

# OUTCOME OF REPAIR OF REDUCIBLE INGUINAL HERNIA UNDER LOCAL ANAESTHESIA

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## ABSTRACT

*Objective:* To audit the outcome of repair of reducible inguinal hernias under local anesthesia.

*Study Design:* Quasi experimental.

*Setting & Duration:* Hamdard University Hospital and other private hospitals in Karachi from January 2004 to December 2006.

*Methodology:* Seventy seven patients with 80 hernias were included in the study. Patients with bilateral hernia had one side at a time and the other side was repaired after an interval of 3 months. A Lichtenstein repair was carried out under local anaesthesia (lignocaine) in all patients. An intravenous cannula was inserted just prior to surgery and midazolam in 1mg quotient and nalbuphine in 2mg quotients were given if required. Patients were encouraged to be ambulant and mobile 2 hours after surgery and were discharged home same evening or following morning.

*Results:* One patient developed urinary retention. There was no frank wound infection, but 4 patients developed mild cellulitis / erythema noticed on the visit on the 5th post-operative day; they all responded to antibiotic therapy. There is no recurrence to date with fifty seven hernias having completed 2 year follow up and 19 one year follow up. Seventy five (97.4%) patients were completely satisfied with repair under local anesthesia and expressed the view that should they need a repair on the other side, they would opt for local anesthesia.

*Conclusion:* Repair of reducible inguinal hernia can be very satisfactorily carried out under local anesthesia. With obvious benefits in terms of costs, shorter duration of admission and fewer voiding difficulties, it should be offered to all patients with reducible inguinal hernias.

**KEY WORDS:** Inguinal Hernia, Local Anaesthesia, Hernioplasty, Hospital Stay

## INTRODUCTION

Inguinal hernia repair is one of the most commonly performed operation and although the incidence in our country is not known, in the developed world the life time risk is computed to be 27% for men and 3% for women.<sup>1</sup> It is estimated that worldwide over two million hernia repairs are carried out each year.<sup>2</sup> Therefore, even small benefits in cost and complication rate have considerable importance.

Local anaesthesia for inguinal hernia repair has obvious benefits in terms of cost, shorter duration of admission, less post-operative pain and fewer micturition difficulties.<sup>3-5</sup> However, despite obvious and attractive benefits in a resource limited country general and spinal anaesthesia seems to be the preferred option in most inguinal hernia repairs carried out in Pakistan and many of the published articles from good centers do not even mention local anaesthesia.<sup>6,7</sup> Local anaesthesia for inguinal hernia repair has been used by the authors for the past several years, therefore it was decided to prospectively look at patient satisfaction, complications and recurrence rates, length of hospital stay and return to normal activity after inguinal hernia repair under local anaesthesia.

## METHODOLOGY

The study was carried out between January 2004 to December 2006 at Hamdard University Hospital and

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other private hospitals in Karachi. Adult male patients with reducible inguinal hernia were included. Patients with bilateral hernia were offered repair of one side at a time, with the other side to be repaired after a 3 month period. A total of 87 patients with 90 hernias presented during this period, four patients had irreducible hernias and 6 patients refused local anesthetic repair and were excluded from the study, therefore 77 patients with 80 hernias were included in the final study group.

Pre-operative workup was done on an out-patient basis and patients were admitted on the day of surgery. Solid food was withheld 4 hours prior to surgery and fluids were allowed up to two hours before operation. Diclofenac 100 mgs suppository was given one hour prior to the procedure and an intravenous cannula was passed in the ward.

In the operating theatre, 1.2 gms of Co- Amoxiclav was given intravenously as a single dose prophylactic antibiotic. Local anesthesia was achieved by giving 5ml of 1% lignocaine with adrenaline in the line of the incision. After a small incision on the lateral part of the incision, external oblique aponeurosis was exposed and about 15ml of 0.5% lignocaine with adrenaline was injected under the external oblique prior to opening the canal. Procedure was then continued with the completion of skin incision, thus allowing the local anesthetic to effect a nerve block. The hernial sac was dealt with as appropriate and a 6 x 11cms Polypropylene mesh was placed over the posterior wall, splitting the lateral end for the spermatic cord and mesh was secured with 2/0 prolene.

The external oblique was closed with 2/0 vicryl and skin with subcuticular 3/0 prolene. If the patient experienced discomfort, Nalbuphine in 2 mg quotients with Midazolam in 1 mg quotients were given intravenously. A ceiling of 6 mg Nalbuphine and 3 mg Midazolam was kept and no patient received more than these limits.

Post-operatively the patients received regular Paracetamol 1 gram 8 hourly, Diclofenac Sodium 50 mgs 12 hourly and Omeprazole 20 mgs 12 hourly. The patients were advised to taper the analgesics as they felt appropriate and omeprazole was discontinued once Diclofenac was no longer needed. They were discharged home either on the evening of the surgery or the following morning, with arrangements for the first follow up visit on the 5th post-operative day for inspection of wound. They were then seen at 10 days for suture removal, and then at 3 months, 1 and 2 years to look for recurrence.

## RESULTS

A total of 77 patients with 80 hernias were included in

the study. Mean age was 54.5 years, with a range of 22 to 81. Thirty nine patients had right sided, 35 left sided and 3 had bilateral hernias. The patients were assessed for complications, specifically urinary retention, seroma formation, wound infection and recurrence. They were also asked if they were happy with repair under local anaesthesia and if they required a repair on the other side, would they prefer to have it done under local anaesthesia or not.

One patient developed urinary retention. He was catheterized, the catheter was removed the following day and he was discharged home that evening. Three patients developed seromas, one of which required aspiration in the out-patient clinic, the other two being minor ones that resolved spontaneously. Four patients had erythema or mild cellulitis, witnessed on 5th post-operative day and were started on a 6 day course of Co-Amoxiclav 1gm 12 hourly. There were no frank wound infections. We have completed 2 year follow up on 57(71.25%) hernias and 1 year follow up on 19(23.75%) hernias. Four (5%) patients have been lost to follow up and attempts to trace them via telephone have not been successful.

Seventy five (97.4%) out of the 77 patients were very happy with the repair under local anaesthesia and said that if they needed to have the repair on the other side, they would opt for the same method of anaesthesia. Three of these patients actually had the procedure on the other side under local anaesthetic.

## DISCUSSION

With obvious and proven advantages such as reduced cost, less time spent in theatre, shorter duration of admission, reduced post-operative pain and fewer micturition difficulties<sup>3,7,8</sup> local anaesthesia should be the method of choice for groin hernia repair. Like Wilhelm, we also believe that all surgeons in resource poor countries should be taught and encouraged to use local anaesthesia more frequently for elective inguinal hernia repair.<sup>9</sup>

Lichtenstein open mesh repair technique was used as this is a relatively simple and time tested technique, which has overcome the problems of technical difficulty and recurrence. Although this is the most widely used technique in open hernia surgery, other techniques such as prolene hernia system, "held in mesh repair" and mesh plug repair under local anaesthesia have all been recently published.<sup>10-12</sup>

One patient in the study group developed urinary retention as he was on alpha blockers. No other patient had any voiding difficulty, which contrasts with significant

micturition difficulties seen in patients undergoing hernia repair under spinal and general anaesthesia.<sup>8,13</sup>

A policy of single dose antibiotic was adhered to, with a review of the patient on the 5th post-operative day to look for signs of wound-related complications. This contrasts with the recommendation of not using prophylactic antibiotics in "clean" operations such as hernia repair.<sup>14</sup> There was no frank wound infection with purulent discharge and a very small number had cellulitis and erythema requiring antibiotics.

Overall patient satisfaction in this series was excellent. Only 2(2.6%) out of 77 patients felt that if they needed to have surgery on the other side, they would opt for general anesthesia, as they felt uncomfortable during the procedure. Although the series is small and follow up is relatively short, no recurrence have been seen in this series.

### CONCLUSION

Open repair of reducible unilateral inguinal hernias can be very satisfactorily carried out under local anesthesia. It has obvious benefits in terms of costs, shorter duration of admission and reduced voiding difficulties.

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