OUTPATIENT SIMULTANEOUS REPAIR OF VENTRAL AND GROIN HERNIAS IN LOCAL ANESTHESIA: CASE REPORT*

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SUMMARY – Umbilical and epigastric hernias are occasionally seen in patients with groin hernias, however, there is almost no published evidence about their simultaneous repair. In a 3-year period, 10 patients were subjected to simultaneous repair of groin hernias (7 unilateral, 2 bilateral inguinal and 1 femoral) and ventral hernias (7 primary, 2 recurrent umbilical and 1 epigastric) with local infiltration anesthesia and intravenous sedation. The mean total bupivacaine dose was 18 (10-30) mL and mean total lidocaine dose 21 (14-30) mL. The mean time to resuming normal daily activity was 5.5 days, whereas the time to car driving was 3-7 days. The oral analgesic (naproxen sodium) requirement was 6-10 tablets for 3-5 days. Patient acceptance was excellent. Simultaneous repair of groin and ventral hernias with local anesthesia in outpatient setting is feasible and associated with a low complication rate and maximum patient comfort.

Key words: *Hernia, umbilical; Hernia, epigastric; Hernia, inguinal; Local anesthesia, lidocaine; Local anesthesia, bupivacaine*

Introduction

Umbilical and epigastric hernias are primary hernias of the abdominal wall. They were classified as primary midline ventral hernias by the European Hernia Society in 2009[1]. These hernias are sometimes seen in patients with groin hernias; however, there is almost no published evidence about simultaneous repair of ventral and inguinal hernias. We present the results of outpatient simultaneous repair of ventral and groin hernias in local anesthesia.

Case Series

In a 3-year period, 801 patients underwent prosthetic hernia repair with local anesthesia in outpatient setting at a specialized hernia clinic (702 groin: inguinal or femoral, and 99 ventral: umbilical or epigastric). During the same period, 10 patients were subjected to simultaneous repair of groin hernias (7 unilateral, 2 bilateral inguinal and 1 femoral) and ventral hernias (7 primary, 2 recurrent umbilical and 1 epigastric). There were 9 male patients and 1 female patient, age range 42-78 (mean 55) years. Five patients had systemic diseases (Table 1). No anesthetic agent related complication was observed.

Antibiotic prophylaxis with cefazolin sodium was used in all cases 30 minutes before the skin incision. Surgical procedure with local anesthesia for umbilical hernias was employed with a similar pattern to a technique previously described by Kurzer *et al.*[2]. First, a hemicircumferential periumbilical skin marking was done with a permanent pen. Several milliliters of lidocaine 1% as a short-acting, medium-acting agent (Jetocaine simplex ampules 40 mg/2 mL, Adeka) was first given subdermally and then intradermally. Subcutaneous dissection was continued with the same local anesthetic agent. Then bupivacaine 0.5% as a long-acting agent (Mar-

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Table 1. Results of simultaneous groin and ventral hernia repair in local anesthesia in 10 cases

Sex:	male 9	female 1
Age (yrs):	mean 55	range 42-78
Systemic disease (n):	5	
Local agent volume:		
Bupivacaine		
	mean	18 mL
	range	10-30 mL
Lidocaine		
	mean	21 mL
	range	14-30 mL
Discharge time:		2 hours (mode)
Wound infection (n): 1		
Oral analgesic requirement:		
duration	3-5 days	
total	6-10 tablets	
Return to daily activity: 5 days		

caine 0.5% flacon 20 mL, AstraZeneca) was given under the rectus sheath. The local anesthetic agents were diluted with 1/1 saline, whereas no adrenaline was added. Surgical procedure for groin hernias was performed with the same local anesthetic agents as previously described by Kulacoglu *et al.*[3]. Intravenous sedation was set with midazolam (0.07 mg/kg) and fentanyl (0.70 g/kg).

The mean total bupivacaine dose was 18 mL (90 mg) and mean total lidocaine dose 21 mL (210 mg). Two male patients (aged 67 and 42) who underwent bilateral inguinal hernias together with an umbilical hernia repair were excluded from the calculation; however, even the doses for these extraordinary patients were within the limit of confidence with no adverse effect. Nine patients were discharged at 2 h, while only one patient needed to stay overnight for social reasons. One patient developed surgical site infection at umbilical wound that quickly responded to proper treatment. The mean time to resuming normal daily activity was 5.5 days, whereas the time to car driving was 3-7 days. The oral analgesic (naproxen sodium) requirement was 6-10 tablets for 3-5 days. Patient acceptance was excellent. All patients were followed for 2-4 years with no recurrence at midline, whereas the patient having undergone triple repair in single act developed inguinal recurrence.

Discussion

Umbilical hernia is a rather common surgical problem. However, there seems to be some discrepancy between its importance and the attention it has received in the literature to date. A recent multicenter survey from the UK reported that the share of umbilical and paraumbilical hernia repairs among all repairs for abdominal wall hernias increased to 14% from 5% in the last 25 years[4]. This figure was 6.6% for epigastric hernias in the same study.

Prosthetic repairs have gained great popularity for hernia repairs in the last several decades. A similar tendency has been observed in umbilical and epigastric hernia repairs[5,6]. A recent meta-analysis has revealed that the use of mesh in umbilical hernia repair results in decreased recurrence and wound complication rates compared to tissue repairs[7].

Local anesthesia has been recognized as a good alternative for groin hernia repairs. It can also be used safely in umbilical and epigastric hernia repairs. However, the number of detailed reports on the repair of these hernias in local anesthesia is limited[2,8]. The data usually lack information about the technique and doses of local anesthesia application.

The main concerns about simultaneous repair of groin and ventral hernias are long operation time, high dose of local anesthetics, late ambulation, need for hospitalization, late return to daily activities and increased wound infection rate. In fact, operation time is inevitably longer in simultaneous repairs than staged repairs, but single operation is a real advantage. This small series also revealed promising results regarding early ambulation and early return to normal daily life.

The infection rate after prosthetic repair of umbilical hernias has been reported as 1%-11%[2,4,8-10]. In the present series, there was one wound infection out of 10 patients, which did not reflect an increased infection risk. Similarly, there is no significant risk of hernia recurrence after 2-4 years.

The concern about the doses of local anesthetics does not seem to be a problem for simultaneous repair of ventral and groin hernias. In a previous study on inguinal hernia repair in local anesthesia, we showed that the doses of local anesthetic agents were kept within safe limits with no drug-related complication. The mean doses of lidocaine and bupivacaine were 101 mg and 48

mg, respectively[3]. There is a textbook reference that lidocaine, without epinephrine, can be administered up to a total dose of 200-300 mg with no harm[11,12]. Also, bupivacaine is generally used in a total dose of 150-200 mg or 2 mg/kg, while 4 mg/kg is the current recommended dose[13]. In our small series, the doses of both agents were clearly within the safety limits for simultaneous repair of umbilical and inguinal hernias.

Another hesitation for the surgeons and the patients might be recurrence after simultaneous repair. Indeed, the operation time is longer and the surgeon may lose attention and perform imperfect repairs. We experienced one recurrence at a previously repaired and recurred inguinal hernia, however, this recurrence was probably due to a small mesh sized 6x11 cm.

In conclusion, simultaneous repair of groin and ventral hernias in local anesthesia in outpatient setting is feasible with low complication rate and maximum patient comfort.

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Sažetak

IZVANBOLNIČKA ISTODOBNA OPERACIJA VENTRALNE I PREPONSKE HERNIJE U LOKALNOJ ANESTEZIJI: PRIKAZ SLUČAJA

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Umbilikalne i epigastrične hernije ponekad se nalaze u bolesnika s preponskom hernijom, međutim, gotovo da nema objavljenih podataka o njihovom istodobnom operacijskom liječenju. Tijekom 3-godišnjeg razdoblja istodobna operacija preponskih hernija (7 jednostranih, 2 obostrane ingvinalne i 1 femoralna) i ventralnih hernija (7 primarnih i 2 opetovane umbilikalne i 1 epigastrična) u lokalnoj infiltracijskoj anesteziji i intravenskoj sedaciji izvedena je u 10 bolesnika. Srednja ukupna doza bupivakaina bila je 10 (10-30) mL, a srednja ukupna doza lidokaina 21 (14-30) mL. Srednje vrijeme do povratka normalnih svakodnevnih aktivnosti bilo je 5,5 dana, a za upravljanje motornih vozilima 3-7 dana. Potreba za oralnim analgeticima (naproksen natrij) bila je 6-10 tableta kroz 3-5 dana. Bolesnici su izvrsno prihvatili ove zahvate. Istodobno rješavanje preponske i ventralne hernije uz lokalnu anesteziju u izvanbolničkim uvjetima izvedivo je, ima nisku stopu komplikacija i najvišu razinu udobnosti za bolesnika.

Ključne riječi: *Hernija, umbilikalna; Hernija, epigastrična; Hernija, ingvinalna; Lokalna anestezija, lidokain; Lokalna anestezija, bupivakain*