

# A study of predisposing factors associated with the incisional hernia at tertiary health care center

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## Abstract

**Introduction:** Incision hernia is iatrogenic and its incidence has increased with each increment of abdominal surgical intervention. An incisional hernia is perfect example of surgeon dependent variable. Incisional hernia is defined as hernia through previous incisional scar. **Aims and Objectives:** To Study predisposing factors associated with the incisional hernia at tertiary health care center **Material and Methods:** This study was carried out at R.C.S.M. Government Medical college and C.P.R. General Hospital, Kolhapur for a period of 2 years i.e. from April 2011 to March 2013. Total 50 cases were studied. The cases had a detailed clinical examination in view of position, size, shape of hernia, previous scar, contents of hernia, reducibility, size of defect. Tone of muscles, cough impulse and skin over swelling **Result:** The study shows that the majority of the patients are in the age group of 31-40 years. The study shows that incisional hernia is more in females than in males with female to male ratio 3.1:1. Majority of incisional hernia occurred below the umbilicus (50) i.e. lower midline and Pfannensteil incision. 34 percent of patients had undergone previous surgery on an emergency basis. The majority of the patients were having risk factors like Obesity in 12 patients followed by, H/o Smoking / Tobacco chewing in 8 patients; Anemia in 6; Asthma in 2; URTI/Chronic cough in 2. **Conclusion:** It can be concluded from our study that the most important predisposing factors were female sex, below the umbilicus incisions, and associated risk factors like H/o Smoking / Tobacco chewer, Anemia, Asthma, URTI/Chronic cough.


**Keywords:** Incisional hernia, Smoking / Tobacco chewing, Anemia, Asthma, URTI/Chronic cough.

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## INTRODUCTION

Incision hernia is iatrogenic and its incidence has increased with each increment of abdominal surgical intervention. An incisional hernia is perfect example of surgeon dependent variable. Incisional hernia is defined as hernia through previous incisional scar. All abdominal incisions weaken the integrity of the abdominal wall. Incisional hernia is very likely to develop within months or perhaps few years after surgery. Incisional herniae may

become apparent during the early months after surgery when there has almost certainly been some deep wound dehiscence in the postoperative period<sup>1</sup>. An incisional hernia usually starts as a symptomless partial disruption of the deeper layers of a laparotomy wound during the immediate or very early postoperative period. A serosanguinous discharge is often the signal of dehiscence.<sup>1</sup> Based on National operative statistics, incisional hernia accounted for 15 to 20 % of all abdominal wall hernias. Incisional hernias are twice as common in women as in men. The incidence of ventral herniation after mid line laparotomy ranged from 3% to 20% and doubles if the operation was associated with a surgical site infection.<sup>2</sup> Among these, 80–95% develop within 6 months to 3 years after initial surgery.<sup>3</sup> Obesity, malnutrition, advanced age, malnutrition, ascites, pregnancy, and conditions that increase intra-abdominal pressure are factors that predispose to the development of incisional hernia. Chronic pulmonary disease, diabetes mellitus, medications such as corticosteroids and chemotherapeutic agents and surgical site infections can

contribute to poor wound healing and increase the risk for developing an incisional hernia.<sup>4</sup>

**MATERIAL AND METHODS**

This study was carried out at R.C.S.M. Government Medical college and C.P.R. General Hospital, Kolhapur for a period of 2 years i.e. from April 2011 to March 2013. Total 50 cases were studied. Following criteria were applied to the cases-Patient presenting with incisional hernia in surgical OPD and getting admitted in surgical ward during study period were included into the study while patients with age less than 12 years, with recurrent incisional hernias were excluded from the study. A written well informed consent explained to patient in his language regarding participation in study was taken. A through history of each patient in the study was taken regarding the onset and progression of symptoms like pain, vomiting, cough, dysuria, reducibility and association with pregnancy. History regarding the previous operative episode in view of indication, duration of hospital stays, day of suture removal, post-operative complications was taken which helped to clinch the cause behind formation of weak scar. A proper personal history regarding chronic cough, bladder and bowel complaints, addictions was taken which would have contributed to etiology of incisional hernia. The cases had a detailed clinical examination in view of position, size, shape of hernia, previous scar, contents of hernia, reducibility, size of defect. Tone of muscles, cough impulse and skin over swelling.

**RESULT**

**Table 1:** Age distribution of incisional hernia

Age (years)	No.of cases	Percentage (%)
12-20	-	-
21-30	7	14
31-40	19	38
41-50	10	20
51-60 yrs	9	18
61-70 yrs	5	10
<b>Total</b>	<b>50</b>	<b>100</b>

The study shows that the majority of the patients are in the age group of 31-40 years.

**Table 2:** Sex distribution of incisional hernia

Sex	No of cases	Percentage
Male	12	24
Female	38	76
<b>Total</b>	<b>50</b>	<b>100</b>

The study shows that incisional hernia is more in females than in males with female to male ratio 3.1:1.

**Table 3:** Nature and type of previous incisions (previous surgery)

Type	Surgery	No. of cases	Percentage (%)
Umbilicus	Lap tubal ligation/appendectomy	7	14
Lower midline	Tubectomy cystolithotomy hysterectomy LSCS.	18	36
Midline	laparotomy	11	22
Pfannenstiel	L.S.C.S, hysterectomy	7	14
Mc.burneys	appendectomy	6	12
Right inguinal	Hernioraphy	1	2

From the study it was concluded that majority of incisional hernia occurred below the umbilicus (50) i.e. lower midline and pfannenstiel incision.

**Table 4:** Elective Vs emergency surgery

Type	No of cases	Percentage
Elective	33	66
Emergency	17	34
<b>Total</b>	<b>50</b>	<b>100</b>

In this study 34 percent of patients had undergone previous surgery on an emergency.

**Table 5:** Other -risk factors

Risk factors	No. of cases	Percentage (%)
Obesity	12	40.00
Smoker/ Tobacco chewer	8	26.66
Anemia	6	20.00
Asthma	2	6.67
URTI/Chronic cough	2	6.67
<b>Total</b>	<b>30</b>	<b>100</b>

The majority of the patients were having risk factors like Obesity in 12 patients followed by, H/o Smoking / Tobacco chewer in 8 patients; Anemia in 6; Asthma in 2; URTI/Chronic cough in 2.

**DISCUSSION**

In this clinical study a total number of 50 patients with incisional hernia, were admitted and treated in C P R Hospital, Kolhapur from April 2011 to March 2013. These patients were evaluated for various risk factors in causation of incisional hernia, its clinical presentation and evaluated for outcome of different types of repair. This study may not reflect all the aspects of incisional hernia, as the series is small of 50 patients and follow up has been for a short period in most of the cases. The majority of patients are in age group between 31 to 40 years. *J et al*<sup>11</sup> stated that majority of cases were >45 yrs. The sex incidence of incisional hernia among the 50 cases studied is 3.1:1. (female: male) which is in favor of females clearly indicating that the incidence of incisional hernia is more common in females than in males. The incidence is more common in female because of laxity of abdominal

muscles due to multiple pregnancies. In males the incidence is relatively less as most of the surgeries are above the umbilicus and the strength and integrity of abdominal wall is good because of well-developed muscles and fascia. Mean age of incisional hernia presentations is 47 years and there is female preponderance<sup>6</sup>. Most of the patients in our study presented with swelling in previous abdominal incision (86%). Most patients of incisional hernia complain of visible buldge which may cause vague discomfort or be asymptomatic<sup>7</sup>. J. Nieuwenhuismallzen *et al* have described the natural course of incisional hernia in their literatures<sup>8</sup>. Trophic ulcers are present in small number of very large hernias. They are situated at most dependent areas of abdominal wall and occur as a result of ischemia. Usually they are infected by staphylococcus and should be treated<sup>9</sup>. In this study, 50% of incisional hernia have occurred in midline below the umbilicus. This is due to the facts that, Intra-peritoneal pressure is hydrostatic and in the erect position, the upper abdominal pressure remains at 8 cm of water while the lower abdominal pressure increases to 20 cm of water. With the change of posture from recumbency to standing. Posterior rectus sheath is absent below the arcuate line in the lower abdomen. Since all vertical incisions are subjected to more stress when compared to transverse incisions. In our study, 48% of patients developed incisional hernia within one years of previous surgery. Totally 68% of patients developed incisional hernia within two years of previous surgery and only 12% of patients developed incisional hernia after five years of previous surgery. In akman's<sup>10</sup> (1963) series more than 65% of the incisional hernias occurred within one year of previous surgery. In a 10 year prospective trial involving 337 patients, mudge and hughes<sup>11</sup> showed that of the 62 patients who developed incisional hernia, 56% did so after the first post-operative years, and 35% manifested their hernia after 5 years. Most of incisional hernias occur during first 6 months' post operatively<sup>12</sup>. Out of 50 cases studied, 3 patients had hypertension, 2 patients had diabetes mellitus. Chronic respiratory problem was found in 2 patients and 2 patients were known asthmatic. Surgery in patients with COPD is supposed to be associated with increased incidence of incisional hernia. Also Goel A Dubey<sup>13</sup> found 48% incisional hernias through lower midline incisions.

Manohar <sup>14</sup>*et al* found 74% incisional hernias were through sub umbilical midline incision.

## CONCLUSION

It can be concluded from our study that the most important predisposing factors were female sex, below the umbilicus incisions, and associated risk factors like H/o Smoking / Tobacco chewer, Anemia, Asthma URTI/Chronic cough.

## REFERENCES

1. Margaret Farquharson and Brenden Moran Farquharson's Textbook of Operative surgery; ninth edition 2005; pg no 2085.
2. Courteny M. Townsend, RD Beuchamp, B. Markevers, K L J Mattox; Sabiston Textbook of Surgery; 19th edition ; Vol II, pg 1129-1130.
3. Richards PC, Balch CM, Aldrete JS: Abdominal wound closure: A randomized prospective study of 571 patients comparing continuous versus interrupted suture techniques. *Ann Surg* 1983; 197:238-243.
4. Courteny M. Townsend, RD Beuchamp, B. Markevers, K L J Mattox; Sabiston Textbook of Surgery; 19th edition ; Vol II, pg 1132-1133
5. A bhattacharai, R.S, Bhandari; journal of institute of medicine; tribhuvan university teaching hospital vol.32, No.1, 2010.
6. Parswa Ansari; Hernias of abdominal wall: Merck Manual, August, 2012
7. Hoer J, Lawong G et al, A retrospective study of 2983 laparotomy patients over a period of 10 years; *chirurg* 2002 May; 73(5); 474-80
8. J, Nieuwenhuizen J. A. Halm, Jeekel et al; Natural course of incisional hernia and
9. Andrew kingsworth; the management of incisional hernia: annual journal of royal college of surgery. England 2006. May; 88(3): 252-260.
10. Akman P.C.: Journal of Int. College of surgeons, 37, 125: 1963.
11. Mudge M, Hughes L. E; incisional hernia: a 10 years prospective study of incidence and attitude. *Br J surg* vol.72 (1985):70-71.
12. Claudio Cicchese, Giancarlo paglione; the complication in surgical treatment of incisional hernia; 2008. P.g.245-258
13. Goel T.C. Dubey P.C. Abdominal incisional Hernia Anatomical technique of repair; *Indian J of Surgery* 1991.43,324.
14. Dr. Manohar C.S. Dr. K.Ramadev Management of incisional hernia by preperitoneal mesh repair; *International Journal of Basic Medical Science* Volume 1 issue 3 June 2011

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