

Comparative evaluation of shouldice and bassini's repair of inguinal hernia in rural tertiary hospital

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Abstract

Introduction: Though many newer techniques are available for inguinal hernia repair, still tissue repair is the commonest technique done by junior residents. The aim of this study was to compare feasibility and recurrence rate after Shouldice repair and Bassini's repair. A Comparative study done on 100 patients of inguinal hernia. This study was carried out in our hospital by department of surgery at S. R. T. R. Medical College Ambajogai. Patients selected in this study were operated for two different hernia repairs. The Bassini's repair or Shouldice repair depending upon the condition of the fascia transversalis intraoperative. After surgery all patients were monitored for pain, bleeding, wound infection and recurrence. It was found that Patient who were underwent shouldice repair complained moderate pain in Bassini's repair than shouldice repair. Recurrence of hernia was noted in 08 (16%) patients of Bassini's repair and 2(4%) patients of shouldice repair. So we concluded that shouldice hernia repair provide best chance of non-recurrence regardless of anatomical type of hernia.

Keywords: Inguinal hernia, Shouldice repair, Bassini's repair.

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Received Date: 01/05/2014 Accepted Date: 07/05/2014

Access this article online

Quick Response Code:



Website:

www.statperson.com

DOI: 07 May 2014

INTRODUCTION

Hernia is among the oldest affliction of human kind and surgical repair of inguinal hernia is the most common general surgery procedure performed today.¹ Of the study many surgical operations available in General Surgeon's armamentarium. The rapid changes that have been occurred in open approaches surgeries but none can be termed as ideal procedure as each of one is accompanied

by varied early, late complications and recurrence². In search of technical means to reduce recurrence, emphasize was also placed on meticulous dissection. The most popular version was the Shouldice technique initially introduced in 1958 and essence of modification of Bassini's repair. This technique involves meticulous dissection of inguinal floor with closure of inguinal canal in four layers. The operation can be technically challenging to beginner but is has been associated with excellent long term outcome, low recurrence rate i.e. less than 01%.¹ Bassini's revolutionized the surgical repair of growing hernia with his novel anatomical dissection and low recurrence rate. He first performed operation in 1884 and published initial outcome in 1889.¹ The present study was planned to compare Shouldice and Bassini's repair of inguinal hernia.

METHODS

This study was carried out in department of surgery at S.R.T.R. Medical College Ambajogai Dist. Beed between

June 2008 to May 2010. Present comparative study was carried out on 100 inguinal hernia patients. All patients with direct and indirect inguinal hernia were included in this study. Diagnosis inguinal hernia was made by history and clinical examination. Routine investigation like hemogram urine examination, random blood sugar, Urea, Creatinine etc. done. X-ray chest and Electrocardiogram were done for patient above 40 years for anesthetic evaluation. The patients were chosen for the two different hernia repair i.e. Bassini's repair 50 patients and shouldice repair 50 patients randomly. Single dose of preoperative broad spectrum antibiotic given followed by the same for three days post operatively. All Patients were given spinal anesthesia. Analgesic given was inj. Diclofenac sodium post-operative 02 days and later SOS. After surgery all patients were monitored carefully for pain, bleeding, wound infection and recurrence. Patients were discharged when fit and asked to come for regular follow after 15 days, 01 month, 03 months, 01 year, 02 years . Different patients were followed up for different period with many dropouts. The patients were advised return to pre hernia life style except lifting heavy weight. Bassini's repair was done by suturing conjoint tendon to inguinal ligament with 03 to 04 stiches. Stiches were given with prolene no. 01. Shouldice repair was performed in 04 layers as described by Glassgow using 2-0 prolene suture material instead of stainless steel wire. Bilateral inguinal hernias were operated in a same sitting. No other concomitant surgery was performed.

RESULTS

Out of 100 cases 50 cases operated for Bassini's repair and 50 cases for Shouldice repair. Cases studied in this study were in between 15 to 70 years age group. Three 3(3%) were female and 97 (97%) were male.

Table 1: Age and Sex Distribution.

Age group	Sex		Total
	Male	Female	
21-30	24	0	24
31-40	19	2	21
41-50	27	0	27
51-60	09	0	09
61-70	14	01	15
>70	04	0	04
Total	97	03	100

Occurrence of hernia was common in younger age group greatest in 41-50 year age i.e. 27 (27%) followed by 31-40 year of age i.e. (21%).

Table 2: Occupational Status

Occupation	Frequency	Percent
Farmer	34	34%
Laborer	24	24%
Teacher	13	13%
Conductor	08	08%
Student	09	9%
Other	12	12%
Total	100	100

In present study it was observed that hernia was commonly in farmer and laborer i.e. 34 (34%) and 24 (24%) respectively.

Table 3: Post-operative complication

Complications	Total No. of Cases			Z value	P value
	Bassini's (n=50)	Shouldice (n=50)	Total (n=100)		
Pain (moderate)	23 (46%)	33 (66%)	56 (56%)	2.06	<0.05
Fever	12 (24%)	02 (4%)	14 (14%)	3.01	<0.05
Hematoma	09 (18%)	02 (4%)	11 (11%)	2.30	<0.05
Wound infection	07 (14%)	02 (04%)	09 (9%)	1.77	>0.05
Testicular atrophy	0	0	0	-	-
Recurrence	08 (16%)	02 (04%)	10 (10%)	2.04	<0.05

In our study no testicular atrophy seen in both repair. Fever was seen in 12 (24%) cases of Bassini's repair and 2 (4%) cases of Shouldice repair which was associated with hematoma in 9 (18%) cases of Bassini's and 2 (4%) cases of Shouldice repair, wound infection in 7 (14%) cases of Bassini's and 2 (4%) cases of Shouldice repair . Recurrence was seen in total 10 (10%) cases in which 8 (16%) cases of Bassini's repair and 2 (04%) cases of Shouldice repair. In 8 (16%) cases of Bassini's repair

3(6%) cases were having bilateral hernia and 4 (8%) cases were having direct inguinal hernia and 1 (2%) case was having pantaloon hernia. Recurrence may be explained by hematoma wound infection which occurred at the same time in both side in bilateral hernia cases and hematoma wound infection, precipitating factor and associated illness in remaining five cases of Bassini's repair Recurrence was seen in total 10 cases in which 08 (16%) cases of Bassini's repair and 02 (04%) cases of

shouldice repair. Recurrence may be explained by hematomas, wound infection, Precipitating factors and associated illness in cases of Bassini's repair.

DISCUSSION

Hernia is among the oldest known affliction of human kind and surgical repair of inguinal hernia is the most common general surgery procedure performed today¹. Despite of the high incidence, the technical aspect of hernia repair continues to evolve. The study of the many operation available in a general surgeon's armamentariums that of hernia repair has been written about repeatedly². The rapid changes that have been witnessed in open approach surgeries, prosthetic surgeries and laparoscopic surgery have made hernia surgery a most interesting field of Endeavour that demand renewed discipline and dedication³. Varieties of procedures are performed but none can be termed as an ideal. This study is conducted to the assess the recurrence rate of shouldice repair and Bassini's repair and efficacy of polypropylene 2-0 as suture instead of stainless steel wire. Feasibility of Shouldice and Bassin's repair at tertiary health care Centre. Study done by Mukter H *et al* on 394 primary inguinal hernia patients were treated in a series 199 patients using Bassini's repair and a consecutive series of 195 patients using Shouldice repair. Recurrence rate was 21.6% in Bassin's repair after a mean observation period of 48 months and 2.6% in shouldice repair after a mean observation period of 26 months. There is no significant difference in post- operative complication i.e. wound infection and hematoma.⁴ M P Simon *et al* has reported series of studies showing recurrence rate is higher using Bassini's than that of Shouldice repair.⁵ Singh K J *et al* carried out comparative study of repair of inguinal hernia by shouldice technique and Bassini's technique on 100 patients with inguinal hernia in the OPD services of hospital; study shows lesser recurrence rate 0% in shouldice and 02% in Bassini's repair and higher rate of satisfaction.⁶ In a study carried by Paul *et al* hematoma seen in 19.2% cases of Bassini's repair and 16.8% cases of Shouldice repair.⁷ In all above study it can be seen that complications are less in Shouldice repair than Bassini's repair indicating the superiority of Shouldice repair over Bassini's repair. Non preoperative preparations, intraoperative complication, operating surgeon, post-operative care which may be vary at different places. We found that complication like fever, hematoma scrotal edema, discharge were more with Bassini's repair than

Shouldice repair and were statistically significant (p value <0.05). In a present study, repair was done using Shouldice technique, we used polypropylene nonabsorbable 2/0 suture material instead of stainless steel wire and prolene no. 1 for the Bassini's repair and we did not find any testicular atrophy. The difference in recurrence rate after inguinal hernia repair using the Shouldice technique and control method (Bassini's) are small but, because extremely large number of these operations are performed each year the medical and economic consequence of the best methods are considerable. The Shouldice repair of inguinal hernia is based on sound principle namely thorough dissection, clear exposure of adequate tissue, a search for secondary hernia and layered reconstruction by approximation of corresponding planes. It can be procedure of choice for inguinal hernia repair at the tertiary health care center.

CONCLUSION

It can be concluded that except for moderate pain complained in Shouldice repair, Shouldice repair is superior to Bassini's repair but need to be followed up for years to conclude on the long term effects. The Shouldice repair can be a procedure of choice that provides the best chance of non-recurrence regardless of anatomical type of hernia at tertiary health care center.

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Source of Support: None Declared
Conflict of Interest: None Declared