

Original Article

Efficacy of Local Anaesthesia and Simplicity of Mesh Plug Technique in Open Inguinal Hernia Repair in Patients Above 60 Years of Age

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ABSTRACT

Background: Local anesthesia offers several advantages over other types of anesthesia because it is limited to a small body area. This study evaluates the efficacy of local anesthesia and the simplicity of the Mesh Plug technique in open inguinal hernia repair, particularly in patients over the age of 60 years.

Methods: A prospective study was conducted on 150 patients above the age of 60 who were admitted to a specialized hernia clinic in the Armed Forces Hospital, Southern Region, Saudi Arabia. They underwent inguinal hernia repair using the Mesh Plug technique under local anesthesia as a day surgery procedure. The mean age was 69 years. Concomitant diseases were present in 60 (40%) patients. Local anesthesia was used in 144 (96%) patients. Operative time, hospital stay and the postoperative analgesic requirement were recorded.

The postoperative pain was evaluated for the first eight hours using the Wong/Baker face scale.

Results: The mean hospital stay was 0.6 day (range 8 hours - 7 days), 138 patients were discharged after eight hours from the day surgery unit, while 12 patients stayed between 1-7 days. The mean operative time starting from local anesthesia infiltration was 36 minutes (range 30-50 minutes). Local complications were reported in 39 men, 18 (12%) had bruising, 18 (12%) had a seroma and three (2%) had neuralgia. Neither infection nor recurrence was recorded during the period under review.

Conclusion: Local anesthesia and the Mesh Plug technique in inguinal hernia repair is a safe and effective procedure in elderly patients. Age and concomitant diseases should not be a contraindication to elective hernia repair.

KEY WORDS: elderly patient, inguinal hernia, local anesthesia, Mesh Plug technique

INTRODUCTION

Local anesthesia has been known since Edoardo Bassini used cocaine as a local anesthetic for hernia surgery, when general anesthesia was contraindicated^[1]. The methods and results of inguinal hernia repair have received a great deal of attention over the last two decades. Recurrent groin hernia is a frequent surgical problem. The Mesh Plug method, described by Gilbert in 1987^[2], was a truly innovative contribution to the treatment of primary and recurrent groin hernias. Chronic disease becomes a major health factor, and between the ages of 45-64 years about 72% of patients will have one or more chronic condition, while that percentage increases to more than 85% for a person older than 65 years^[3]. Furthermore, chronic medical disease is sometimes a contraindication to surgery, particularly under general anesthesia. Local anesthesia offers several

advantages over other types of anesthesia because it is limited to a small body area. Thereby causing minimal interference with organ function and physiological systems that allows earlier mobilization and a shorter hospital stay^[4]. The incidence of inguinal hernia increases markedly with age. In the group of 65-74 year olds, it is 40%, while in the group aged over 75 years, the figure reached 47%^[5]. We carried out this study to evaluate the efficacy of local anesthesia and the simplicity of the Mesh Plug technique in such a group of patients.

PATIENTS AND METHODS

A total of 150 consecutive patients with 162 inguinal hernias, 147 cases were primary and 15 cases were recurrent (69 were indirect and 78 were direct) were seen in a specialized hernia clinic, and scheduled for hernia repair as a day surgery. All

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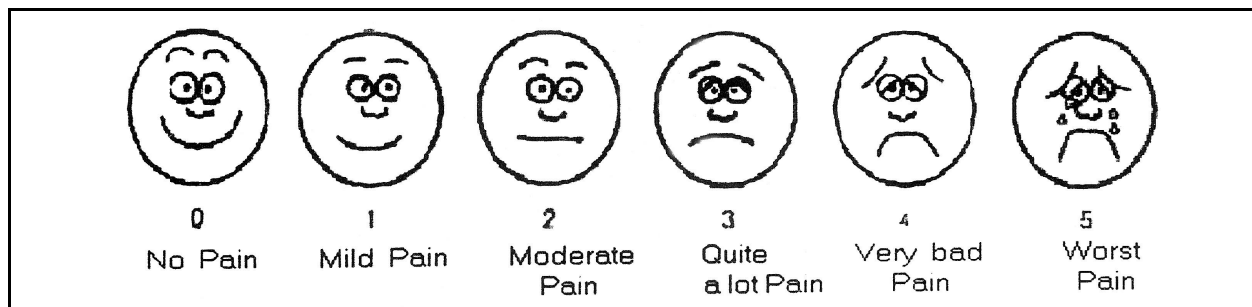


Fig. 1: The Wong / Baker face rating scale

patients were above 60 years of age and there was no exclusion, the mean age being 69 years (range 60-90). In 12 patients the hernia was bilateral, and both were repaired at the same sitting. Concomitant medical problems were documented in 60 (40%) patients (Table 1), 144 patients were operated on as a day surgery, six patients were admitted pre-operatively to the ward, to control their coagulopathy. Those who traveled 100 k.m. or more were advised to stay overnight.

Table 1: Concomitant chronic diseases

Chronic Diseases	Number of Patients (%)
Cardiovascular disease	27 (18)
Pulmonary disease	12 (8)
Urological disease	12 (8)
Diabetes Mulletts	9 (6)

General anesthesia was used in six patients due to failure of local anesthesia. A consultant anesthetist monitored patients with chronic illnesses intraoperatively, while local anesthesia was administered by the surgeon using the standard technique of inguinal nerve block with lignocaine (Xylocaine) 1% (10 ml) and bupivacaine HCL (Marcaine HCL) 0.25% (10 ml). The volume was increased to 40-60 ml using normal saline. Adrenaline was not used. The local anesthetic was supplemented by intravenous midazolam, selectively.

The external oblique muscle was opened in the direction of its fibers, through a 4-5 cm transverse groin incision at the lower crease of the abdomen. The cord was opened and the indirect sac was pushed back into the abdominal cavity intact without ligation. A plug, made from polypropylene monofilament (Marlex) mesh, was then inserted in the deep ring and secured in place with prolene 2/0 interrupted stitches. In direct hernia, the base of the defect was circumcised by electric cautery. The plug was then inserted and secured in place with 6-8 interrupted prolene

stitches. An onlay patch, about 5 cm x 8 cm, was placed to reinforce the posterior inguinal wall. The cord was passed through it and the lateral two-split end was approximated with one prolene stitch. Closer was then performed in layers using polysorb.

In recurrent hernia, the defect was freed and the sac reduced through the margins of the defect and the plug was inserted and secured with interrupted prolene stitches and no onlay patch was used.

During the first eight hours, postoperative pain was evaluated using the Wong/Baker face rating scale (Fig. 1)^[6].

Patients were discharged on the same day once they passed urine. All patients were given full instructions for possible postoperative problems and an appointment was made for the outpatient clinic after a week. Patients were scheduled for a follow-up clinical evaluation by a specialist in the hernia clinic over a period of three years, three-monthly for the first year and six-monthly for the second and third years.

RESULTS

Concomitant medical problems were documented in 60 (40%) patients (Table 1). The mean hospital stay was 0.6 day (range 8 hours-7 days). Of these patients, 138 were discharged after eight hours from the day surgery unit, while 12 patients remained between 1-7 days. Three patients stayed for one day because of a social problem, and a further nine were kept in the hospital pre-operative and postoperative for 4-7 days each, on account of anticoagulants.

The mean operative time starting from the time of local anesthesia infiltration was 36 minutes (range 30-50 minutes).

The postoperative analgesic consumption was as follows: 117 (78%) patients received paracetamol 1 gm/three times daily for two to three days, 30 (20%) patients received one injection of pethidine before they were discharged from the day surgery unit, and 24 (16%) did not received any analgesic at all. Postoperative pain scores are shown in (Table 2).

Table 2:

The pain scores over the first eight hours postoperatively

Faces Pain Scale	First Hour	Second Hour	Third Hour	Fourth Hour	Fifth Hour	Sixth Hour	Seventh Hour	Eighth Hour
0	144 (96%)	144 (96%)	141 (94%)	141 (94%)	138 (92%)	132 (88%)	114 (76%)	105 (70%)
1	6 (4%)	3 (2%)	6 (4%)	6 (4%)	6 (4%)	9 (6%)	18 (12%)	24 (16%)
2	-	3 (2%)	3 (2%)	3 (2%)	6 (4%)	6 (4%)	6 (4%)	6 (4%)
3	-	-	-	-	-	3 (2%)	6 (4%)	6 (4%)
4	-	-	-	-	-	-	6 (2%)	6 (4%)
5	-	-	-	-	-	-	6 (2%)	3 (2%)

Local complications were as follows: 18 (12%) patients had bruising which resolved spontaneously, 18 (12%) patients had a seroma, diagnosed clinically which disappeared without surgical interference and three (2%) had neuralgia which improved with reassurance. During the follow up period, neither infection nor recurrence was recorded. Percentage of follow up was 98% in the first year, 94% in the second year, and 90% in the third year.

DISCUSSION

Groin hernia is a common pathologic entity, and its incidence is high in adults over the age of 65 years^[7]. Since life expectancy has substantially increased (at present it is slightly less than 80 years in developed countries)^[8], the number of surgical procedures performed for hernia will certainly rise in the future. Furthermore, elderly patients who require hernia repair often have concomitant diseases that increase the surgical risk^[9]. Cardiovascular, pulmonary, and urinary complications can occur after hernioplasty, especially if the procedure was performed under general or spinal anesthesia^[10-12]. On the other hand, patients who are operated upon under local anesthesia do not generally have serious intra- or postoperative complications^[11,13]. Local anesthesia also gives the surgeon the opportunity to accurately assess the tension and adequacy of the repair during the operation and perform hernia repair as a day case surgery. This is also considered to be very favorable in terms of costs^[14]. As a side effect of local anesthesia, hypotension and/or bradycardia have occasionally been reported during surgery or in the first few hours following the operation^[15]. These symptoms can occur not

only following the use of local anesthesia^[17] but also with other anesthetic techniques^[18]. Such a complication occurred only once in our series. The mesh plug technique is simple to perform, there is less dissection, minimal disturbance of the anatomy, and a low recurrence rate^[19]. As reported by others, our mean operative time was 36 minutes^[20]. We have had no recurrence and the incidence of minor complications has been low in our series over the three-year follow up period. Furthermore, the postoperative pain has proved to be less and additionally, the postoperative analgesic requirement has been less.

Consequently, we enthusiastically advocate the mesh plug method of hernia repair for this common condition. It is safe, simple, effective and can be carried out on a day case basis under local anesthesia. In accordance with this policy at our hospital, nearly all patients suffering from a groin hernia are now offered the mesh plug operation under local anesthesia. With its good results and low complications rate, it has become well accepted in this community.

CONCLUSION

Local anesthesia and the Mesh Plug technique in inguinal hernia repair is a safe, simple and effective procedure in elderly patients. Age and concomitant diseases should not be a contraindication to elective hernia repair.

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