An experience of open Mesh Hernioplasty under local anaesthesia

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ABSTRACT

BACKGROUND: Mesh repair is commonly used procedure for inguinal hernia. Many times elderly patients are not fit for general anesthesia so we had this study to know the outcome of mesh repair under local anesthesia. To determine the outcome of open mesh hernioplasty performed under local anesthesia in terms of perioperative complications.

OBJECTIVE: To prove the feasibility of inguinal hernia repair under local anesthesia

MATERIAL AND METHODS: This Descriptive study was conducted at Surgical Deptt. Saidu Teaching Hospital, Swat and Rahat Medical Centre Daggar, Buner from May 2008 to May 2016. A total of 520 male patients with inguinal hernias were subjected to open mesh hernioplasty (Standard Lichtenstein proline mesh tension free repair) after taking written informed consent. They were closely observed intra operatively and were then followed up for complications if any and data were collected through pre-designed proforma and analyzed via computer soft ware.

RESULTS: Age of patients was within the range of 20 - 70 years. 432 (83%) of patients had mild or no pain(VAS Scale 0-3) while 73 (14%) had moderate (VAS Scale 4-6) and 15 (3%) patients had severe (VAS Scale 8-10. None of the patients developed any anaphylaxis during or after surgery.. Haematoma/ wound ecchymosis was seen in 21(about 4%) cases,11 cases (2%) had vomiting,5 patients (0.96%) had urinary retention,13 patients (2.5%) had minor wound infection with redness and oedema of the incision site and5 (0.96%) had recurrence of hernia.

CONCLUSION: Local anesthesia has easy applicability and very low rate of pain and post-operative complication. It also encourages early mobilization and early discharge from hospital. It is cost effective and reduces hospital burden. When all these advantages are taken in to consideration, local anaesthesia can be recommended as a safe and effective technique for inguinal hernia repair. In addition for patients who were un fit for general anaesthesia, local anaesthesia is a better alternative.

Key Words: *Inguinal hernia, Open mesh hernioplasty (Lichtenstein), Local anaesthesia.*

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INTRODUCTION

Inguinal hernia is a one of the common surgical problems worldwide[1,2]. Therefore it has got a great economic impact on patient particularly in developing world which has got people with poor socioeconomic conditions. Without prompt surgical interventions it may lead to serious complications[3,4,5].

As most of the patients of inguinal hernia are old aged[1] having multiple comorbids[6], so the current trend is hernia repair under anesthetic procedures with low risk of complications[7,8].

There are lots of randomized controlled trials on inguinal hernia repair under local anesthesia around the globe and there are promising results from some centers of excellence worldwide [9-11].

Local anesthesia with or without sedation applied for this type of surgery is a method with less impact on the function of organs and systems, and is safe, effective, easy to perform, with lower incidence of side effects, such as cardiovascular instability, nausea, vomiting or urinary retention, allowing rapid mobilization and resulting in a shorter hospital stay[6].

The aim of this study is to prove the feasibility of inguinal hernia repair under local anesthesia, its safety, efficacy and the short learning curve.

MATERIAL AND METHODS

It was a descriptive study conducted at Surgical Deptt. Saidu Teaching Hospital, Swat and Rahat Medical Centre Daggar, Buner from May 2008 to May 2016. All the patients were male, female patients were excluded from the study for social reasons. Patients between 20 and 70 years age were included in the study. 35% of the patients had co morbidities like, cardiovascular, respiratory and geriatric problems. Patients who were enrolled in the study were informed about the nature of anesthesia and surgical procedure before surgery and informed consent was taken. Approval was taken from hospital ethical committee.

The selected patients had thorough general physical examination and systemic examination.

In operation theater after securing the intra venous line operation site was cleaned and drapped. 50 to 100ml of 0.5% lignocaine (xylocaine) with 1:200000 adrenaline was used A 23G needle was used for injection. Nerve block as well as infiltration technique was used.

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First injection was given 1.5 cm above and medial to the anterior superior iliac spine to block the ilioinguinal nerve. A second injection was given just above the symphysis pubis to block genital branch of genitofemoral nerve. A third injection was given 0.5cm above the mid inguinal point to block the iliohypogastricneve. During each injection a skin wheel was raised and needle was deepened and more anaesthetic was injected upto extra peritoneal plan. A total of 10 cc solution was injected. The proposed site of incision was also infiltrated with the same solution(above and parallel to medial half of inguinal ligament). Some solution was kept in disposable syringe to be used when needed. Before incising the external oblique aponeurosis local anaesthetic was injected beneath it.

The sac was exposed and dealt with accordingly that is herniotomy performed for indirect while plication was performed for direct inguinal hernia. Standard Lichtenstein proline mesh (Ethicon^{R} 6x11 cm) tension free hernioplasty performed for strengthening posterior inguinal wall.

The procedures took time in range of 30 to 45 mints. All the patients were given I/V prophylactic antibiotics (injection Cephradine 1 gm) at induction and injection Declofenac Sodium 75 mg I/M in the post operative period. After the procedure the patients were shifted to ward/ room and were discharged within 24 hours. All the patients were followed up at 10 days, 6 months and one year interval.

All of the outcome variables were recorded on pre-designed proforma and data analysis performed through computer software SPSS version 16.0.Post operative pain was measured by VAS scale. Frequencies and percentages were calculated for other categorical variables.

RESULTS

All patients were within the range of 20 - 70 years. The mean age of patients was 50 ± 6.5 SD years.

432 (83%) of patients had mildor no pain(VAS Scale 0-3) while 73 (14%) had moderate (VAS Scale 4-6) and 15 (3%) patients had severe (VAS Scale 8-10)

Haematoma/ wound ecchymosis was seen in 21(about 4%) cases. Of these 7(33%) patients were in the early phase and 14(67%) were in the late phase. These patients were managed conservatively.

Eleven cases (2%) had vomiting in the early phase; which was treated with injection Ondansetron 8mg.Five patients (0.96%) had urinary retention, of which 3 needed catheterisation while 2 voided with analgesia, reassurance and running tap water in the wash room, 13 patients (2.5%) had minor infection with redness and oedema of the incision site, which responded to oral antibacterial therpy.

Eleven patients (2.1%) had scrotal oedema which subsided within three to four weeks time with scrotal support and anti inflammatory Serratiopeptidase. At the time of discharge patients were asked about the future option to undergo any surgical procedure under local or general anaesthesia, 509 (97.7%) of them opted for local anaesthesia. No case of recurrence was reported upto one year follow up.

Details of results are mentioned in the following table.

Outcome variables (n = 520)

Complications	n	% age
Haematoma/ wound echymosis	21	4
Post operative vomiting	11	2.1
Urinary retention	5	0.96
Wound infection	13	2.5
Scrotal oedema	11	2.1
Patients will for local anaesthesia in future	509	97.7
Recurrenceupto one year follow up	0	0.00
Mild postoperative pain (VAS 0 - 3)	432	83
Moderate postoperative pain (VAS 4 - 6)	73	14
Severe postoperative pain (VAS 7 - 10)	15	3

DISCUSSION

Inguinal hernia is an important public health problem, which keeps a very large number of individuals out of their work posts.[12]The prevalence of inguinal hernia is high in middle and and old age.[12] Most of the elderly patients with inguinal hernia also have some concomitant disease which increases the surgical risk[13]. Cardiovascular, pulmonary and urinary complications can occur after inguinal hernioplasty when the procedure is performed under General or spinal anaesthesia , on the other hand patients operated under local anaesthesia do not generally have serious perioperative complications[14]. Several controlled clinical trials have shown that local anaesthesia provides the best clinical and economical benefits to patients[10, 15,16]. In spite of all these benefits the use of local anaesthesia in inguinal hernia surgery has not been established among surgeons worldwide.

In our study 104(20%) patients had minor problems during the procedure and no patient developed anaphylaxis. A study by Hepner DL et al in 2003 showed the Anaphylaxis rate of about 1% to local anaesthesia. [17]

Pain is the main factor in post-operative morbidity. In our study perioperative pain was mild or absent (VAS 0 - 3) in 83%patients.Van wean and colleagues in their study noticed that patients undergoing inguinal hernia repair surgery under local anaesthesia had significantly less pain[18]. Local anaesthesia is highly effective in alleviating post-operative pain when both nerve blocking technique and local wound infiltration is used[19]. Immediate ambulation prevents muscular spasm and inhibits pain cycle.[20]

The incidence of post-operative nausea, vomiting and hypotension was negligible in our study and this was in line with other studies[7,8,10,12,14].

Urinary retention was noticed in a few patients, especially in older patients, who commonly have in large prostates[21]. Another advantage of hernia repair under local anaesthesia is that the procedure forces the surgeon to be gentle to use sharp dissection, meticulous technique. He is able to clearly delineate the defect by asking the patient to cough and can test the adequacy of his repair and reduce the chances of recurrence [22].

CONCLUSION

Local anaesthesia has easy applicability and very low rate of pain and post-operative complication. It also encourages early mobilization and early return to work. It is cost effective and reduces hospital burden. When all these advantages are taken in to consideration, local anaesthesia can be recommended as a safe and effective technique for inguinal hernia repair. In addition for patients un fit for general anaesthesia, local anaesthesia may be a better alternative.

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