

Clinical Study and Management of the Incisional Hernia: A Retrospective Study

T Gnanakkumar

Senior Civil Surgeon, Department of General Surgery, Government Headquarters Hospital, Ramanathapuram, Tamil Nadu, India

Abstract

Introduction: Incisional hernia is the most frequent post-operative complication following abdominal surgery. Several studies have shown that incisional hernias have different etiologies that are related to the patient, the surgical technique, the suture material, and the experience of the surgeon.

Aim: This study aims to study various factors leading to the development of this condition and surgical techniques practiced to repair the incisional hernia.

Materials and Methods: This retrospective study was conducted in the Department of General Surgery at Government Headquarters Hospital, Ramanathapuram, inpatient underwent surgery for incisional hernia. Data on clinical examination, type of operative procedure, and post-operative complications were collected.

Results: Eighteen cases underwent surgery for an incisional hernia, female predominance, and age group of 31-40 years were common, the common previous surgery was laparotomy (56%), the common surgical incision is median vertical (50%). About 28% of patients had post-operative pain, 22% of patients had seroma, and 17% of patients had wound infection, no mesh-related infection noted in our study.

Conclusion: In incisional hernias, the choice of operative technique is crucial. Incisional hernias occur more often in females as they are more likely to undergo lower abdominal surgeries. Mesh repair is considered superior to anatomical repair alone and we recommend laparoscopic hernioplasty as the first line of treatment.

Key words: Etiology, Incisional hernia, Mesh repair

INTRODUCTION

An incisional hernia is an iatrogenic hernia.^[1] It is a common complication after abdominal surgery with a reported incidence of 11–20%.^[2] Incisional hernia is defined as any abdominal wall gap with or without a bulge in the area of a post-operative scar perceptible or palpable by clinical examination or imaging.^[3] More often than not, the problem is recurrent and tests the abilities of even the most experienced surgeons.^[4] Unlike other abdominal wall hernias, which occur through anatomical points of weakness, incisional hernias occur through a weakness at the site of abdominal wall closure.^[5]

It is one of the most frequent long-term complications of abdominal surgery, and it continues to be a significant problem for patients as well as surgeons. Unfortunately, attempts to repair these hernias have not been uneventful, with high rates of hernia recurrence, and considerable rates of morbidity and mortality, making many surgeons hesitant to undertake incisional hernia repair.

The technique of repair for abdominal incisional hernia is simple resuturing if the defect is small, but it is associated with a recurrence rate of 15–20%. Cattell's repair, Maingot's keel repair^[6] and shoelace darn repair are in vogue.^[7] Various prosthetic grafts used for repair are nylon, polymer, polyester, polypropylene, polyglactin, polydioxanone, and polytetrafluoroethylene. Prosthetic mesh for hernia repair is started in 1958 after Usher reported his first experience. Since then, polypropylene mesh is widely used for closure of defects in hernia with good results.^[8]

Access this article online



www.ijss-sn.com

Month of Submission : 11-2019
Month of Peer Review : 12-2019
Month of Acceptance : 12-2019
Month of Publishing : 01-2020

Corresponding Author: T Gnanakkumar, Department of General Surgery, Government Headquarters Hospital, Ramanathapuram, Tamil Nadu, India.

Aim

This study aims to study various factors leading to the development of this condition and surgical techniques practiced to repair the incisional hernia.

MATERIALS AND METHODS

This retrospective study was conducted in the Department of General Surgery at Government Headquarters Hospital, Ramanathapuram. The patient admitted for incisional hernia surgery from May 2019 to October 2019 was included in the study. Exclusion criteria: Patient with associated blunt injury abdomen, patient with associated portal hypertension with ascites, the patient associated with intra-abdominal malignancy and malignant ascites, and patient with features suggestive of complications were excluded from the study. Data regarding the time of appearance and duration of swelling after index surgery, pain associated with swelling, the indication of previous abdominal surgery, history of post-operative complications at that time, type of surgery, and post-operative complications such as wound infection and wound dehiscence were recorded from the patient in the prescribed pro forma.

RESULTS

In our study, 18 cases of incisional hernia were included in the study. The most vulnerable age group in this study was 31–40 years (28%) [Figure 1]. In 18 cases, 11 cases were female and 7 were male patients [Figure 2].

Majority of patients 67% presented with swelling over the anterior abdominal wall after the previous surgery and 33% of patients presented with both pain and swelling [Figure 3].

Ten patients had the previous history of emergency laparotomy and 4 had the previous history of LSCS and few others have a history of hysterectomy (2), cholecystectomy (1), and sterilization (1) [Figure 4].

Patients with median vertical incision (50%) had more incidence of incisional hernia compared to Pfannenstiel incision (22%) [Figure 5].

In 18 cases, 6 cases underwent onlay repair, 6 sublay repairs, 3 component separation repair, and 3 laparoscopic repairs [Figure 6].

In our onlay repair patients, two cases experience post-operative pain and two cases had seroma, one case sublay repair had post-operative pain and one had seroma, one case in component repair had post-operative pain, wound

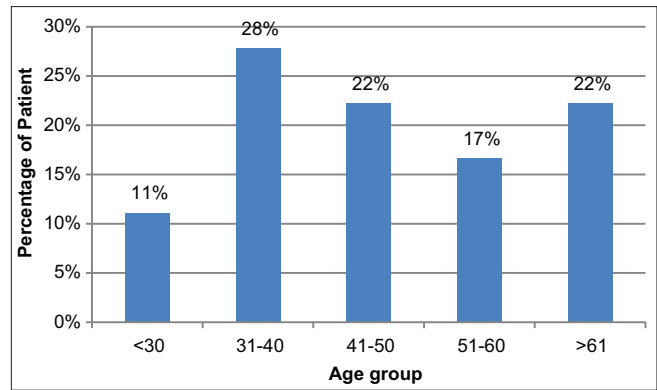


Figure 1: Distribution of age group

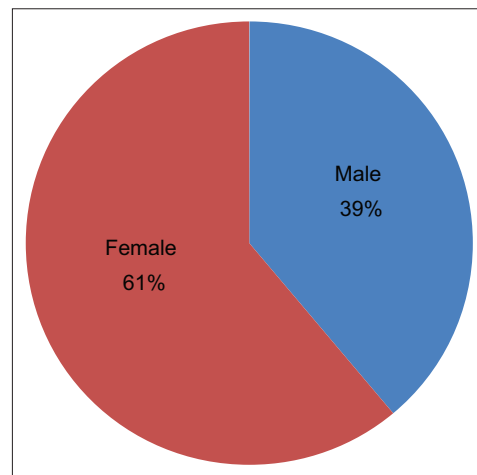


Figure 2: Distribution of gender

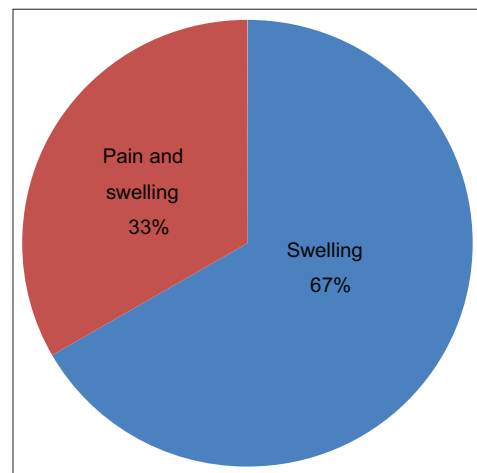


Figure 3: Distribution of mode of presentation

infection, and seroma, one case in laparoscopic repair had post-operative pain, and 1 had seroma [Table 1].

DISCUSSION

Post-operative incisional hernia repair is one of the most common surgical procedures being performed in general

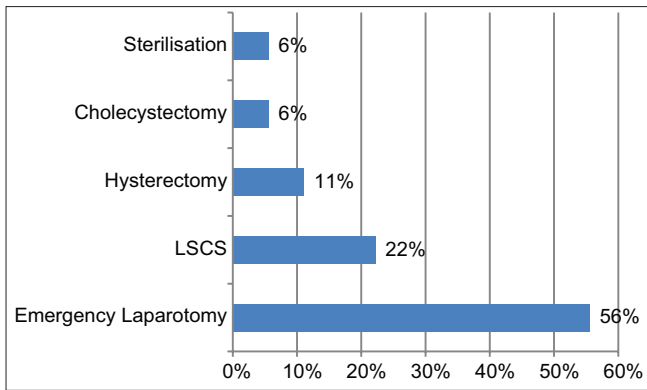


Figure 4: Types of surgery causing the incisional hernia

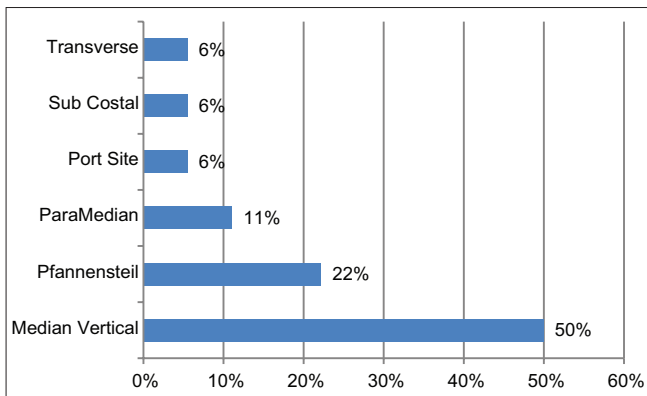


Figure 5: Types of incision causing the incisional hernia

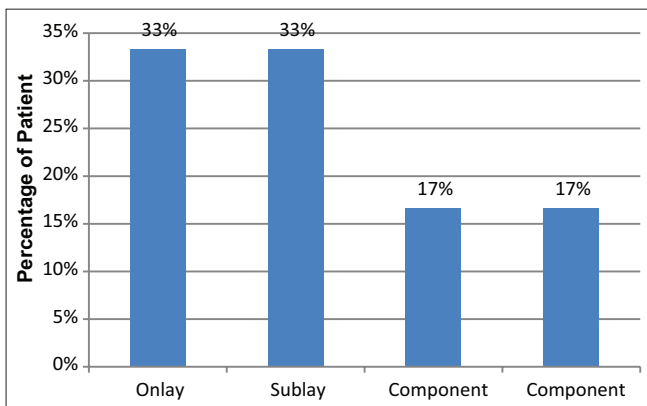


Figure 6: Distribution of various incisional hernias repair

Table 1: Distribution of post-operative complication

Complications	Onlay	Sublay	Component	Laparoscopic
Pain	2	1	1	1
Pelvic collection	0	0	0	1
Wound infection	1	1	1	0
Wound dehiscence	1	0	0	0
Seroma	2	1	1	0
Fever	1	1	0	1

surgery.^[8,9] Carlson *et al.* identified that the patients with incisional hernia were between 25 and 90 years and mean age of 60.3 years. In our study, most of them are 4th and 5th decades of life due to the predominance of female patient who underwent surgery for childbirth.^[10]

Seroma formation is one of the most common complications associated with onlay mesh hernioplasty due to the wide undermining involved.^[11] Extensive dissection for mesh placement and premature removal of the subcutaneous drain may contribute to this complication. Bucknall *et al.* reported that the previous surgery had been complicated by post-operative wound infection in 48.8% developed hernia.^[12]

In our study, no mesh-related infection has been noted. The most important point regarding the prevention of mesh-related infections is that foreign body reactions depend on the amount of the prosthesis (mesh) used. For this reason, surgeons should try to minimize the area of mesh that is introduced during the hernia operation since the inserted foreign material is an ideal medium for bacterial colonization. In addition, four main approaches to the prevention of mesh infection have been used. First, the wound can be rinsed with an antibiotic-containing solution, starting immediately after the dissection of the hernia sac, and then intermittently until the skin is sutured. However, the effectiveness of lavage with solutions containing antimicrobial agents is controversial since antibiotics require a defined duration of contact with pathogens, while lavage is usually a more rapid process. A second approach involves the use of material placed in front of the mesh to slowly deliver an antimicrobial agent locally. Third, a mesh containing embedded antimicrobial agents can be used. Such a mesh is thought to help prevent bacterial adhesion and colonization when implanted in wounds, with a subsequently reduced likelihood of post-operative infections. Finally, the traditional intravenous perioperative administration of antimicrobial agents can be used. Although hernia repair operations are classified as clean surgery, the administration of intravenous antibiotics perioperatively has been shown to be beneficial if a prosthetic material (mesh) is involved.^[13,14]

CONCLUSION

In incisional hernias, the choice of operative technique is crucial. Incisional hernias occur more often in females as they are more likely to undergo lower abdominal surgeries. Mesh repair is considered superior to anatomical repair

alone and we recommend laparoscopic hernioplasty as the first line of treatment.

REFERENCES

1. Mudge M, Hughes LE. Incisional hernia: A 10 year prospective study of incidence and attitudes. *Br J Surg* 1985;72:70-1.
2. Williams NS, Bulstrode CJ, Oconnell PR. Bailey and Loves, Short Practice of Surgery. Abdominal Wall Hernia. 25th ed. United Kingdom: Hodder Arnold; 2008. p. 986-9.
3. Korenkov M, Paul A, Sauerland S, Neugebauer E, Arndt M, Chevrel JP, *et al*. Classification and surgical treatment of incisional hernia. Results of an experts' meeting. *Langenbecks Arch Surg* 2001;386:65-73.
4. Bhat N, Zadi S, Riyad M, Bukhari S. Clinical profile and management of incisional hernias. *Internet J Surg* 2009;26:1-9.
5. Sanders DL, Kingsnorth AN. The modern management of incisional hernias. *BMJ* 2012;344:e2843.
6. Abrahams J, Elder S. Shoelace repair of large post operative ventral abdominal hernias: A simple extra peritoneal teach. *Contemp surg* 1988;32:24.
7. Usher FC. Hernia repair with knitted polypropylene mesh. *Surg Gynecol Obstet* 1963;117:239-40.
8. Regnard JF, Hay JM, Rea S, Fingerhut A, Flamant Y, Maillard JN. Ventral incisional hernias: Incidence, date of recurrence, localization and risk factors. *Ital J Surg Sci* 1988;18:259-65.
9. Read RC, Yoder G. Recent trends in the management of incisional herniation. *Arch Surg* 1989;124:485-8.
10. Carlson MA, Ludwig KA, Condon RE. Ventral hernia and other complications of 1,000 midline incisions. *South Med J* 1995;88:450-3.
11. Shell DH 4th, de la Torre J, Andrades P, Vasconez LO. Open repair of ventral incisional hernias. *Surg Clin North Am* 2008;88:61-83.
12. Bucknall TE, Cox PJ, Ellis H. Burst abdomen and incisional hernia: A prospective study of 1129 major laparotomies. *Br Med J (Clin Res Ed)* 1982;284:931-3.
13. Yerdel MA, Akin EB, Dolalan S, Turkcapar AG, Pehlivan M, Gecim IE, *et al*. Effect of single-dose prophylactic ampicillin and sulbactam on wound infection after tension-free inguinal hernia repair with polypropylene mesh: The randomized, double-blind, prospective trial. *Ann Surg* 2001;233:26-33.
14. Celdrán A, Frieyro O, de la Pinta JC, Souto JL, Esteban J, Rubio JM, *et al*. The role of antibiotic prophylaxis on wound infection after mesh hernia repair under local anesthesia on an ambulatory basis. *Hernia* 2004;8:20-2.

How to cite this article: Gnanakkumar T. Clinical Study and Management of the Incisional Hernia: A Retrospective Study. *Int J Sci Stud* 2020;8(1):1-4.

Source of Support: Nil, **Conflicts of Interest:** None declared.