

Inguinal Herniorrhaphy under local infiltration Anaesthesia

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Inguinal hernia is one of the commonest surgical problems. This study was carried out in Surgical Unit-III Allied Hospital Faisalabad to highlight the effectiveness of local infiltration anaesthesia in hernia repair. In this prospective study special consideration was given to reduce the expenditure on operative management of inguinal hernia and minimize hospital stay of patients. A total number of sixty patients have been included in this study, divided in 3 equal groups, operated under general, spinal and local infiltration anaesthesia. Comparison has been made in these three groups regarding the cost, hospital stay, and postoperative complications. Inguinal Herniorrhaphy under local infiltration anaesthesia has been found to be an effective treatment and reduces the workload of hospital. It is associated with minimal postoperative morbidity.

Key words: Inguinal herniorrhaphy, herniorrhaphy, under local anaesthesia

Inguinal hernia is a very common surgical problem affecting all age groups, especially in the males. Hernias do not resolve spontaneously or improve with time. These should be surgically repaired following diagnosis by physical examination. Repair can be planned electively unless incarceration or strangulation is present.

The surgical management of the inguinal hernia has undergone extensive re-evaluation with renewed emphasis during the past five years. Alterations in health care economics have also contributed to the renewed scrutiny with which the surgical treatment of hernia is viewed.

Different types of anaesthesia have been used for open hernia repair. This study was carried out to compare the results of the inguinal hernia repair under local, spinal and general anaesthesia with special emphasis on the cost analysis and postoperative complications. The safety and efficacy of local infiltration anaesthesia is compared with other two types of anaesthesia.

Material and methods

This prospective study comprises of three groups of patients, each group consisting of twenty patients making a total of sixty patients. On each operative list they were divided into three groups according to their enrolment numbers.

1. First group was operated under local anaesthesia.
2. Second group was operated under spinal anaesthesia.
3. Third group was operated under general anaesthesia.

Darning repair was done in all cases using Prolene No.1. The only investigations for patient under-going surgery under local anaesthesia were haemoglobin level and urine sugar, and in cases of patients above 40 years of age ECG and X-ray chest PA view. Injection xylocaine with adrenaline was used for those selected for local infiltration anaesthesia except in patients with hypertension, history of Ischaemic heart diseases, in which xylocaine without adrenaline was used. Two doses of injectable first generation cephalosporin were used for surgical prophylaxis. first dose at the time of operation and 2nd dose 6 hours after operation.

Forty milligrams of Proxicam intramuscularly was used 2 hours postoperatively and then according to the individual need of the patient. Examination for the wound complications was done on 1st, 3rd, 5th and 10th postoperative day.

Technique of Local Anaesthesia Infiltration Dose.

The maximum safe dose of lignocaine for adults is 3mg/kg without adrenaline and 7mg/kg with adrenaline.¹¹

Technique.

1. 2% xylocaine was diluted to 0.5% xylocaine by using distilled water.
2. 30mls of solution was injected in fan shaped manner deep to external oblique aponeurosis, two centimetres medial to anterior superior iliac spine.
3. 20mls of solution was injected in fan shaped manner directly over pubic tubercle.
4. 20mls of solution was injected in the line of inguinal ligament over deep inguinal ring.
5. 10mls of solution was injected subcutaneously in the line of skin incision.
6. During dissection of hernial sac 10mls of solution was injected around neck of sac to anaesthetize parietal peritoneum.
7. Injection diazepam 10mg intravenously was used as potentiation if needed.

With the help of above mentioned technique the iliohypogastric, ilioinguinal and genitofemoral nerves were blocked along with cutaneous branches from opposite side to achieve effective local anaesthesia¹².

Selection Criteria

All the male patients presenting with inguinal hernia were included in this study. Lower age limit was 12 years.

Exclusion criteria for Local Infiltration

Children under 12 years of age, patients with recurrent inguinal hernia and with history of Strangulated / obstructed inguinal hernia were not included in the study. Also the patients lost in the follow-up were not included.

Results

1. Age incidence

Most of the patients in this study were between 15-40 years of age. The youngest being 12 years of age and the oldest being 75 years of age.

2. Site of hernia

Site	n=	%age
Right	44	73.33
Left	14	23.33
Bilateral	02	2.33
Total	60	99.99

3. Mode of presentation

Mode of presentation	n=	%age
Reducible	50	83.3
Irreducible	10	16.6
Total	60	99.97

5. Potentiation

In this study during the operative procedure there was no case in which we had to convert anaesthesia from local to spinal or general. Potentiation with diazepam 10mg i/v was required in only two patients out of 20 (10%).

6. Ineffectiveness of spinal

Two (10%) out of 20 patients operated under spinal anaesthesia were given general anaesthesia due to ineffective spinal anaesthesia.

7. Postoperative complications

Complication	Anaesthesia	n=	%age	
I. Scrotal haematoma	Spinal	03	15	
	General	01	05	
	Local	01	05	
II. Acute urinary Retention	Spinal	03	15	
	General	-	-	
	Local	01	05	
III. Wound Infection	Spinal	01	05	
	General	01	05	
	Local	01	05	
IV. Miscellaneous				
	Meningism	Spinal	01	05
	Spinal headache	Spinal	01	05
No complication	Spinal	11	55	
	General	17	85	
	Local	18	90	

9. Hospital Stay

Average hospital stay for patients operated under local, general and spinal anaesthesia was 2, 4 and 5 days respectively.

In the group of patients operated under local anaesthesia, 4 (20%) were discharged on the same day. The reasons for not sending all the patients on the same day were:

- Patients coming from far off rural areas.
- Fear in patients mind that he may get complications in the home.

9. Cost Analysis

Average cost of the operation under local anaesthesia was Rs.525/-, spinal anaesthesia Rs.1050/- and for general; anaesthesia was Rs.1600/-.

Discussion

Inguinal hernia is the commonest surgical problem amongst all the external hernias. All age groups are affected, however this study shows peak incidence in the first and third decades of life, which is comparable to other studies carried out in our country¹⁴⁻¹⁵.

Inguinal hernias are many times more common in males, the male to female ratio reported by Manza¹⁴ (1992) Mufti and Khan¹⁵ (1982), Devlin¹⁶ (1986) and Bailey¹⁷ (1995) are 57:1, 37:1, 10:1, and 20:1 respectively

In this study 73.3% patients were having right sided hernia 23.3% were having left sided and 3.3% were having bilateral hernia.

The increased incidence of right sided inguinal hernia is also reported in other studies.

Wound infection was found in 3.3% of the patients which is quite low as compared with other local studies like Ahmed G¹³ (1996) 6.6%. The reasons for low infection rate in our study are judicious use of prophylactic antibiotics and particular attention given to sterilization.

Scrotal haematoma formed in 5 (8.3%) patients. All of them were treated conservatively. None of them required aspiration or drainage. Study by Ahmed G¹³ (1996) showed incidence of scrotal haematoma to be 3.3% respectively.

Incidence of retention of urine requiring catheterization, was 6.6%. Retention was commonly seen in elderly patients operated under spinal anaesthesia. The incidence of retention of urine reported by Rasool et al (1992)¹⁸ is 3%.

Average hospital stay in patients operated under local anaesthesia was two days, which is quite short in our circumstances where most of the patients come from rural areas.

Cost of hernia repair under local anaesthesia was found to be significantly low as compared to general and spinal anaesthesia. On average, the patients spent 1000

rupees less than those who were operated under general anaesthesia and same has been observed in other studies.

In our set up, where majority of the patients belong to poor class this is a very important factor.

Conclusion

Inguinal herniorrhaphy under local anaesthesia is safe, economical with an additional advantage of short hospital stay.

Inguinal Herniorrhaphy under local infiltration Anaesthesia

The minimal hospital stay decreases the expenditure of the patient and reduces the workload of the hospital.

So all the inguinal hernias in adults can be safely and effectively repaired under local infiltration anaesthesia.

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