



INFLUENCE OF INTERNAL ANAL SPHINCTEROTOMY IN REDUCING RECURRENCE OF HERNIA BY ANATOMICALLY REPAIRED INCISIONAL HERNIAS IN A TERTIARY CARE HOPITAL

Surgery

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ABSTRACT

Incisional hernia can occur near or along surgical scars in the abdomen. Incisional hernia is one of the most frequent long term complication of abdominal surgery and it continues to be significant problem for patients as well as surgeons. The incidence of recurrence in anatomically repaired incisional hernia in literature is 20%(1-6). Unfortunately, attempts of repair of 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 anatomical repair without mesh. On the other hand, however delay in repair may have serious clinical consequences. Apart from discomfort and pain, incisional hernias may predispose to incarceration or strangulation of primarily small bowel, which is almost certainly fatal if not promptly reduced and repaired. Also, as a consequence of impact on health, incisional hernias have enormous economic consequences. complications like recurrence , and the number of duration of hospital stay, Obstruction and incarceration with associated constipation. In the study of Roland W. Luijendijk¹ et al, among the 154 patients with primary hernias and 27 patients with first time recurrent hernia, two were eligible for the study. 56 had a recurrence during the follow up period. The 3 year cumulative rates of recurrence among patients who had suture repair and those who had mesh repair were 43% and 24% respectively. With repair of primary hernia (P=0.02, difference, 19 percentage points; 95 percent confidence interval, 3 to 35 percentage points). The recurrence rates were 58% and 20% with the repair of a first recurrence hernia (P=0.10; difference, 38 percentage points; 95 percent confidence interval, -1 to 78 percentage points). The risk factors for recurrence were suture repair, infection, prostatism (in men), and previous surgery for abdominal aortic aneurysm. The size of the hernia did not affect the rate of recurrence. This study is a non randomized and prospective i.e. influence of internal anal sphincterotomy in reducing the recurrence of anatomically repaired incisional hernias conducted in osmania medical college and general hospital. This study is obtained from patients who consented to get operated for incisional hernia involving 25 patients that presented in our unit during the period July 2016 to September 2018 in our institute and were selected non randomly and subjected to influence of internal anal sphincterotomy in reducing the recurrence of anatomically repaired incisional hernias.

KEYWORDS

Recurrence, constipation.

BACKGROUND:

Incisional hernia is the second most common hernia among all the hernias and relatively more common in females. This is because of laxity of abdominal muscles due to multiple pregnancies and also increased incidence of obesity. In anatomical repair of incisional hernia, the edges of the defect are brought together which may lead to excessive tension and subsequent wound dehiscence or herniation as a result of tissue ischemia and cutting of sutures to the tissue. With the prosthesis mesh, defect of any size can be repaired without tension. In addition polypropylene mesh by inducing an inflammatory response sets off a scaffolding that in turn induce the synthesis of collagen. Infection did not lead to removal of mesh in this and most other series but it was a risk factor of recurrence. Therefore, administration of broad spectrum antibiotics at the induction of anaesthesia is recommended. India is a developing country with majority of people from rural background and poor socioeconomic status. Mesh is being used routinely to decrease recurrences making the treatment of incisional hernia costly. So, most of the poor patients undergo anatomical repair. Also, Mesh is not used in complicate Incisional hernias like Obstruction and incarceration with associated constipation. Usually Constipation is prevalent in around 20% of patients and it is being the most common cause of recurrence after anatomical repair⁽⁷⁾. (Rajput et al 2014). LLIAS [Left Lateral Internal Anal Sphincterotomy] Hence Lateral Anal Internal Sphincterotomy is an easy cost effective preventive measure for constipation and so will be effective in reducing recurrence of incisional hernias repaired by anatomical method. The effect of this simple and cost effective treatment on incisional hernia recurrence is not known which made this topic a least explored area and henceforth a need for this study. This study has major effect on ergonomics of treatment of incisional hernias without raising the recurrence rates.

MATERIALAND METHODS:

This study is a non randomized and prospective study conducted in osmania medical college and general hospital from July 2016 to September 2018. The patients selected for this study are those who were admitted with various clinical conditions requiring internal anal sphincterotomy in reducing recurrence of hernia by anatomically repaired incisional hernias. Based on detailed history, thorough

clinical examinations, radiological examinations ultrasound of abdomen and CT Scan of abdomen, the diagnosis was made. These patients were subjected to the required pre operative investigations; after proper investigation and pre op preparation, ensuring fitness elective surgery was done. The internal anal sphincter is one of the two muscles that comprise the anal sphincter which controls the passage of faeces. Sphincterotomy procedure helps by lowering the resting pressure of internal anal sphincter which improves the blood supply of fissure and allows faster healing. The procedure has been shown to be very effective with 96% of fissures healing at a median of 3 weeks in one trial². 1cm skin incision given at the mucocutaneous junction at 3o'clock position and internal anal sphincter identified by its pearly white colour and divided with scissors.Compressing anal packing done to achieve haemostasis. Aseptic dressing done. All patients were given abdominal support for 1 month. Follow up & Evaluation After discharge, patient were encouraged to take normal diet and return to their normal activities as early as possible, but asked to avoid straining. patients were followed at 1 week, 1 month, 3 months, 6 months, 1year, 2 years period. in the initial follow up, the patient were evaluated for short term complications like seroma, hematoma, wound infection, wound dehiscence. During subsequent visits, chronic pain at the operated site and return to normal activities and recurrence were noted. . Age 16yrs to 65 yrs giving written valid consent, ASA grade 1 and 2, Hernia size defect between 1-10cm, Acute and sub acute intestinal obstruction, Medically fit patients to undergo the procedure. . we are not taking Patients who are not willing to give written informed consent, ASA grade >3, Patient with previous mesh repair of incisional hernia , Associated co-morbid diseases like sepsis, known cardiovascular disease, grossly deranged liver function. This study was approved by the hospital ethics committee.

STATISTICALANALYSIS:

Results are expressed as mean and standard deviation for continuous data and frequency as number and percentage. Categorical data was analysed by Chi square test and fischer exact test. A value of 0.05 or less was considered for statistical significance.

RESULTS:

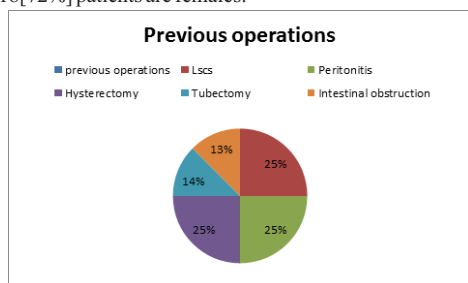
This study is non randomised and prospective [influence of Internal

anal sphincterotomy in reducing recurrence of anatomically repaired incisional hernias]. Total number of patients in this study are 25.

Table 1: Baseline Characteristics:

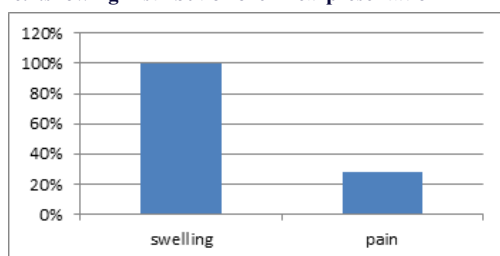
PARAMETER	n(%)
No.of patients	25
Male	7 (28%)
Female	18 (72%)
Mean age	47.48 yrs
Previous operations	
Lscs	6(24%)
Hysterectomy	6(24%)
Tubectomy	3(12%)
Intestinal obstruction	4(12%)
Peritonitis	6(24%)
Clinical presentation	
Swelling	25(100%)
Pain	7(28%)
Hernial Defect Size	
<2cm	2(8%)
3-5cm	13(52%)
6-8cm	9(36%)
9-10cm	1(4%)
Recurrence Rate	
Present	2(8%)
Absent	23(92%)

The mean age for anatomical hernia repair with sphincterotomy was 47.48 years. This study shows that majority of the patients are in between 46-55 years of age. Out of the 25 patients, 7[28%] are males while 18[72%] patients are females.



From the above data, it is found that, in our study, most of the incisional hernias occurred below the umbilicus in the midline. According to the study, all the patients presented with swelling i.e., 100% and 7 patients i.e., presented with pain in addition to swelling.

Figure.2. showing Distribution of clinical presentation



Defect size is assessed by ultrasound of abdomen. Most of the patients have a defect size of 3-5cms, 52%. In anatomical repair group, mean defect size is 5.104cms. All the cases were followed for 2 years for recurrence and reappearance of swelling clinically or radiologically [sonographically]. 2 out of 25 cases re-occur. Mean difference being 0.05. Unpaired t test and p value shows that the comparison is significant.

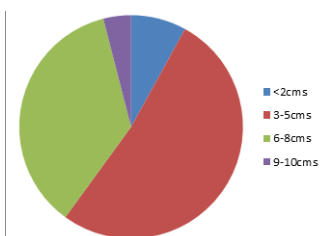


Figure 3 showing hernia defect size

DISCUSSION

Incisional hernia is defined by European Hernia society [EHS] as an abdominal wall gap with or without a bulge in the area of the post operative scar perceptible or palpable by clinical examination or imaging. Incisional hernia is one of the most common long term complication of abdominal operations with an overall incidence of 20%³. Before the introduction of the mesh prosthesis, for repair of the incisional hernia, only open suture repairs were used for its cure but with unacceptable rates of recurrence more than 50%⁴. In the present study which consists of 25 patients, the overwhelming majority of patients were females. In this study of 25 patients, with incisional hernia, the gynecological causes of laparotomy were most commonly associated with incisional hernia formation and naturally the incidence was found to be high among females. Our study shows that the majority of the patients are between 45-55 years of age, which could be explained by the large number of gynecological procedures done at a younger age group. Most [60%] of the hernias were located in the lower abdomen. This reflects the caesarean section and other gynecological operations as the prime etiology of incisional hernias in the Indian population, which is in contrast to published English literature where in the majority of the hernia repairs are undertaken for hernias following procedures like Aortic surgery, gastric surgery and colonic surgery⁵⁻⁶. An increased frequency of primary or recurrent inguinal and incisional hernia in patients who have had an Aneurysm has been previously reported in retrospective studies but not in others⁵⁻¹¹. Whether an inherent defect in healing exists in patients with aortic aneurysm or hernial disease is not known but a possible defect in healing may be explained by a defect in collagen and elastin cross linkage¹², increased activity of elastase with reduced content of elastin and different relative proportions of collagen subtypes.

Midline Incisions are used more frequently in emergency surgeries and are more prone to develop infections. The incisions therefore have a higher recurrence rate than transverse incision¹³⁻¹⁵. Caesarean section was noticed as the most common individual operation associated with incisional hernia [58%].

All of them presented with swelling over the abdomen and 28% of the patients presented with pain in the swelling site. Defect size is one of the important factors that determine the outcome. In the present study, the mean defect size is 5.104cms. A mean follow-up of 2 years, 2 out of 25 cases are re-occurred.

Table showing comparison of different studies:

DISTRIBUTION	STUDY	YEAR	FEMALE/MALE RATIO
Gender	K vani ¹⁶ Present	2015 2018	33/22 18/7
Age	K vani ¹⁶ Present	2015 2018	41-50year 45-55 year
Previous operation	sundresh et al ¹⁷ Present	2012 2018	Gynec-obs(68.5%) Gynec-obs procedure(60%)
Clinical presentation	sundresh et al ¹⁷ Present	2012 2018	Swelling=87% Swelling & pain=13% Swelling=72 Pain & swelling=28%
Incisional hernia defect size	sundresh et al ¹⁷ Present	2012 2018	3.59 5.104
Recurrence rate	K vani ¹⁶ Present	2015 2018	20(36%) 2(8%)

LIMITATIONS:

The study was conducted in a small number of patients. This is a single center study. The sample size may not be large enough to generalize the results.

CONCLUSION:

Highest incidence of incisional hernia in the present series is between 45-55 years. Most of the patients were females. Doing Internal Anal Sphincterotomy along with anatomical repair of incisional hernia will prevent constipation and associated recurrence due to constipation can be reduced significantly hence preventing recurrent incisional hernias. In a small incisional hernia, anatomical repair with or without sphincterotomy had similar recurrence rates. In large incisional hernias, anatomical repair along with LLIAS lead to decreased recurrence rates.

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