STUDY ON MODIFICATION FOR PAINLESS INGUINAL HERNIA REPAIR

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ABSTRACT

BACKGROUND

It is a retrospective study.

Aim of this study is to minimise the postoperative pain and increase early mobility of the patient to resume their early normal day-to-day work.

MATERIALS AND METHODS

Study included 50 patients of which 25 underwent the modified surgery as invagination of sac with ilioinguinal nerve neurectomy and Mesh repair, whereas the other 25 patients underwent conventional excision of sac and mesh repair.

DISCUSSION

Chronic pain is the most debilitating complication after inguinal hernia repair which affects patient's satisfaction and quality of life. It is found in this study that the patients who underwent modified painless hernia surgery with sac invagination along with neurectomy and Mesh repair have significant painless post-operative period and early mobility for normal work.

RESULTS

In this study out of 50 patients, the patients who underwent neurectomy with sac invagination did not develop significant pain during 6 months postoperative period in contrast to those who underwent only mesh repair with sac excision.

CONCLUSION

As this study is in a small scale; however, a large scale study adopting this procedure in a multi-region study can consolidate the present findings.

KEYWORDS

Inguinal Hernia, Postoperative Pain, Mesh Repair, Neurectomy, Invagination of Sac.

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BACKGROUND

Inguinal hernias account for 75% of all abdominal wall hernias, and with a lifetime risk of 27% in men and 3% in women. Repair of these hernias is one of the most commonly performed surgical procedures in the world.^[1,2]

Although the laparoscopic repair of inguinal hernias have advantages.^[3,4,5,6,7] like reduced postoperative pain, diminished requirement for narcotics, earlier return to work over the conventional open repair i.e. the open, mesh-based, tension-free repair remains the criterion standard, specially where the hands of adequately trained surgeons are lacking. But in such an open method chronic post-operative pain and quick mobility for work are the major health concern.

The present study is contemplated to increase the quality of life in regard to post-operative pain even by this open surgical method.

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MATERIALS AND METHODS

This is a retrospective study done in the Unit –II of Dept. of Surgery at ESIC Medical College, Joka, Kolkata, West Bengal, India from September 2015 to February 2016. All cases of Painless Inguinal Hernia presented in the SOPD of Unit -II were included in the study. date, sex, age, clinical presentation, related history (Unilateral or Bilateral) were noted. The age of the diagnosed patient varies from 20 yrs. to 70 yrs. with mean age of presentation at 46 yrs. Only Male Patients were included in this study. The study comprises of 50 patients submitted to inguinal hernia surgery with open technique under regional anaesthesia. Inclusion criteria were painless inguinal hernia and exclusion criteria were previous surgery/recurrence, pain over hernia, and incarcerated hernias.

Out of 50 cases of inguinal hernia in 6 months' duration, all of them underwent surgery. Out of these, 25 patients underwent Tension Free Mesh Repair along with Modification like Inguinal neurectomy, and invagination of hernia sac in indirect & direct Hernias (as retrieved from Operation Note) are considered as Test group and remaining 25 patients from the inclusion group underwent only tension free mesh repair with sac excision without neurectomy or sac Invagination are labelled as control group for this study and the results are compared. In the post-operative period, 8 patients had wound infection treated conservatively with antibiotics and 4 patients developed scrotal oedema treated with antibiotics and scrotal support. Patients were followed up for 6 months. The

informed written consent was accepted from all of the patients or their responsible relative and the study design was approved by ethical clearance committee of the institute. For grading of pain sensation perceived by the patient who underwent surgical procedure the numerical pain rating scale (NRS-11) was used and as per this scale 0-3 is considered as Mild, 4-6 as moderate and 7-10 as severe.

Statistical analysis wherever applicable was done using statistical SPSS version 12. Student's T test was done in between control and test group (sample size experiencing different degree of pain sensation as per NRS scale) to determine the significance level and $P < 0.05$ is considered as statistically significant.

RESULTS

In the present study, it was found that out of 50 patients, 30 patients (60%) had visible hernia on standing and twenty patients (40%) had palpable impulse on cough. It was also found that patients with indirect inguinal hernia is preponderant over direct inguinal hernia (Table-1).

Moreover among the diagnosed (studied) group, the occurrence of right-sided hernia is significantly higher than left-sided inguinal hernia (Fig-1)). Also of the total 50 cases, in 15 cases there were adhesions within the contents of sac and in 35 patients there were no adhesions within the sac.

The present study also indicates that the patients who underwent neurectomy with sac invagination did not develop significant pain during 6 months post-operative period in contrast to those who only underwent mesh repair with excision of sac. Amongst those where modified surgery was not performed, 10 patients develop moderate pain requiring no analgesics and 5 patients had severe pain requiring analgesics. It is further observed that amongst the test group (out of 25 patients), 21 experienced mild pain and 3 experienced moderate pain requiring no analgesic and only 1 suffered from severe pain who required mild analgesics for initial few weeks after the modified surgery.

	Direct Inguinal Hernia		Indirect Inguinal Hernia	
	Sample No.	% of Occurrence	Sample No.	% of Occurrence
Male	20	40	30	60
Total	20	40	30	60

Table 1. Occurrence of Direct and Indirect Inguinal Hernia

	Right Inguinal Hernia		Left Inguinal Hernia		Bilateral Inguinal Hernia	
	Sample No.	% of Occurrence	Sample No.	% of Occurrence	Sample No.	% of Occurrence
Male	29	58	21	42	4	8
Female	NA	NA	NA	NA	NA	NA
Total	29	58	21	42	4	8

Table 2. Preponderance of Right & Left Inguinal Hernia over Bilateral Inguinal Hernia

Group	Total No. of Sample	No. of Samples - Mild Pain (NRS-11:0-3)	No. of Samples - Moderate Pain (NRS-11:4-6)	No. of Samples - Severe Pain (NRS-11:7-10)
Control	25	0	10	5
Test	25	21	3	1

Table 3. Comparison of Postoperative Complications after Mesh Repair between Test (Neurectomy + Sac Invagination) and Control Group (No Neurectomy + Sac Excision)

NRS= Numerical rating scale for pain measurement scale

SSC Invagination

Ilioinguinal Nerve to be Excised

Mesh Implantation

DISCUSSION

Inguinal hernia is one of the most frequently performed surgeries where most patients have painless inguinal hernia over time. Different studies in different parts of world have shown that inguinal hernia.^[3,4,5,8,9] is more common in males. It is also found that the indirect hernia is more common ($P <$) than direct hernia. Moreover, the present study indicates the preponderance of right inguinal and left inguinal hernia over the bilateral hernia in this belt as shown by fig 1. which is in accordance with some other studies.^[10,11]

Surgical repair is recommended for medically fit patients with painless inguinal hernia. But in open method, especially the post-operative pain and long immobility are the challenging issues to all surgeons. Chronic groin pain is one of the most debilitating long term complications after inguinal hernia repair which affects patient's satisfaction and quality of life after operation. Recent retrospective studies.^[12,13] show the excision of ilioinguinal nerve and invagination of sac without excision wherever feasible along with tension free mesh implantation were associated with lower incidence of chronic groin pain after the operation.

The present study consolidates that abdominal wall repair by mesh repair along with inguinal neurectomy with invagination of sac is highly effective to reduce the groin pain than the patients who underwent the mesh repair with excision of sac without neurectomy as in the group where neurectomy was not performed post-operative groin pain (OMIT) developed within 6 months of post-operative followup in all of the 15 cases.

CONCLUSION

The present study and its findings thus consolidate the suggestive ways and means to reduce the post-operative pain following tension free mesh repair of inguinal hernia. However, the limitation of this study is the small sample size and limited followup period. So, prospective study on larger scale with larger followup is required to establish the role of prophylactic ilioinguinal neurectomy and invagination of sac instead of excision of sac wherever feasible to improve the quality of life of patients with painless inguinal hernia.

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