

Experience of inguinal hernia repair in rural parts of southern India

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ABSTRACT

Background: Inguinal hernia surgery is one of the most frequent operations undertaken in any hospital. Choice for the ideal repair technique is diversified. Reviews suggest that Lichtenstein tension-free mesh hernia repair has been gold standard.

Aim: To analyze the best method of hernia repair by comparing rates of complications and recurrences.

Methods: This prospective study was undertaken during 2007 and 2009 at MVJ Medical College Hospital in the rural area of Bangalore. 364 patients admitted to the surgical department were included and postoperative outcome like chronic pain; wound infection and recurrence were analyzed.

Results: Lichtenstein mesh repair (57.2%) was the commonest technique undertaken. Post operative complications included surgical pain (3.3% – 22.7%), wound infection (3.3% - 9.1%) and recurrence after laparoscopy (20.0%).

Conclusion: “No tension” mesh repair is one of the ideal techniques for inguinal surgery with minimum postoperative complications. Darn repair and Bassini's anatomical repair also have at par results with mesh repair. Shouldice's's double breasting is not advocated for further surgical training.

Key words: inguinal hernia, repair, post operative pain, chronic groin pain, infection, recurrence.

INTRODUCTION

Hernias are one of the oldest known afflictions of humans presenting for surgical repair. Different types of anatomical repairs have evolved but none could be labelled as the ideal surgical technique.¹ Till over two decades Shouldice's technique of double breasting, followed by modified Bassini's and darn repair procedures were the standard forms for repair.² The low rate of recurrence as claimed by Shouldice's is not achieved in many surgical centers.^{2,3} This led to the invention of tension free techniques using patches which have produced excellent results with low morbidity in comparison to traditional methods.⁴ There was a need felt to recognize the best and most appropriate method of repair by comparing rates of complications and recurrences.

MATERIALS AND METHODS

This prospective study was undertaken from 2007 to 2009 at MVJ medical college hospital in the rural area of Bangalore, India. Institutional ethical clearance committee approval was obtained for the study. A

total number of 518 patients presented with complaints of inguinal hernia and were admitted to the surgical department for repair. Informed consent was obtained from all patients who were posted for surgery. All patients of planned surgery underwent complete investigations for anesthetic fitness. The pre-operative risk factors were adequately controlled. A total of 364 patients were available for long term follow up and these patients were included in the study. Post operatively patients were monitored for early complications up to six weeks and for late complications up to two years and data obtained were recorded at intervals of three months, six months, one year and two years.

RESULTS

With reference to patient distribution and number of cases, 302 (83.0%) patients had unilateral repair and 62 (17.0%) had bilateral repair. With regard to the occupational profile, 69.2% patients were

agriculturists and manual laborers and the remaining were otherwise employed in sedentary jobs. The operating surgeons selected Lichenstein repair in 208 (57.2%) patients, Modified Bassini's repair and darn ing in each 52 (14.3%) cases, Shouldice double breasting in 22 (6.0%) and laparoscopic repair in 30 (8.2%) patients. Immediate post operative pain was assessed by Verbal Rating Scale (VRS). Early post operative complications including seroma and hematoma formation was observed, and late post operative complications including infection, recurrence, chronic pain, impact on sexual function, testicular atrophy, were assessed as documented in Tables-1 and 2.

Table. 1. Early post operative complications in hernia repair types

	Lichen stein (208)	Modifie Bassini's (52)	Darn repair (52)	Shouldice's (22)	Laparo scopic (30)
No complications	136(65.4%)	22 (42.3%)	24 (46.2%)	6 (27.3%)	28 (93.3%)
Seroma/ hematoma	22 (13.8%)	12 (23.1%)	9 (17.3%)	4 (18.2%)	0 (0.0%)
Mild Pain	22 (13.8%)	7 (13.5%)	7 (13.5%)	5 (22.7%)	1 (3.3%)
Moderate Pain	11 (6.9%)	7 (13.5%)	8 (15.4%)	4 (18.2%)	1 (3.3%)
Severe Pain	7 (4.4%)	0 (0.0%)	0 (0.0%)	1 (4.5%)	0 (0.0%)
Wound infection	10 (6.3%)	4 (7.7%)	4 (7.7%)	2 (9.1%)	0 (0.0%)

Table. 2. Late post operative complications in hernia repair types

	Lichenstein (120)	Modified Bassini's (30)	Darn repair (32)	Shouldice's (12)	Laparo scopic (10)
No complications	105 (87.5%)	26 (86.7%)	30 (93.8%)	10 (83.3%)	8 (80.0%)
Late infection	5 (4.2%)	1 (3.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Chronic pain	5 (4.2%)	3 (10.0%)	2 (6.2%)	2 (16.7%)	0 (0.0%)
Recurrence	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (20.0%)
Re-operation	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (20.0%)
Testicular atrophy	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

DISCUSSION

Occupationally, 184 patients (50.5%) were laborers and agriculturists and these were predisposed to hernia by virtue of their work. Coughing, straining and lifting of heavy weights are major contributing

factors for occurrence of hernia. The incidence in our study is high as compared to other studies in the west.⁵

Bassini repair and darn ing were preferred choice in most patients who presented in the emergency with obstruction or strangulation since it appeared that this procedure would avoid mesh rejection and they were more appropriate in patients where tension free repair was difficult. Few surgeons in the United Kingdom prefer Lichenstein repair as it is easier to perform with a low rate of overall recurrence.⁵

The incidence of post operative pain was comparable in Bassini's (27.0%), darn repair (28.9%) and Lichenstein (25.1%) repair. Pain after Shouldice's repair was the highest (45.4%) a reason for lesser preference to this technique. Chronic groin pain after six weeks of surgery ranged between 4.2% and 16.7% between the techniques, and it is reflected that Lichenstein produces less chronic pain. Higher rates of chronic groin pain of 25% to 30% as reported in a study of patients of open hernia surgery has direct implication on the duration of hospital stay and cost of the treatment.^{6,7} This also encourages all the operating surgeons to prefer Lichenstein repair over all other repairs.

Formation of seroma/hematoma in early post operative period was found to be almost similar in all open techniques (13.8% to 23.1%) and none in patients undergoing laparoscopic surgery. This finding is similar when compared with other studies.⁸ The occurrence of seroma/hematoma is often dependent on the use of appropriate surgical technique, utilization of proper surgical skills to control intra-operative bleeding.

Wound infections were found to be ranging in severity from a small cutaneous collection to extensive pus collection. The incidence ranged from 6.3% in Lichenstein repair to 7.7% each in Bassini's and darn repair and 9.1% in Shouldice's repair. This study is comparable to the other studies which emphasize that wound infection is lesser with mesh repair versus anatomical repair.^{9,10}

Recurrence of hernia in our study after laparoscopic surgery was seen in only two patients. They subsequently underwent Lichtenstein repair. This finding is comparable with the other studies who found high recurrence rate.^{11,12} In open type of repairs, some studies found recurrence rates ranging from 0.8% to 1.6%.^{13,14} In our study there was no recurrence in the patients underwent open surgery.

CONCLUSION

Every technique has its share of proponents and opponents and no consensus on 'one perfect' surgery is made. However, comparing tension free repair versus anatomical methods, Lichtenstein method stood the test of time, followed by Bassini's and darn repair techniques. Our experience here influences us to propagate the use of mesh repair

primarily, followed by the Bassini's and darn repairs techniques. Considering the affordability aspect of the patients of rural background there is a need to master the techniques of anatomical repair so as to provide the patient the best of assurance and quality treatment in a cost effective manner.

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