

Repair of inguinal hernia under local anaesthesia in high risk patient

Dr. Naseer K. Jawad Al Maleky

CABS, FIBMS

Wassit Medical College\Chief of Surgical Department

الخلاصة

ان عمليات الفتق المغنبي من اكثر عمليات الجراحه العامه ومن الممكن ان تجرى تحت التخدير العام او الموضعي والمرضى ذوي الحالات الخطره صنف ٣ و ٤ وفق الجمعيه الامريكيه للتخدير بصوره عامه غير مؤهلين للعمليات تحت التخدير العام، ولكن الصورة تختلف اذا اجريت العمليه تحت التخدير الموضعي لذى قمنا بدراسه حول استخدام التخدير الموضعي للمرضى ذوي الحالات الخطره الهدف : دراسه مدى فعاليه استخدام التخدير الموضعي في الحالات الخطره للمصابين بالفتوقات المغنبيه وإمكانية اجراها كعمليه جراحيه يوميه. المرضى وطرق العمل : منذ شهر كانون الثاني ٢٠٠٧ الى كانون الثاني ٢٠٠٩، ٧٥ مريض مصابون بفتوقات مغنبيه ومصنفين كحالات خطره من حيث التخدير صنف ٣ و ٤ وتمت العمليات تحت التخدير الموضعي واستخدام الشبكه في رتق الفتوقات النتائج : ٧٥ مريض معدل اعمارهم ٦٨ سنه (٢٩ فتق مغنبي نوع مباشر و ٤٣ غير مباشر و ٣ النوعين معا) ومعدل اوزانهم ٥٣ كغم و متوسط وقت العمليه ٥٠ دقيقه ٣ من الحالات من نوع الفتوقات الكبيره غير الراجعه احتجنا الى استخدام ٥٠ ملغم من الديازيبام بالوريد وحاله واحده احتجنا الى البثدين ٥٠ ملغم . حاله واحده اصيبت بالتهاب سطحي في جرح العمليه و ٣ حالات اصبن بتجمع سوائل مصليه تحت الجلد و ٣ حالات اصيبوا بتجمع دموي في كيس الصفن و ٩ حالات نزلت تحت الجلد لا توجد حالات من انحباس الادرار او رجوع الفتق او الوفيات و الوقت الانتظار للعمليه ١-٢ اسبوع مقارنة للعمليات تحت التخدير العام من ٢ الى ٣ شهر. وجدنا ان هذه الطريقه امينه وذات مشاكل مقبوله حتى في حالة المرضى ذوي الاوزان الثقيله ويمكن اجراءها كجراحه يوميه ويتم اخراج المريض في نفس اليوم الذي تمت فيه.

Abstract

Inguinal hernia repair is a common operation in general surgery and can be performed under local, regional or general anaesthesia, The American Society of Anaesthesiologists (ASA) 3 and 4 patients are generally considered unsuitable for day case hernia repair, high risk for surgery under general or regional anaesthesia, so we study surgery under local anaesthesia for those high risk group.

Aim: Aim of our study were to look at the high risk patient suitability for day-case repair of inguinal hernia under local anaesthesia(LA).

Patient and method: Between January 2007 and January 2009, 75 patients with unilateral inguinal hernia ASA 3 and 4 underwent prospective study for repair of hernia under local anaesthesia by plug and patch of mesh.

Result: 75 patients with inguinal hernia were operated on under local anaesthesia, median age 68 (range 40 to 102) years, 29 direct type, 43 indirect type ,3 direct and indirect type (pantaloony type) , the median body weight 53kg (ranged 45 to 105 kg). The duration of procedures were 30 to 80 minutes (average 50 minutes) .

3 of cases with big irreducible hernia perioperatively required IV diazepam 5 mg and one of them requires IV pethidine 50mg, 1 patient developed superficial wound infection, 3 patients developed subcutaneous seroma, 9 patients had ecchymosis at site of infiltration and operation, 3 patients developed scrotal haematoma, no one develop urinary retention, and no recurrence during follow up period and no mortality. The median period of follow up 6 months (range 4- 15 months), Waiting time for our study 1 to 2 week compared to patient required GA 2-3 months.

Conclusions: Repair of inguinal hernia under LA in high risk patient seems to be safe and feasible with an acceptable morbidity. Obesity in itself is not an absolute contra-indication for LA and the waiting times are acceptable and can be done as day case surgery.

Key words: Inguinal hernia, general anaesthesia, local anaesthesia, ASA3,ASA4

Introduction:

Inguinal hernia are a common problem, about 75 % of all types of abdominal hernias occur in inguinal region. (1) The prevalence of inguinal hernias increases with age and strangulation and need for hospitalization also increase with ageing. Natural history of inguinal hernia is that progressive enlargement and weakening with potential for incarceration and strangulation. (1,2)

Inguinal hernia repair is one of most commonly performed operations worldwide.(3,4) However, there is no common consensus among surgeons regarding the best choice of anaesthesia. Several retrospective and randomized controlled trials have shown that local anaesthesia provides the best clinical and economic benefits to patients. In spite of this, the use of local anaesthesia for inguinal hernia repair is not a common practice. (4,5,6,7)

Elderly patient usually complain of hypertension, ischemic heart disease or diabetes make them high risk for general anaesthesia (GA) or spinal(regional) anaesthesia so we operated on our high risk patient under local anaesthesia(LA) to avoid complication of other method of anaesthesia and avoid delay for waiting time for elective surgery under GA and irreducibility and strangulation is possible at this period of waiting.

Patient and method:

The study covered a period from Jan 2007 to Jan 2009 including 75 patients high risk underwent surgical repair of inguinal hernia under LA in Al Karama Teaching Hospital. Co morbidity, current medication, and level of function were recorded in a standardized file, allowing ASA classification of the patients (Table 1). No preoperative tests were ordered, except for selected patients with diabetes or continuing anticoagulant therapy. Hernia pathology, the surgical procedure, and the use of LAs or sedatives were recorded in the file.

elective inguinal hernia repair in step-wise local infiltration anesthesia (xylocain 75-250 mg) with ilioinguinal block (xylocain 10-50 mg) was provided by the surgeon.

The patients was monitored by pulse oxymetry and verbal contact with the staff.

Equipment for resuscitation and relevant medicine were available in the room and anaesthesia equipment was immediately accessible, no anaesthesia personnel were scheduled to be involved in the care of the patient but were readily available if necessary.

The surgical techniques employed were mesh plug repair with onlay mesh(patch). We dissect the sac and reduce it in direct type or reduce content and excise it in indirect type, the plug was placed in the internal ring or the defect of direct hernia and fixed to

the margins and onlay patch over it and fixed to inguinal ligament and conjoint tendon and lateral to deep inguinal ring using a No.0/2 nylon stitches, 4 cases required suction drain removed 24-48 hr postoperatively.

Data regarding chronic groin pain were obtained by a postoperative questionnaire after 2-4 weeks of follow up. The postoperative pain was graded into no pain, mild, moderate, severe. The character of the pain, associated numbness, as well as restriction of activities was ascertained. Degree of satisfaction from this type of anaesthesia was assessed according to the scale dissatisfied, satisfied and highly satisfied

Result:

75 patients with ASA 3 and ASA 4 according to predominantly affected organ system (table 1) with variable data according to (table 2), median age 68 years old (range 40-102), 29 with direct type, 43 with indirect type, 3 with direct and indirect type (pantaloon type), the median body weight 53 kg (ranged 45 to 105 kg) The duration of procedures were 30 to 80 minutes (average 50 minutes) .

4 of cases with big irreducible hernia during operation developed discomfort required IV diazepam 5 mg and one of them requires IV pethedine 50mg.

Table 1. American Society of Anesthesiologists Classification of 75 ASA III –IV Patients with Indication of the Predominantly Affected Organ System

Organ system	ASA III	ASA IV
Cardiovascular	30	2
Respiratory	26	1
Gastrointestinal, including liver	4	0
Renal disease	2	1
Diabetes	8	0
Other (including psychiatric)	1	0
Total	71	4

Table 2: Demographics and characteristics of patients

Patient Data	Range (Median)
Age (years)	40-102 (68)
Male: female	70:5
Body weight(kg)	45 -105(53)
Body mass index (Kg/m ²)	21-32(24)
Operative time (min)	30-80(50)
Dose of local aneesthetics (mg)	85-300(150)
Dose of sedative intake (mg)	5
Dose of analgesic intake (mg)	50
Follow up period (months)	4-15(6)

Non of cases required conversion to GA, Complication recorded after operation (table 3), 1 case developed superficial wound infection,3 cases developed subcutaneous seroma,9 cases developed ecchymosis at site of infiltration and operation, 3 cases developed scrotal haematoma, no one developed urinary retention, and no recurrence during follow up period and no mortality. The median period of follow up

was 6 months (4-15 months) ,Waiting time for our study 1 to 2 week compared to patient required GA 2-3 months.

Table 3 : Postoperative complications

Postoperative complications	number of patient
Wound infection	1
ecchymosis	9
scrotal haematoma	3
Seroma	3
Recurrence	0
Urine retention	0

Result of postoperative questionnaire (Table 4). The incidence of chronic groin pain found in 18 patients, 20 patients complained of discomfort in the groin in various forms including aching 14, shooting pain 1.Satisfaction scores revealed a higher number of highly satisfied and satisfied patients compared with the number of patients dissatisfied, 93 % would undergo surgery under LA again if they needed surgery on the opposite side, 60 patients(80%) discharged within 6 hours of operation and 15 (20%) patients discharged within 48 hours

Table 4ble 6 Postoperative questionnaire survey results

	Number of patients.
Chronic groin pain	18
Mild	12
Moderate	5
Severe	1
Discomfort	20
Aching	14
Numbness	3
Shooting pain	1
Burning	2
Satisfaction scores	
Dissatisfied	2
Satisfied	28
Highly satisfied	45

Table

Discussion

The incidence of inguinal herniation is high in the elderly aged over 65 years. (8) They have complex medical problems increasing the risk of surgery and make them unsuitable for day-case repair. (9) Patients with co-existing illness and poor ASA grades 3 and 4 are often excluded in randomized studies when comparing day-case rates and different anaesthetic techniques,(10,11) and minimal data are available regarding their suitability for day-case repair. Our experience has suggested that, by using local anaesthesia, ASA grade 3 and 4 patients can undergo day-case hernia repair with minimal complications and re-admission rates as 80 % of our cases were discharged home at the same day and this go with the result of Sanjay P. et al The day-case rates

were significantly higher when patients underwent surgery under LA compared to GA (82.6% versus 42.6%). (3)

Day case local anaesthetic repair of inguinal hernia in high risk patient appears to be safe and feasible with an acceptable morbidity. Delay in initiating operation may increase the possibility of strangulation which necessitates surgery under adverse conditions, and an increased morbidity and even death.(12) It is well documented that general and spinal anaesthesia are associated with higher rates of serious post-operative complications when compared with LA in patients undergoing inguinal and femoral hernia repair.(13) In addition, this technique favors' early mobilization of patients and this could contribute to the absence of major complications like deep venous thrombosis.

Surgery on the awake patient must be carried out gently and the surgeon must be willing to adapt both technique and pace to the needs of the patient. Incisional pain is usually blocked. However, some pressure sensation and traction on tissues, particularly the peritoneum, can be uncomfortable for the patient. The patient should be warned about these possibilities and be told that the operation may be slightly uncomfortable at times but should not be painful. Obviously careful patient selection, proper informed consent, and preoperative patient education are very important .Some sedation during the operation may be required for anxious patients which loses some of the benefits of avoiding other anesthetic techniques in higher risk patients. Patients who are excessively nervous may not be suitable for surgery with this technique or required sedation . Almost always, these patients can be identified during pre-operative interview, but we always consent our patients for regional and general techniques as backup anesthetic methods just in case.

Our study used local anaesthetic alone in 71 patients and additional sedation and/or opiate analgesic (pethedin) was needed in only 4 patients. This is also can be a useful alternative in patients who would prefer to have a general anaesthetic, but are not fit to undergo GA also can be used for cases with difficult operation e.g . irreducible hernia. The waiting times for this operation under LA are acceptable and this is of great value in the current climate of bed shortages special if done as day case surgery. The waiting times for operation under GA in most hospitals are the same and hence referral elsewhere to expedite surgery is not a realistic option. Our study illustrates that obesity in itself is not an absolute contra-indication for LA repair 8 out of 75 patients had a body mass index of more than 30. The advantages of day case surgery for groin hernia have been established at least two decades ago,(14) but these cases have all been carried out under general anaesthesia. There are a lot of recent reports for mesh repair of inguinal hernia under local anaesthesia.(15,16) The concept of dedicated day units is now here to stay and local anaesthetic repair of inguinal hernia in adults can easily be accomplished. Our result similar to that results from specialist centres have shown a very low incidence of chronic groin pain following a local anaesthetic inguinal hernia repair.(16,17).also high patient satisfaction.

In summary, we recommend this technique as the first line of treatment in high risk adults with inguinal hernia. Obviously the patient will have to be counseled fully about the operation and anticipated course of recovery.

Conclusions: Repair of inguinal hernia under LA in high risk patient seems to be safe and feasible with an acceptable morbidity. Obesity in itself is not an absolute contra-indication for LA and the waiting times are acceptable and can be done as day case surgery.

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