SAS Journal of Surgery (SASJS) **ISSN 2454-5104**
Abbreviated Key Title: SAS J. Surg.

A Unit of Scholars Academic and Scientific Society, India

A Clinical Study on Surgical Treatment of Incisional Hernia

Dr. S Bhargava Reddy*
Assistant Professor, Department of General Surgery, Ayaan Institute of Medical Sciences, Moinabad.

Original Research Article

***Corresponding author**
Dr. S Bhargava Reddy

Article History
Received: 20.12.2018
Accepted: 27.12.2018
Published: 30.12.2018

DOI:
10.21276/sasjs.2018.4.12.8

Abstract: ***Background:*** A hernia occurs when an internal organ or other body part protrudes through the wall of muscle or tissue that normally contains it. Most hernias occur within the abdominal cavity, between the chest and the hips. The most common forms of hernia are Inguinal hernia. ***Materials and Methods:*** This is a prospective and descriptive study done in Department of General Surgery, Tertiary care teaching hospital over a period of 6 months after obtaining the institutional ethics committee approval on 70 patients. Included patients 18-60 years of age and incisional hernias associated with other abdominal wall hernias. A detailed history of all the patients was taken and a thorough clinical examination was done to determine the type and cause of hernia. ***Results:*** Majority of patients 53 (75.7%) presented with swelling over the anterior abdominal wall after previous surgery, 17 (24.2%) patients presented with pain. At the time of admission majority of patients 64 (91.4%) had reducible hernia while 06 (8.5%) patients presented with irreducible hernia? Out of 70 patients, 45 patients (64.2%) were found to have 5cm size and 11 (15.7%) patients have the defect 3cm. Size of defect dictated the type of repair (suture repair/mesh repair) in present study. ***Conclusion:*** Hernias are more likely after emergency surgery or surgery that requires a large incision. If the edges of the wound aren't properly aligned after surgery, the incision may not heal well, increasing the likelihood of a hernia. Meticulous 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.
Keywords: Incisional hernia, McBurney's incision.

INTRODUCTION

A hernia occurs when an internal organ or other body part protrudes through the wall of muscle or tissue that normally contains it. Most hernias occur within the abdominal cavity, between the chest and the hips [1].

The most common forms of hernia are **Inguinal hernia.** In men, the inguinal canal is a passageway for the spermatic cord and blood vessels leading to the testicles [2]. In women, the inguinal canal contains the round ligament that gives support for the womb. In an inguinal hernia, fatty tissue or a part of the intestine pokes into the groin at the top of the inner thigh. This is the most common type of hernia, and affects men more often than women [3].

Inguinal and femoral hernias are due to weakened muscles that may have been present since birth, or are associated with aging and repeated strains on the abdominal and groin areas [4]. Such strain may come from physical exertion, obesity, pregnancy, frequent coughing, or straining on the toilet due to constipation [5].

A hernia in the abdomen or groin can produce a noticeable lump or bulge that can be pushed back in, or that can disappear when lying down. Laughing, crying, coughing, and straining during a bowel movement or physical activity may make the lump reappear after it has been pushed in. [6]. More symptoms of a hernia include swelling or bulge in the groin or scrotum (the pouch that contains the testicles, increased pain at the site of the bulge, Increase in the bulge size over time [7].

Diagnosis is usually possible to see or feel a bulge in the area where a hernia has occurred by physical exam. As part of a male's typical physical exam for inguinal hernias, the doctor feels the area around the testicles and groin while the patient is asked to cough. In some cases, soft-tissue imaging like a CT scan will accurately diagnose the condition [8].

MATERIALS AND METHODS

This is a prospective and single center study conducted at Department of General Surgery, Tertiary care teaching hospital over a period of 9 months among 70 patients.

Included patients 18-60 years of age and incisional hernias associated with other abdominal wall hernias. A detailed history of all the patients was taken and a thorough clinical examination was done to determine the type and cause of hernia.

On admission detailed history regarding, time of appearance and duration of swelling after index surgery, pain associated with swelling, indication of previous abdominal surgery, history of post-operative complications at that time, type of surgery, post-operative complications like wound infection, wound dehiscence occurred during previous surgery were recorded from the patient in the prescribed proforma. Also, enquiry made about cough, constipation, symptoms of prostatism in males, steroid therapy, and smoking status. Height and weight of patient measured for calculation of BMI (Body mass index). Inquiry was also being made regarding the patient's medications, past medical history and chronic medical conditions (like diabetes, hypertension, and tuberculosis) in addition to drug allergy and alcoholism. When patients with incisional hernia presented with intestinal obstruction in emergency department they were resuscitated initially and when became haemodynamically stable, shifted for radiological procedures and then in surgical ward.

Depending on the size of defect either anatomical repair or onlay prolene mesh repair was carried out. Patients having defect 3cm and less than 3cm were subjected to anatomical repair while those has defect more than 3cm were subjected to prolene mesh repair.

RESULTS

During the study period, consecutive 70 patients of incisional hernia undergoing surgical repair were included.

Table-1: Age and sex incidence

Age (years)	Total	Percentage
18 -30	6	8.5%
31-40	37	52.8%
41-50	19	27.1%
51-60	8	11.4%
Total	70	100%

In table 1, the most vulnerable age group in this study was 31 to 40 years (52.8%). The next most common age group affected was 41 to 50 years (27.1%). Mean age of the patient in our study was 37 years.

Table-2: Distribution of gender

Gender	No. of patients	Percentage
Male	63	10.0
Female	7	90.0
Total	70	100

In table 2, Gender wise distribution, there were maximum no. of patients were 63 males and 7 females.

Table-3: Mode of presentation of patients.

Incisional hernia	Number of cases	Percentage
Pain	17	24.2%
Swelling	53	75.7%

In table 3, majority of patients 53 (75.7%) presented with swelling over the anterior abdominal wall after previous surgery, 17 (24.2%) patients presented with pain

Table-4: Distribution of patient according to reducibility

Incisional hernia	Number of cases	Percentage
Reducible	64	91.4%
Irreducible	06	8.5%
Total	70	100%

In table 4, at the time of admission majority of patients 64 (91.4%) had reducible hernia while 06 (8.5%) patients presented with irreducible hernia?

Table-5: Size of defect of incisional hernia (Detected by USG)

Size of defect (approx.)	Number of cases	Percentage
2cm	2	2.8%
2.5cm	6	8.5%
3cm	11	15.7%
5cm	45	64.2%
8cm	4	5.7%
10cm	1	1.4%
>10cm	1	1.4%

In table 5, out of 70 patients, 45 patients (64.2%) were found to have 5cm size and 11 (15.7%) patients have the defect 3cm. Size of defect dictated the type of repair (suture repair/mesh repair) in present study.

Table-6: Type of repair

Type of Repair	Number of cases	Percentage
Anatomical (suture repair)	19	27.1%
Prolene mesh (onlay) repair	51	72.8%
Total	70	100%

In table 6, fifty-one (72.8%) patients undergone onlay prolene mesh repair while anatomical repair was carried out in 19 (27.1%) patients.

Table-7: Previous abdominal surgeries

Previous abdominal surgery	Number of cases	Percentage
Abdominal hysterectomy	15	21.4%
Tubal ligation	21	30.0%
LSCS (lower segment cesarean section)	13	18.5%
Laparotomies for peritonitis	10	14.2%
Ventral hernia repair	4	5.7%
Appendectomy	4	5.7%
Cholecystectomy	3	4.2%
Total	70	100%

In table 7, most of incisional hernias 21 (30.0%) occurred following tubal ligation. It is closely followed by Abdominal hysterectomy 15 (21.4%) and Lower segment cesarean section (18.5%). 10% patients developed incisional hernia following previous laparotomy for peritonitis.

Table-8: Site of previous abdominal incision.

Site of previous abdominal incision	Number of cases	Percentage
Upper midline	19	27.1%
Lower midline	48	68.5%
Paramedian	1	1.4%
Transverse	1	1.4%
McBurney	1	1.4%
Total	70	100%

In table 8, forty-eight (68.5%) patients had lower midline incision while 19 (27.1%) patients had upper midline incision. Paramedian, transverse and McBurney's incision was used in 1 (1.4%) of patients.

DISCUSSION

In our study, the most commonly affected age group was 31 to 40 years. These findings are in accordance with the studies conducted by Bose SM SD *et al*., study [9]. In our study, male patients were predominant. Similar observations were reported in Kumar V *et al*. [10]. In the study by Rajsiddharth B *et al*., female-to-male ratio was 1.6:1. [11]. The reason behind this could be laxity of the abdominal muscles due to multiple pregnancies and increased number of lower abdominal incisions in females.

In addition, majority of patients in present study presented with abdominal swelling in the vicinity of previous operative scar. This finding is consistent with the study conducted by Venkatesan KP *et al*. [12]. Incisional hernias treated by mesh repair method. Recent trend is to use the prosthetic mesh judiciously.

Mesh repair was found to be significantly better for large defects and multiple defects [13].

In present study, majority (74%) of the incisional hernias occurred following lower midline incisions. The findings in present study are comparable with various Sagar *et al*. [14] Higher incidence of incisional hernia in lower midline incision may be due to absence of posterior rectus sheath below arcuate line in lower abdomen. Intraabdominal hydrostatic pressure is higher in lower abdomen as compared to upper abdomen in erect position i.e. 20cm of water and 8cm of water respectively.

Complication such as wound infection rate in our study was 10% which is less as compared with Srivastava A *et al*. study [15]. Wound infection rate is higher in emergency operated cases and this could be attributed to the lack of pre-operative preparation and possibility of making larger incisions in emergency situation. The overall recurrence rate noted in our study nil. The recurrence rate observed in Singla SL *et al*., study is 9.25% [16].

CONCLUSION

Hernias are more likely after emergency surgery or surgery that requires a large incision. If the edges of the wound aren't properly aligned after surgery, the incision may not heal well, increasing the likelihood of a hernia. The sewing technique used to close the incision can also play a part. It's also possible for hernias to rupture, but this is extremely rare. Complications can be potentially life-threatening, so it's best to have any unusual symptoms looked at just in case. Meticulous 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.

REFERENCES

1. Al Chalabi H, Larkin J, Mehigan B, McCormick P. A systematic review of laparoscopic versus open abdominal incisional hernia repair, with meta-analysis of randomized controlled trials. International Journal of Surgery. 2015 Aug 1;20:65-74.
2. Borab ZM, Shakir S, Lanni MA, Tecce MG, MacDonald J, Hope WW. Does prophylactic mesh placement in elective, midline laparotomy reduce the incidence of incisional hernia? A systematic review and Meta -analysis. Surgery. 2017;161(4):1149 -1163.
3. Dietz UA, Menzel S, Lock J, Wiegering A. The Treatment of Incisional Hernia. Dtsch Arztebl Int. 2018;115(3):31 -37.
4. Payne R, Aldwinckle J, Ward S. Meta -analysis of randomised trials comparing the use of prophylactic mesh to standard midline closure in the reduction of incisional herniae. Hernia. 2017;21(6):843 -853.
5. Sanders DL, Kingsnorth AN. The modern management of incisional hernias. BMJ. 2012; 344:e2843.
6. Sauerland S, Walgenbach M, Habermalz B, Seiler CM, Miserez M. Laparoscopic versus open surgical techniques for ventral or incisional hernia repair. Cochrane Database Syst Rev. 2011;(3):CD007781.
7. Narayanaswamy T, Venugopal K, Nikshita N. Clinical study and management of incisional hernias: our experience. J Evol Med Dent Sci. 2013;2(47):9112-8.
8. Tulaskar N, Nichkaode P, Dasgupta S, Gurjar G, Umalkar R. Clinical study and management of incisional hernia by onlay or preperitoneal mesh repair: a prospective study in rural set up. IJBAR. 2013;4(5):328-33.
9. Bhamare SD, Pingale ND.A clinical study of incisional hernia. MVP J Med Sci. 2016;3(1):1-6.
10. Nanjappa NBA, Mohanty A, Smile Sr. Incisional hernia repair- a clinical study of 30 patients. Int J Cur Res Rev. 2013;5(15):35-41.
11. Kadum SG, Almahfooz NA, Alhawaz MH, Taha SA. Outcome of large incisional hernia repair with polypropylene mesh. Bas J Surg. 2009:1-12.
12. Machairas A, Misiakos EP, Liakakos T, Karatzas G. Incisional hernioplasty with extraperitoneal onlay polyester mesh. Am J Surg. 2004;70(8):726-9.
13. Memon W, Khanzada TW, Samad A, Kumar B. Incisional hernia repair with polypropylene mesh. JPMI. 2009;23(22):159-63.
14. Alhamdani KA, Albdri JA, Abd HJ. Open onlay mesh repair for abdominal incisional hernia. Iraqi J Comm Med. 2012;(4);347-51.
15. Schumpelick V, Junge K, Klinge U, Conze J. Incisional Hernia – Pathogenesis, Presentation and Treatment. Dtsch Arztebl. 2006;103(39):2553 -2558.
16. Agrawal M, Singh H, Sharma SP. Prevalence, clinical presentation, and management of incisional hernia in the Indian population: a cross -sectional study. Int J Sci Stud. 2016;4(7):51 -54.