 2. Showing nature of the procedures done in our patients with incisional hernias.

Figure below shows the co-morbidities noted in the patients included in our study. Approximately 26.3% of patients in our study had BMI more than 35 Kg/m<sup>2</sup> (Figure 3).

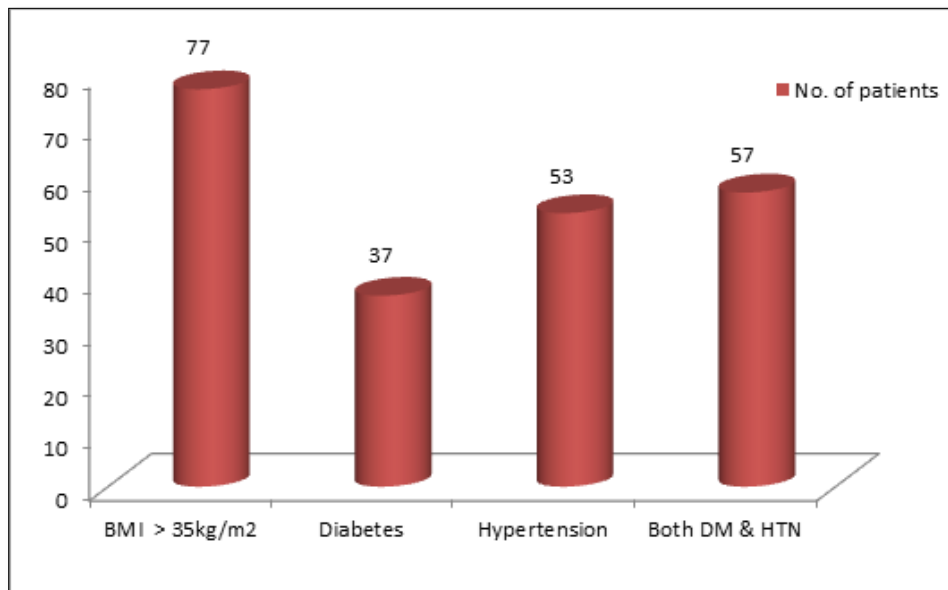


Figure 3. Comorbidities noted in the patients in our study.

**DISCUSSION**

Incisional hernia is one of the commonest complications of abdominal surgery. Incisional hernia can develop at different times from surgery, however, majority of Incisional hernias about 90% occur during the first 3 year of surgery [3]. It varies between 11% and 20% in uncomplicated wounds [4-6]. In this study, we studied the demography of patients presenting with incisional hernia. In our study, majority of patients were females. In a total of 300 patients, 79% were females and 21% were males. Ellis et al. [7] also obtained an

incidence of 64.6% of incisional hernia in female population in their study of 383 patients. Malviya et al. [8] also had incisional hernia in 34.42% of male and 65.57% of female patients with overall M: F ratio 1:2 approx. confirming a female preponderance of incisional hernia as noted in our study.

In our study, we observed that incisional hernia was particularly common in 41 to 50 year age group followed by 51 to 60 year and 31-40 year age groups with an incidence of 32.33%, 24% and 22.67% of incisional hernias

respectively. Malviya A et al in their study on incisional hernia also observed that the incidence of incisional hernia was maximum in the age group of 31-60 years (67.21%) [8]. The mean age of patients in our study was  $48.5 \pm 12.1$  years. This is in accordance with the study of Ellis, Gajraj and George who also noticed a mean age of 49.4 years in their study on Incisional hernias [7].

In our study we noticed that while incisional hernia was more common in females than males. Majority of females had an incisional hernia following LSCS (65.8%) and abdominal hysterectomy (12.5%) through an infra-umbilical midline incision. Emergency laparotomy accounted for about 20.6% cases of incisional hernias. Open cholecystectomy and appendectomy accounted for 3.6% to 4.6% Incisional hernias. In our study, we also noted 4 port site hernias following laparoscopic procedures. All such cases occurred through the umbilical port. Malviya et al. [8] in their study on incisional hernia also noted that approximately 50% of the patient with incisional hernia had undergone a gynaecological procedure, among which caesarean section the commonest operation was followed by abdominal hysterectomy. Mingoli et al. [9] also in their study noted 18.1% incidence of incisional hernia following emergency laparotomies. Purushothaman et al. [10] in their study on incisional hernias also noted a very low incidence of incisional hernias after elective surgeries and open appendectomies (8.1%). Julie et al. [11] in their study noted the incidence of port site hernias via extended 5 mm ports to be around 0.1 to 5% which is comparable with our results of 1.3% incidence via 10 mm port sites.

In our study, we observed that the most common comorbidities in our patients with incisional hernias were  $BMI > 35 \text{ kg/m}^2$  in 25.6% of the patients followed by both diabetes and hypertension in 19% of the patients and diabetes and hypertension in 12.3% and 17.6% of patients, respectively. Sidhu et al. [12] also observed in their study that diabetes, hypertension (HTN) and body mass index (BMI) had persistent significant positive associations with the development of an incisional hernia.

## CONCLUSION

From this study, we concluded that the rate of incisional hernia is higher after an emergency midline laparotomy than after elective procedures. And the risk is particularly high in females undergoing pelvic surgeries with comorbidities like  $BMI > 35 \text{ kg/m}^2$ , Diabetes mellitus and hypertension. Therefore from the observations of this study, we suggest that in such patients a proper attention to the suture technique, i.e. mass and continuous suture, use of non-absorbable suture material, closure by a senior surgeon, better preparation of the operative field and scrupulous sterility throughout the procedure in order to decrease the incidence of post-operative wound infection should be followed strictly so as to minimize the occurrence of this preventable post-surgical complication of the wound.

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