IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 15, Issue 6 Ver. XIV (June 2016), PP 14-19
www.iosrjournals.org

A Comparative Study on Various Techniques in the Management of Incisional Hernia

Prof. Dr. A Nirmala M.S, D.G.O, Asst. Prof. Dr. R. Swaminathan M.S,
Asst Prof. Dr. N.Jeeva M.S, Asst. Prof. Dr. V.Sivakumar M.S
Department Of General Surgery, Government Mohan Kumaramangalam Medical College And Hospital, Salem Tamil Nadu, India.

Abstract:
Background: *Incisional hernia is a hernia arising from previous surgical wound site. Incisional hernia occurs in 2 - 12 % of all patients who undergo abdominal surgeries. There are many surgical techniques available, but consensus is lacking.*
Aims and objectives: *This study aims to analyse the etiological factors ,incidence, mode of presentation ,therapeutic modalities and post operative complications.*
Materials and methods: *This prospective study of 60 consecutive cases of incisional hernia admitted in GMKMCH , salem was done in the period from july 2013 to june 2015 and these 60 patients were studied and followed up for immediate postoperative complications.*
Observations and Results: *In our study , commonest age group having incisional hernia is between 30 to 50 years (46.6%). Females are common.(61.7%) the most common previous surgery to develop incisional hernia is laparotomy (58.3%). The most common surgical incision is median vertical.(45.1%)Most of the patients (25.3%) have wound dehiscence.47% of patients had incisional hernia within 1 year of previous surgery. Sublay technique had less postoperative complication.*
Conclusion: *Open Sublay mesh repair and Laparoscopic mesh repair are the best method in our study compared to others.*
Keywords: *Component Separation ,Incisional Hernia, Laparoscopy ,Mesh repair, Onlay, Sublay.*

I. Introduction

Incisional hernia is defined as any abdominal wall gap with or without a bulge in the area of postoperative scar perceptible or palpable by clinical examination or imaging. Incisional hernia[1] occurs in 2 - 12 % of all patients who undergo abdominal surgeries. There are many surgical techniques available, but consensus is lacking.each technique has its own merits and demerits. Each technique has its own merits and demerits. Recurrence is common depends on technical error, patient's error and due to materials. The key concept for hernia repair is tension free repair. Now a day's mesh is used for fascial defect closure without tension. The anatomical repair, Ramirez's[10] component separation is technique is available for infected wound, large hernia and multiple defects with tension free repair.

II. Aims And Objectives

This study aims to analyse the etiological factors, incidence, mode of presentation, therapeutic modalities and post operative complications.

III. Materials And Methods

This prospective study of 60 consecutive cases of incisional hernia admitted in GMKMCH , salem was done in the period from july 2013 to june 2015 and these 60 patients were studied and followed up for immediate postoperative complications. Patient admitted with features of incisional hernia in our general surgery ward were included. Patients with blunt injury abdomen,portal hypertension,malignant ascites were excluded. A detailed history and thorough clinical examination was carried out and all patients underwent routine investigations to obtain fitness for surgery. Ultrasound abdomen was taken to assess the size of the defect. All patients underwent either anatomical repair or mesh repair.those who underwent mesh repair had suction drain in situ. Patients were followed up for immediate postoperative complications. Data was tabulated and analysed for statistical significance using univariate and multi variate analysis.

I. OBSERVATIONS AND RESULTS

4.1 Age Incidence

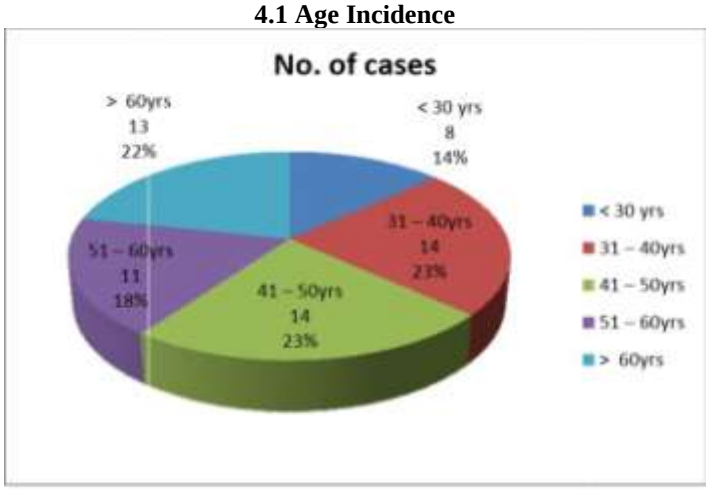


Chart: 1 Age Incidence of incisional hernia

Fig1

4.2 Sex Incidence

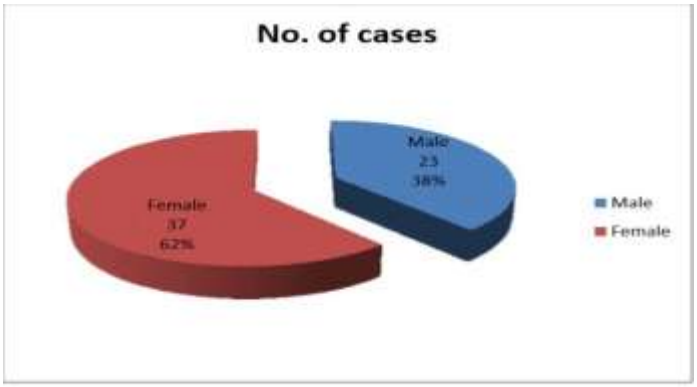


Chart : 2 Sex Incidence of incisional hernia

Fig2

4.3 Previous Surgery

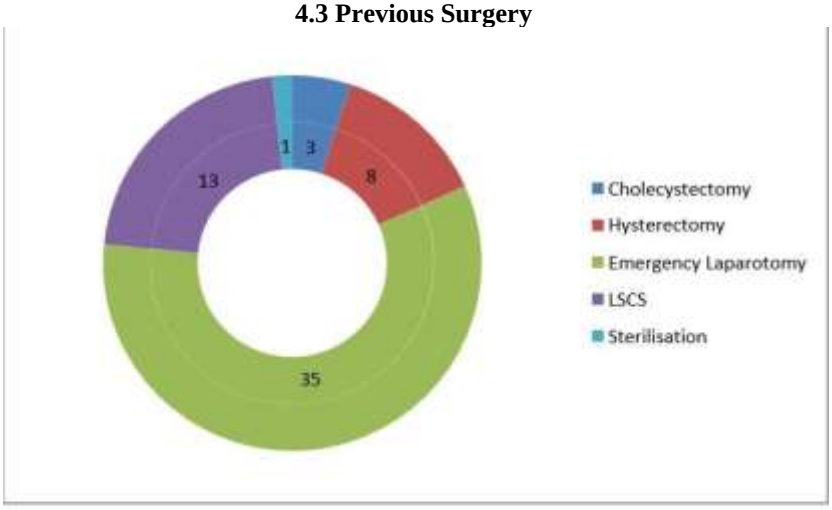


Chart: 3 Types of Surgery causing incisional hernia

Fig3

4.4 Various Incisions

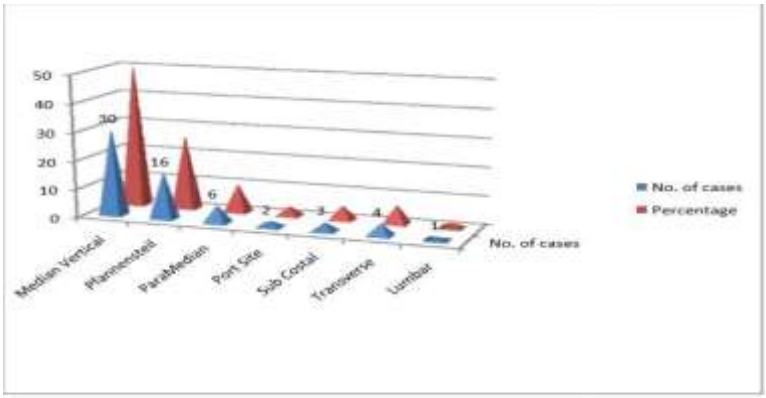


Chart: 4 Types of incision causing incisional hernia

Fig 4

4.5 Previous Surgical Complications

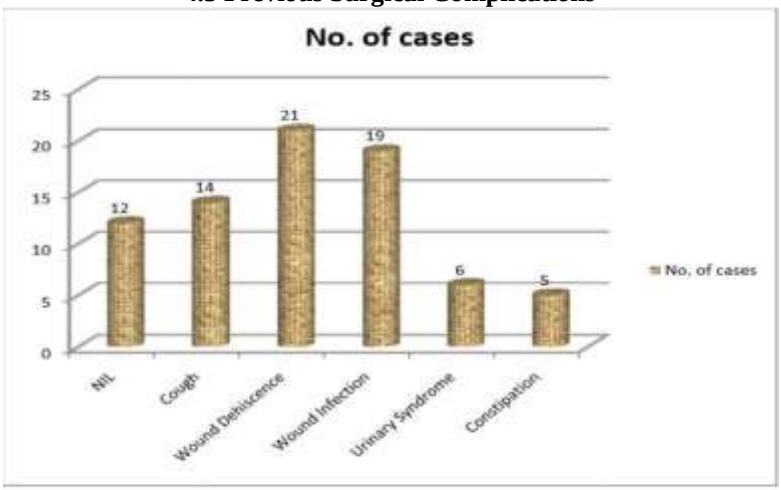


Chart: 5 Previous surgical complications causing incisional hernia

Fig 5

4.6 Duration Of Occurrence After Previous Surgery

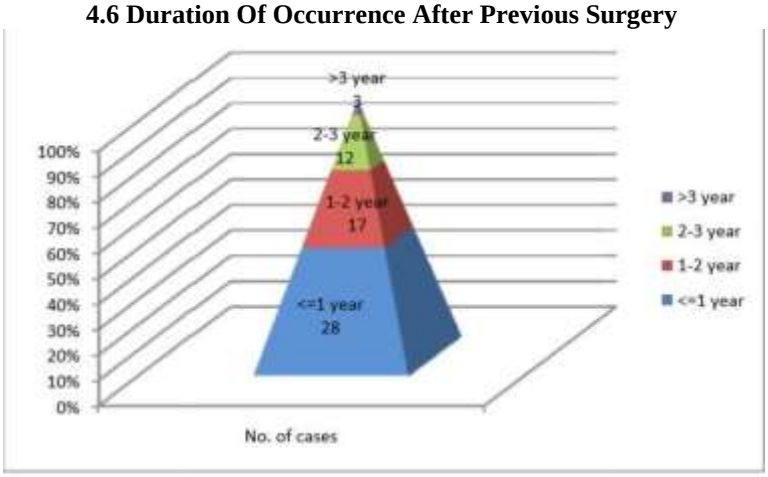


Chart: 6 Time period for the onset of incisional hernia

Fig 6

4.7 Procedure Done

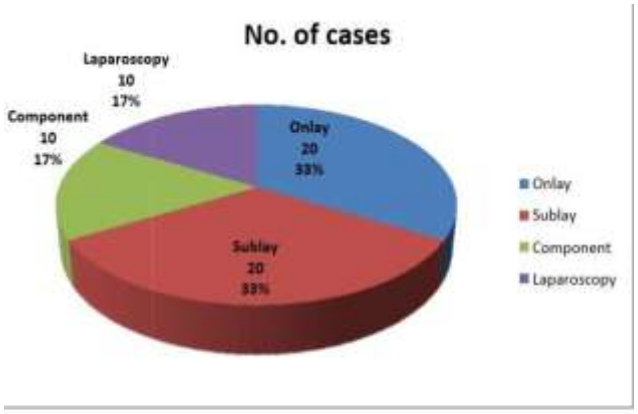


Chart: 7 Various incisional hernia repair

Fig 7

4.8 Per-Operative Complications

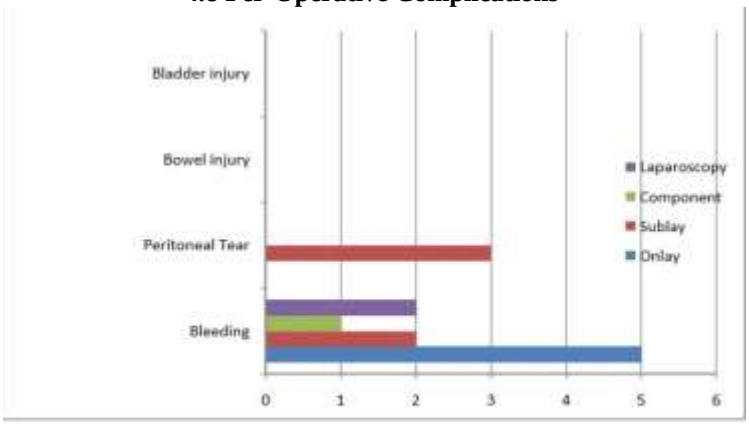
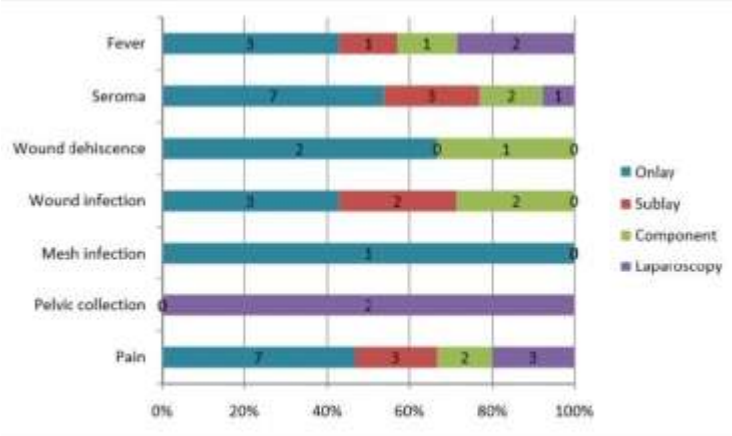


Chart: 8 The complications of Per-operative period

Fig 8

4.9 Post Operative Complications



Cahrt : 9 The complications of Post-operative period

Fig 9

4.10 Hospital Stay

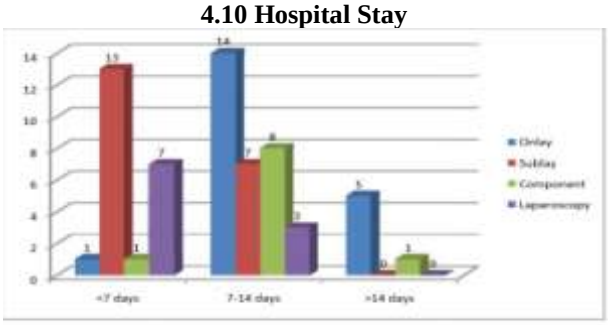


Chart : 10 Hospital Stay in various technique

Fig 10

4.12 Follow Up

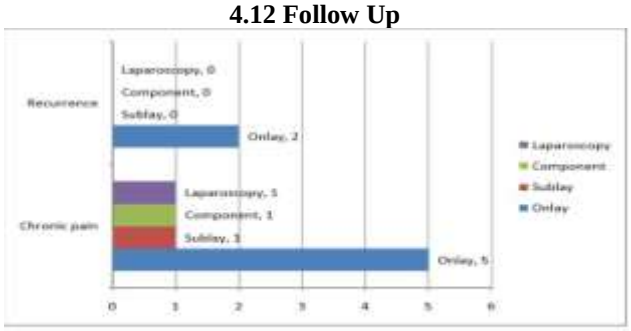


Chart : 11 Follow up

Fig 11

IV. Discussion

We have studied about 60 cases of incisional hernia. 20 cases were operated using onlay mesh repair and 20 cases using sublay mesh repair.10 cases were operated by the component separation technique and remaining 10 cases by Laparoscopic technique [6,8] . The collected information was analyzed.

In the present study, the youngest case was 24 years and oldest being 75 years. The mean age of the patients presenting with incisional hernia was 48.13 years. Here most of the cases with incisional hernia had reported in 4th and 5th decade of life. Carlson et al identified the patients with incisional hernia were between 25 to 90 years and mean age of 60.3 years. In our study, most of them are 4th and 5th decade of life because of predominance of female patient who underwent surgery for childbirth.

In this study, male to female sex ratio was 2:3. 38.3% are male and 61.7% are female patients with incisional hernia. Regnad et al found male to female ratio is 1:5 in his study. Female patient had higher incidence of incisional hernia because of repeated pregnancy causing laxity of abdominal wall and obesity which caused infection post operatively.

In our study, Emergency Laparotomy wound causing incisional hernia is 58.3% which is the most common previous surgical procedure compare to others such Cholecystectomy(5%), Hysterectomy(13.3%), LSCS(21.7%) and sterilization(1.7%).

Out of 60 patients, most of them operated for emergency surgery such as duodenal perforation, intestinal obstruction and others. Patience with median vertical incision (50%) had more incidence of incisional hernia compared to others. In present study, we found incisional hernia with pfannensteil incision (26.7%), para median incision(10%), port site incision (3.5%), sub costal incision(5%), transverse incision(6.7%), lumbar incision(1.7%). Most of the study reported midline vertical incision is most common incision causing incisional hernia compared to others. Report of our study also support to this point. Most of the patients with port site hernia underwent the laparoscopic procedure. Because all of them had small sized hernia which is best suited for laparoscopic procedure.

Among 60 patients in our study about 35% of patients experienced wound dehiscence and 31.7% patients had wound infection in previous surgery which was most common complication to develop incisional hernia.

Buchnall TE [3,4] et al reported that previous surgery had been complicated by post operative wound infection in 48.8% developed hernia. Larson et al reported 35.9% and Bose had 53.6%. Among the 60 patients in our study , the incidence of cough in post operative complication in previous surgery was 23.3%. Most of

them developed incisional hernia within one year of their post operative period(46.7%). Only 5% patients developed the incisional hernia after three years from previous surgery.

In this study, 25% patients had bleeding per operative during onlay mesh repair, 10% patients in sublay, 10% patients in component separation technique, 20% in laparoscopy procedure during adhesiolysis. Three patients had peritoneal tear during sublay mesh repair due to previous surgical adhesion. The peritoneal tear was sutured using 2-0 vicryl material. No one had bladder injury or bowel injury in our study.

The post operative wound infection was 3 patients(15%) in onlay mesh repair, 2 patients(10%) in sublay mesh repair, 2 patients(20%) in component separation technique. All were managed by antibiotics based on wound culture and sensitivity. Wound dehiscence occurred to two patients in onlay mesh repair, one patient in component separation technique, which was managed by resuturing. The post operative periods were uneventful.

Generally pain is the significant problem in hernia surgery. Pain developed to 7 cases in onlay mesh repair, 3 cases in sublay mesh repair, 2 cases in component separation technique. According to this study, pain is mostly occurred in onlay mesh repair. In laparoscopic procedure, pelvic collection occurred in two patients.

Post operative period of this study seroma formation occurred 35% patients in onlay, 30% in sublay, 20% in component separation technique, 10% in laparoscopic surgery. In our study, in onlay mesh repair patients had prolonged hospital stay because of seroma formation, wound dehiscence, wound infection and pain.70% of patients underwent onlay repair, discharged in the second week of post operative period. Mean period of onlay mesh repair 11.6 days.

Component separation technique patients had discharged, 1 patient in 1st week, 8 in 2nd week of post operative period. One patient had prolonged serous discharge and wound gapping. So the discharge was delayed upto 3rd week.

Patients underwent laparoscopic procedure discharged in 1st week of post operative period because of pelvic collection and pain. Sublay mesh repair patients discharged mostly in the end of 1st week (65%).

Overall, Onlay mesh repair had recurrence, wound infection, seroma formation and prolonged hospital stay. In early period of laparoscopic surgery, pelvic collection and pain are common which caused prolonged hospital stay. Component separation technique had chronic pain, prolonged hospital stay and wound infection. Sublay mesh repair and laparoscopic repair had less and acceptable post operative complication, less hospital stay and no recurrence.

II. Conclusion

Open Sublay mesh repair and laparoscopic repair were the best method in our study compared to others. Middle aged female patients who underwent laparotomy with wound dehiscence having midline vertical incision had incisional hernia commonly.

References

[1]. Patrick J Javid, David C Brooks; Hernias; Michael J Zinner, Staley W Ashley; "Maingot's abdominal operations, 11th edition" McGraw Hill, USA,2007, pg 103-104

[2]. I Katedra Chirugrgii Ogolnej CM UJ, Krakow "The history of treatment of groin hernia" Folia Med Cracov, 2008; 49(1-2); 57-74;

[3]. Lorelei J Grunwaldt, Steven D Schwaitzberg, David W Rattner "Is Laparoscopic Inguinal Hernia Repair an Operation of the Past?" jamcollsurg.2004.10.033

[4]. R. Van Hee "History of inguinal hernia repair." Jumalul de Chirurgie, Iasi, 2011, Vol. 7, Nr. 3[ISSN 1584 – 9341]

[5]. John E. Skandalakis, Gene I, Colbom, Thomas A. Weidman, Roger S. Foster, Jr., Andrew N. Kingsnorth, Lee J. Skandalakis "Shandalakis' Surgical Anatomy" Paschalidis medical publication, Greece, 2004.

[6]. Guy J. Maddern "Hernia repair open vs laparoscopic" Churchill livingstone, New York, 1997. ii

[7]. S. Bringman, J. Conze, D. Cuccurullo, J. Deprest, K. Junge "Hernia Repair: The Search For Ideal Meshes" Springer, Hernia (2010) 14:81-87

[8]. Saiz AA,, Willis IH, Paul DK, Sivina M. "Laparoscopic ventral hernia repair: A community hospital experience" Am surg 1996;62;336-8.

[9]. Rives J. Lardennois B, Pire J-CI, et al. "Les grandes eventrations. Importance du 'volet abdominal' et des troubles redspiratoires qui lui sont secondaires." Chirurgie 1973 :99 : 547- 63.

[10]. Ramirez O, Ruas E, Dellon L. "Components separation method for closure of abdominal wall defects: an anatomical and clinical study" Plast Reconstr Surg 1990:86:519-26

[11]. Susan Standirg, GRAY'S Anatomy, "The Anatomical Basis of Clinical Practice" 39th Ed, 2008; section10 SYSTEMIC OVERVIEW Embryogenesis

[12]. Richard H. Turnage, MD et.al. SECTION X – Abdomen CHAPTER 43 – "Abdominal Wall, Umbilicus, Peritoneum, iii Mesenteries, Omentum, and Retroperitoneum": Sabiston Textbook of Surgery, 18th ed.2007

[13]. John E. Skandalakis, et.al. Skandalakis' Surgical Anatomy

[14]. Souba, Wiley W; Fink, Mitchell P. Robert J. Fitzgibbons Jr. "ACS Surgery: Principles & Practice, 6th edition" Chapter 27 Open Hernia Repair pg 1-25

[15]. Parveen Bhatia "Indian association of gastrointestinal endo-surgeons, 2nd edition" Chapter 13, understanding of endoscopic anatomy of inguinal region.

[16]. Arthur I Gilbert, Michael F.Graham "Inguinal hernia: anatomy and management" http://surgery.medscape.com/medscape/surgery