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Original research article

Bilateral inguinal hernia repair under local anaesthesia: A prospective study

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Abstract

Introduction groin hernia repair is a common surgical procedure performed. Open hernia surgery is well accepted standard approach to inguinal hernia. Unilateral groin hernia repair is commonly performed under local anesthesia [1]. Simultaneous bilateral open groin hernia under local anesthesia is not well documented Many patients with bilateral groin hernia are unfit for general anesthesia. Hence simultaneous open groin hernia surgery under local anesthesia is a preferred and safe procedure [1, 2]. We report our experience with concomitant bilateral inguinal hernia surgery under the local anesthesia method. We reviewed prospective data of patients with bilateral inguinal hernias for whom both sides of hernia surgery were performed between 2021-2022. Data collected were analyzed for patient demographics, visual analog pains score, surgery time volume of local anesthetic- solution, patient compliance, and complication. Bilateral Lichtenstein's mesh hernioplasty was performed in all inguinal patients' hernia using a local anesthetic solution. The mixture comprised 0.5% bupivacaine 30 ml + adrenaline and 2% lignocaine with an adrenaline 20 ml + 0.9% normal saline 50 ml & 6 ml of 8.6% Sodium bicarbonate.

Result: The study included 24 patients 92% of patients were male and only two male-patients' ages ranged between 35-81 years and BMI of 18-30 (mean 24). The average surgery time was 65 min (35-120min) median operating time was 60 min. The mean pain of 24 on the VAS o-100 scale. Patient satisfaction score (0-100scale) ranging from 50-100 (median 90).

Conclusion: The study showed that simultaneous bilateral open mesh hernioplasty under local anesthesia can be performed safely with good patient satisfaction. Bilat open inguinal hernia repair is a good option in patients who otherwise are not fit for general anesthesia & Simultaneous bilateral inguinal hernia surgery can be performed safely.

Keywords: Bilateral inguinal hernia, local anaesthesia

Introduction

Hernia surgery is a common surgical operation in general surgical units [3]. Bilat inguinal hernias are common in children. However bilateral inguinal hernias are seen in 6% of inguinal hernias in adult [4] surgical management of inguinal hernias are either open or laparoscopic. Prosthetic tension-free repair of hernia by open method and laparoscopic hernia repair are preferred methods of repair Laparoscopic bilateral inguinal hernia repair is commonly performed [5]. But some patients are unfit due to comorbidities. Similarly, laparoscopy repair decision is also sometimes influenced by patients' preference availability of surgical expertise and available resources. In such patients, bilateral inguinal hernia repair under local anesthesia is a good option [6]. Open mesh repair is the gold standard [7, 8] simultaneous bilateral inguinal hernia repair under local anesthesia is a convenient and safe procedure in selected patients [9]. However little literature is available on simultaneous bilateral inguinal hernia repair under local anesthesia.

Methods

The study was conducted in the General surgery department of Datta Meghe Medical College, Nagpur. Prospectively collected data were analyzed retrospectively. The study was conducted between November 2021 to August 2022. Patients underwent simultaneous bilateral inguinal hernia repair under anesthesia Data was analyzed for demographic, pain score, surgery time, the quantity of local anesthetic patient satisfaction score, complications, and recurrence.

Patients who planned to undergo hernia surgery under local anesthesia were selected carefully. The operating surgeon discussed with patients and Pros & cons of simultaneous bilateral inguinal hernia

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repair discussed consent & preoperative preparation done as per hospital &departmental policy patients were admitted in the morning hours of the day of surgery. After part preparation, local anesthesia was prepared. Local anesthesia mixture constituted of 30ml 0.5% bupivacaine with adrenaline 20 ml+2% lignocaine with adrenaline 50ml and 0.95% saline + 6ml of 8.4 sodium bicarbonate, This mixture is safe for 70kg patients & founds effective in pain suppression 5-10ml of mixture given sub-dermally along the incision line followed by 10 ml infiltrated in the subcutaneous plane. 20ml mixture infiltrated two finger breadth medial to the anterior sup iliac spine deep to the external oblique aponeurosis [10, 11].
The surgical procedure employed was standard open tension-free prolene mesh hernioplasty (Lichtenstein's repair). On completion of the procedure, a record is made of the patient's demographic, surgical time taken and amount of local anesthesia required before discharge pain score (0-100 scale) & patient satisfaction score were filled in by the patients.

Age and Gender Distribution

Age (yrs)	Male n= 22	Female n= 2
30-40	2	
41-50	4	1
51-60	10	1
61-70	3	
71-80	1	
81-90	2	

BMI

Max value	30
Minimum value	18
Mean	24

Operating Time (minutes)

Maximum	120
Minimum	38
Mean	65

Result
The study included 24 patients who underwent simultaneous repair of bilateral inguinal hernia Study group comprises 22 males & 2 females aged ranging from 30-87 years. The BMI varied from 18-20 (mean 24) the operating time was 38 -120 min average of 65 min (median 60 min) Mean pain score was 4-50 on a 0-100 scale (Mean 24) Patients satisfaction score ranged from 50-100 (mean 86) 3 patients have a small collection at the operated site which did not require any surgical intervention. No patients had a recurrence and chronic groin pain. No evidence of chronic groin pain due to bilateral inguinal incision was observed in this study. Similarly, the study demonstrated reasonable operating time avoiding long periods of operating under local analgesia. Excellent patient satisfaction score & pain score is indicative of good patient compliance. Furthermore, additional advantages of general anesthesia consequences (post-operative nausea & vomiting GA recovery, etc.). Simultaneous bilateral inguinal hernia surgery under local anesthesia is a good option in selected patients. It is a safe & viable option in otherwise high-risk patients unfit for general anesthesia. There was no incidence of increased morbidity or mortality in this study.

Discussion
Laparoscopic inguinal hernia surgery under general anesthesia offers the advantage of small incisions, and quick post-operative recovery above all bilateral inguinal hernia can be operated simultaneously [2, 12, 13] In certain groups patients open inguinal hernia surgery under local anesthesia is the only option [7]. Hernia surgery under local analgesia has been reported as an accepted & safe procedure [14]. Inguinal hernia repair in high-risk patients who are otherwise unfit for general anesthesia can be safely performed with good results, it offers the advantage of one surgical session & one hospitalization thus reducing the overall cost and logistic benefit [6]. Bilateral simultaneous inguinal hernia repair under local anesthesia certainly offers an advantage over sequential hernia repair in terms of two surgical procedures with separate recovery periods & convalescence [15]. Quantity and concentration of local anesthetic in used bilateral hernia repair provide safety and give adequate analgesia required for effective hernia repair [16, 17, 18, 19, 20]. No evidence of chronic groin pain due to bilateral inguinal incision was observed in this study. Similarly, the study demonstrated reasonable operating time avoiding long periods of operating under local analgesia. Excellent patient satisfaction score & pain score is indicative of good patient compliance.

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Furthermore, additional advantages of general anesthesia consequences (post-operative nausea & vomiting GA recovery, etc.).

The study concludes that simultaneous bilateral inguinal hernia surgery under local anesthesia is a good option in selected patients. It is a safe & viable option in otherwise high-risk patients unfit for general anesthesia. There was no incidence of increased morbidity or mortality in this.

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