

## COMPARISON BETWEEN OPEN AND LAPAROSCOPY INCISIONAL HERNIA REPAIR



### Medical Science

**KEYWORDS :** Incisional hernia; laparoscopic repair; open repair; complications.

**Dr. Rakesh Ahir**

Senior Resident Doctor, AMC MET Medical College & L.G.Hospital, Maninagar, Ahmedabad.

**Dr Kalpit Suthar**

Assistant Professor, AMC MET Medical College & L.G.Hospital, Maninagar, Ahmedabad.

### ABSTRACT

**INTRODUCTION:** Incisional hernia is a common complication of abdominal surgery and an important source of morbidity. It may be repaired using open or laparoscopic methods. This study analyses the etiopathogenesis, modes of presentation, modalities of treatment like open or laparoscopic repair and its outcome.

**AIM & OBJECTIVES:** To Compare between Open and Laparoscopy Incisional Hernia

**METHODS:** Between June 2010 and Sept 2012, patients with incisional hernia who got admitted at Smt.V.S.General Hospital & NHL.Medical College in the department of surgery were subjected to open v/s laparoscopic depending upon the surgeon's choice and size of the hernial defect. Data was collected and analyzed.

**RESULTS:** Incisional hernia was found to be the 2nd most common type of hernia. The incidence was more common in females, who underwent gynaecological procedures by lower midline incisions. It was found to be more common in the age group of 30-50 years. Predominant risk factors being wound infection and obesity. Majority of the patients presented with swelling and within 3 years of previous surgery. The complications following surgery was found to be less with laparoscopic repair than open repair. The post operative complications noted were mainly wound infections and seroma formation.

**INTERPRETATION & CONCLUSION:** laparoscopic repair results in less post operative complications than open repair for incisional hernia.

### INTRODUCTION

Incisional hernia is one where there is protrusion of part or whole of abdominal viscus through the weakness in layers of anterior wall in the scar of previous operation. Incisional hernia is a condition which occurs after surgery. With the evolution and development of recent surgery and rapid increase in number of abdominal operations, the frequency of incisional hernia has increased. They are the 2<sup>nd</sup> most frequent type of hernia. Incisional hernia complication occurs in 5-11% of abdominal wound. The major predisposing factors being post operative wound infection or haematoma. This incidence increases in the presence of adverse factors (local and systemic) such as wound infection, obesity, hypoproteinemia<sup>[2,3]</sup> It is better to prevent the incisional hernia, but once occurred, it is necessary to cure it by providing surgery, open repair or laparoscopy repair. The studies showed that the complication seen in open incisional hernia repair, are seroma, haematoma, wound infection, stitch sinus, and recurrence, to overcome this complications and recurrent rates of open incisional hernia repair the Laparoscopic repair of incisional hernia was introduced in the 1990s, which reports have showed more improvement in recovery time, hospital stay and complication rate. The recurrence rates obtained with laparoscopic incisional hernia repair varies between 0 and 9 percent-age in Heniford<sup>4</sup> and Franklin<sup>5</sup> studied.

### AIM AND OBJECTIVES

- To Compare between open and laparoscopic surgery for incisional hernia
- To analyze various etiological factors of incisional hernia.
- To find out the incidence for age and sex.
- To study the immediate postoperative complication

### MATERIALS AND METHODS

The study has been carried out, during the period of July 2010 to September 2012 at department of surgery in our institute. A total number of 50 cases were studied and were followed up for a period of 3 months. patients having Wall defect: >3cm to <8cm, Post surgical and gynecological procedure, BMI < 30 kg/m<sup>2</sup> and Patient willing for surgery were included in study. Those patients having Complicated hernia, BMI >30 kg/m<sup>2</sup> were not included in study. A written informed consent for operation after explaining type of surgery [Open repair or laparoscopy repair], Anaesthesia and pneumoperitoneum and conversion to open repair if

needed was obtained. All patients were informed pre operative preparation, anaesthetic preparation and per operative and post operative complications. All patients were operated under spinal / general anesthesia by open / laparoscopy method. All the patients were followed up on 2<sup>nd</sup>, 7<sup>th</sup>, 15<sup>th</sup> postoperative day and then at 6 months.

### RESULTS:

50 patients, half(50%) were operated by open surgical method and half(50%) were operated by laparoscopic method. Female patients were more affected than male. Young adults between age group of 31-50yrs (Table:1) were more affected. Most common etiological factor was gynaecological procedure (L.S.C.S), followed by exploratory laparotomy (Table:2). In post operative complication most common one was pain, which were more in open repair (Table:3) and second was wound seroma.

**Table:1 Age and sex incidence**

Age group	Laparoscopic		Open		Total	
	M	F	M	F	M(%)	F(%)
21-30	01	03	-	02	01(2%)	05(10%)
31-40	02	06	02	07	04(8%)	13(26%)
41-50	03	06	01	06	04(8%)	12(24%)
51-60	-	01	03	02	03(6%)	03(6%)
61-70	-	02	01	01	01(2%)	03(6%)
Above 70	-	01	-	-	-	01(2%)
Total	06	19	07	18	13(26%)	37(74%)

**Table:2 Etiological factors for Surgeries:**

Operation	No. of patients	Percentage %
Abd. Hysterectomy	06	12%
L.S.C.S.	13	26%
Open TL	04	08%
Lap.TL	06	12%
Exploratory laparotomy	12	24%

Peritonitis[Laparotomy]	03	06%
Lap.Appendectomy	01	02%
Open Appendectomy	01	02%
Lap.Cholecystectomy	02	04%
Nephrectomy	01	02%
Tubectomy	01	02%

**Table:3 Post Operative Complications**

Complications	Lap.	Open
Pain	05[10%]	17[34%]
Resp.Distress	-	01[2%]
Urinary Retention	-	03[6%]
Wound Seroma	05(10%)	04[08%]
Suture track infection	-	05[10%]
Port Site infection	02[4%]	-
Recurrence	-	-
Mesh infection	-	-
Bowel Complication	-	01[2%]

**DISCUSSION**

50 cases of incisional hernia admitted in our institute in Ahmedabad for treatment, between July 2010- Sept 2012 are presented in this study. Incisional hernia is most common in female(74%). Carbaño6 study 73 % female in (30patients) laparoscopic repair and 60% female in(30 patients) open repair , Ramshaw7 study 56% female in (79 patients) laparoscopic repair and 55% female in(174 patients) open repair. Maximum age incidence of incisional hernia in our study has been 30-50 years. Ellis, Gajraj and George8 in their study noticed a mean age of 49.4 years. In our study the sex incidence of incisional hernia among the 50 cases studied is 1:4 (M:F) approximately showing a female preponderance. This is because of laxity of abdominal muscles due to multiple pregnancies and also an increased incidence of obesity in females. Ellis, Gajraj and George8 obtained an incidence of 64.6% female population in their study of 383 patients. In our study, 17 (58.62%) - 12 (41.38%) patients was presented with abdominal swelling and pain in abdomen, 5 (31.25%) - 11 (68.75%) patients was presented with only abdominal swelling, 2(4%) - 3(6%) patients was presented with pain

in abdomen as the chief complain.. in Laparoscopic incisional hernia repair and open incisional hernia repair respectively. In our study over 60 % of cases occurred following gynaecological procedures (Hysterectomy, Tubectomy, Caesarean sections). This may be because most of these procedures were done through lower midline incisions. Ponka9 in his study noted 36% incidence and Goel and Dubey10 noted 28.76% incidence among gynaecological procedures. In our study, 17 patients had post operative pain in open surgery, 5 patients in laparoscopic surgery,9 patients had wound seroma seen in open surgery, seroma formation which was treated by drainage and dressings. Olmi11 study, complications occurred in 8(16%) patients in the laparoscopic group. 6 were persistent seromas.With thorough patient evaluation, pre operative skin preparation, meticulous surgical technique, use of peri-operative broad spectrum antibiotics, nasogastric aspiration, early ambulation, less hospital stay and chest physiotherapy, complication rates in our study were minimized. In our study with laparoscopic repair early ambulation, less hospital stay, early return to work, less post operative complications. Olmi11 study mean hospital stay in laparoscopic group 2.1(1-4) days and open group 8.1(6-14)days . Carbaño6 study mean hospital stay in laparoscopic group 2.23(1-4) days and open group 9.06(6-14)days.Thus the superiority of laparoscopic repair over open repair can be accounted for.

**CONCLUSION**

50cases of incisional hernia admitted in our institute, It was more common in females than in males with a ratio of approximately 4 : 1 and was highest in the age group ranging from 30-50 years and common in patients with previous history of gynaecological operations (60%). Post operative complications included 17 patients had post operative pain in open repair, 5 patients in laparoscopic repair,9 patients had wound seroma seen in both open and laparoscopic repair. Post operative complications were minimum in laparoscopic repair and there was no recurrence in my study though the period of follow-up and there was no reported mortality.

Aseptic technique and careful closure of the Abdominal wound is necessary to prevent incisional hernia. Proper preoperative preparation of the patients with high risk is an important factor in preventing recurrence of incisional hernia. Laparoscopic repair results in less post operative complications, a lower incidence of wound infection, early ambulation, shorter in hospital stays, early return to work than Open repair for incisional hernia.

**REFERENCE**

- 1) The results of incisional hernia repair : 12 year review . J of the Royal college of surgeons of England 1986 vol.68. | 2) Hesselink VJ, Luijendijk R, et al: An evaluation of risk factors in incisional hernia recurrence. Surg Gynecol Obstet 176:228, 1993. [PMID: 8438193] | 3) Santora TA, Koslyn JJ. Incisional hernia .Surg clin North Am 1993 ; 73 : 557-70. | 4) Heniford BT, Park A, et al: Laparoscopic ventral and incisional hernia repair in 407 patients. J Am CollSurg 190:645, 2000. [PMID: 10872998] | 5) Franklin ME ,Dorman JP,Glass JL, Balli JE, Gonzalez jj.Laparoscopic ventral hernia and incisional hernia repair .Surg Laparosc Endsc 1998; 8: 294-9. | 6) Carbaño MA, Martpedel, Olmo JC, Blanco JL. Laparoscopic approach to incisional hernia . Surg Endoscopy 2003; 17(1): 118-22 | 7) Ramshaw BJ, Esartia P, et al: Comparison of laparoscopic and open ventral herniorrhaphy. Am Surg 65:827, 1999. [PMID: 10484084] | 8) Ellis H, Gajraj H, George CD. Incisional hernias- when do they occur? Br J Surg 1983; 70: 290-72 | 9) Ponka JL, Hernias of the abdominal wall. Philidelphia, PA :WB Saunders; 1981. | 10 ) Goel TC, Dubey PC. Abdominal incisional hernia- Anatomical technique of repair. | Indian Journal Of Surgery 1981;43:324-27 | 11 ) Olmi S,Magnone S, Erba L, Bertolini A, Croce E. Results of laparoscopic versus open | abdominal and incisional hernia repair. Jsls Surgeons / society of laparoendoscopic | surgeons 2005;9(2):189-95.[PUBMED:15984708] |