ORIGINAL ARTICLE

Postoperative Outcome of Mesh Hernioplasty Under Local Anaesthesia As A Day Case Procedure

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ABSTRACT

Objective — *To evaluate the outcomes of inguinal hernia mesh repair under local anaesthesia as a day case surgery.*

Study design — *Descriptive case series.*

Place & Duration of study — *Surgical unit, Hayatabad Medical Complex Peshawar, from September 2007 to August 2008.*

Methodology — *Patients having direct/indirect inguinal herniae of either side who underwent Lichtenstein repair under local anaesthesia as a day case procedure were included. Patients below 20 years of age were excluded. Similarly those patients having acute complications of hernia like obstruction and strangulation were also excluded. Patients were followed up in the OPD for 02 years and any positive findings noted during this time period, recorded.*

Results — *All 135 patients were male with mean age of 52.5 years (± 2.4 years SD). Fifty-eight (42.96%) patients had direct inguinal hernia (right side 35 cases and left side 23 cases). Seventy-seven had indirect inguinal hernia (right side 45 cases and left side 32 cases). Postoperative complications included urinary retention in 08 (5.93%) cases, seroma formation in 06 (4.44%), wound infection in 10 (7.41%), scrotal oedema in 07 (5.19%) and chronic neuralgic pain in 02 (1.48%) cases. Three (2.94%) patients developed recurrence during the follow up period.*

Conclusion — *Inguinal hernia mesh repair can be performed safely and effectively under local anaesthesia with minimal postoperative complications and acceptable results.*

Key words — *Inguinal hernia, Lichtenstein repair, Local anaesthesia.*

INTRODUCTION:

Inguinal hernia repair is one of the most commonly performed procedures in general surgical units.[1] In the United States, 730000 hernia operations were performed per annum.[2] The basic principle of hernia repair is a tension free repair.[3] The recurrence rate after hernia repair is generally reported as 15% or more while postoperative pain and disability are more frequent.[2] Hernia surgery has undergone a dramatic evolution over the past 18 years. The major advances include the introduction of the concept of tension free repair with the use of prosthetic materials (Lichtenstein's repair)[4] and also more recently laparoscopic total extra-peritoneal (TEP) repair for hernia.[2,5] There has been debate whether to perform an open or laparoscopic mesh repair. The latter is associated with less postoperative pain and early return to work but it has the drawback of more cost, longer operative time and longer learning curve.[2] Moreover there are many studies which have shown that the overall recurrence rates are significantly higher after laparoscopic repair than after open repair of primary hernia.[1]

The open method of mesh repair is simple, effective,

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easy to learn and has excellent results.[6] There is minimal postoperative pain due to decreased tension on tissues and is associated with low recurrence rate i.e. 01%.[2] The polypropylene mesh induces synthesis of collagen by inducing an inflammatory response and setting up a scaffolding effect.[7] The longer postoperative period required to return to work as compared to laparoscopic mesh repair can be acceptable when similar results are compared with the classical methods of inguinal hernia repair.[2]

Mesh repair can be performed under local, general or spinal anaesthesia but many surgeons prefer local anaesthesia especially in the elderly and moribund patients,[8] as it avoids the systemic effects associated with general, spinal and regional anaesthesia.[2,3] It has a wide safety margin and the cost of mesh repair under local anaesthesia is significantly low.[2] With local anaesthesia, the patient is fully awake and can move about which reduces the hospital stay. Due to early mobility, the postoperative convalescence period is reduced and most of the patients can resume their work within a week.[2] In this study we report our experience of inguinal hernia repair with mesh under local anaesthesia.

METHODOLOGY:

This study was carried out at surgical unit, Hayatabad Medical Complex Peshawar from September 2007 to August 2008. Children and adolescents below 20 years were excluded. Patients with recurrent or large complete hernias or those having acute complications of hernia like obstruction and strangulation were also excluded. Patients were admitted through outpatient department (OPD). Detailed history with special reference to occupation, and positive examination findings were recorded. All patients were counseled in detail about the type of anaesthesia, surgical procedure and likely postoperative complications.

Surgery was performed on elective morning list under local anaesthesia. Preoperatively antibiotic like cefuroxime or co amoxiclav was administered intravenously along with intramuscular tramadol and dormicum injection . A 10 ml of 1% xylocaine with adrenaline and 10 ml of 0.25% bupivacaine mixed with 30 ml of normal saline were used to achieve the inguinal block. Mean volume of local anaesthetic solution used was 50 ml (25-100 ml). After surgery, patients were kept in surgical ward under observation and their vital signs were regularly checked. Postoperatively, injectable analgesia was used according to the severity of pain. Patients were sent home in the evening between 06:00 -09:00pm after checking their vital signs. At the time of discharge, patients were advised oral antibiotics having gram positive cover, diclofenac sodium 50 mg twice a day and ranitidine 150 mg twice daily. Patients were instructed to visit outpatient department for follow up 02 weeks, 06 months, one year and finally 02 years after surgery to look for symptomatic improvement and recurrence of hernia.

Early outcome was assessed by postoperative analgesia requirement, seroma formation, urinary retention and wound infection. Long term outcome was measured in terms of neuralgic pain and hernia recurrence. All positive findings were recorded. Patient satisfaction about the type of anaesthesia and surgical procedure was graded as dissatisfied, satisfied and highly satisfied.

RESULTS:

In this study, a total of 135 patients were included. All patients were male having age range of 20-69 years and mean age of 52.5 years (± 2.4 years SD). Majority of the patients (49.63%) belonged to 40-59 years age group. Table I shows the type and side of inguinal hernia

Early complications included urinary retention in 08 (5.93%) cases which relieved with early mobilization. Only one patient required catheterization for acute urinary retention. Seroma formation occurred in 06 (4.44%) cases which settled down with needle aspiration and scrotal support. Wound infection occurred in 10 (7.41%) cases; all were superficial infection and treated with regular antiseptic dressings and oral antibiotics. No patient needed hospitalization or I/V antibiotics or mesh removal. Scrotal oedema developed in 07 (5.19%) cases which resolved with rest and scrotal elevation. Late complications included chronic neuralgic pain in 02 (1.48%) cases. These patients were reassured about the benign nature of pain and only oral analgesics or topical analgesic cream were prescribed to them. Hernia recurrence was picked up in 03 (2.94%) cases during their follow up visits (table II).

Out of 135 patients, 102 (75.56%) attended OPD and completed their follow up visits while 33 (24.44%) patients were lost to follow up. Eighty five percent of the patients were highly satisfied with the type of anaesthesia and surgery as a day case procedure.

DISCUSSION:

Elective inguinal hernia repair is one of the most common surgical procedures but till today, the most effective surgical technique is unknown.[1] The Lichtenstein's repair is the most commonly used procedure mainly owing to the ease of operation

Table I: Type and Side of Inguinal Hernia (n = 135)

Type of hernia	Right side	Left side	Total
Direct	35	23	58
Indirect	45	32	77
Total	80	55	135

Table II: Morbidity

Complications	No. of patients	Percentage
Urinary retention	08	05.93%
Seroma formation	06	04.44%
Wound infection	10	07.41%
Scrotal oedema	07	05.19%
Chronic neuralgic pain	02	01.48%
Recurrence	03	02.94%

and because it provides a tension free reinforcement of the posterior wall of the inguinal canal.[1] In addition, several randomized clinical trials have reported fewer recurrences with this repair than with conventional suture techniques.[2] It can be performed under any form of anaesthesia known in medicine.[1] Patients with symptomatic hernias should be offered elective surgical repairs under local anaesthetic infiltration,[9] although general, local or epidural anaesthesia can all be safely used.[10,11] The shorter operating, convalescing and ambulating times[12] as well as early discharge means that more elderly and moribund patients can safely undergo repairs.[12,13] It can also be employed in the general practitioner setting in the West, where the load on specialized centers can be considerably reduced.[14] It has also been shown to have considerable cost advantages over regional and general anaesthesia.[15]

In the present study, all 135 patients were males. Different local and international studies show a similar male preponderance and it appeared that it was virtually a disease of male patients.[6,16-18] In the current study, postoperative complications are comparable to different studies.[8,19-21] Urinary retention after repair under local anaesthesia is less common as compared to general anaesthesia.[22,23] In our study 5.93% patients had postoperative urinary retention. This figure is slightly higher than 2 % reported by Choudry ZA et al[2] but almost comparable to 4% by Rehman AU et al.[1] Postoperative seroma formation was 4.44 % in our study which is almost similar to 4% by Rehman AU et al.[1] In literature, the reported rates of seroma formation was 1.6% to 12.6%.[19,24] Wound infection was 7.41%. This figure is slightly higher than 5.4% by Khan SM et al[6] but comparable to 8% by Rehman AU et al.[1] Tseng CC et al reported 9 cases of wound infection in their study of 1411 patients.[25]

In our series no case of mesh infection was recorded. Scrotal oedema was noted in 5.19% patients which is slightly higher than 2.7% by Khan SM et al[6] but acceptable while considering this particular procedure which needs extensive dissection under local anaesthesia. Lichtenstein repair of inguinal hernia has been shown to have recurrence rates tenfold lower than those of Shouldice repair.[1] Two (1.48%) patients had chronic neuralgic pain up to 1 year but subsided with conservative measures. This is comparable to 1.2% reported by Choudry ZA et al[2] but less than 16% by Rehman AU et al.[1] In the current study, only 2.94% of patients were picked up with recurrence of their hernia at 2 years follow up which is slightly higher than international figure of 1%[2,6] but comparable to 2% by Rehman AU et al.[1]

CONCLUSIONS:

Inguinal hernia mesh repair can be safely performed under local anaesthesia with acceptable postoperative complications. It has got a low recurrence rate and is a procedure of choice in elderly patients especially those with associated comorbid conditions.

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