

Anaesthesia for groin hernia repair—the patient choice

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Abstract

Several anaesthetic options are now available for the repair of groin hernias. The benefits of the local and general anaesthetic techniques are well outlined in the literature. No studies, however, have assessed the patient's preference for different anaesthetic approaches of their suitability of choice in elective hernia repair. A cohort of 284 consecutive patients seen in a dedicated hernia clinic were included in the study. Full medical history and hernia examination was performed by one clinician. Patients having surgery were offered either general or local anaesthesia for their repair. They were given a full explanation of the steps of both anaesthetic techniques. A clinic information form was provided to assist in the decision-making process. Their favourable options and the reasons behind them were recorded in study sheet, for later analysis. The data were analysed in relation to age, sex, occupation, smoking, medical condition, previous anaesthesia, and previous hernia surgery. Most patients preferred local anaesthesia. Patient's choice was prompt and appropriate. A detailed account of the reasons that influenced the choice of different groups of patients and how that can assist in planning hernia services in district hospitals are discussed. © 1999 Elsevier Science B.V. All rights reserved.

Keywords: Anesthesia; Groin hernia repair; Patient choice

1. Introduction

Several anaesthetic options are now available for the repair of groin hernias. The benefits of local anaesthesia have been well outlined in the literature [1,2] and include early mobility and reduction in hospital stay, post operative discomfort and peri operative morbidity. General anaesthesia has become safer in recent years particularly in the elderly. No studies have assessed the preference of patients for different anaesthetic approaches or their suitability of choice in elective hernia repair.

2. Aims

The aims of this study were to determine patient preference for anaesthetic technique and the factors which affect this choice in different patient groups.

3. Patients and methods

A cohort of 284 consecutive patients seen in a dedicated hernia clinic over a 14 month period (November 1995–January 1997) was included in the study. A full medical history and clinical examination was performed by one clinician. The data obtained was prospectively recorded on study sheets for later analysis (Table 1). Patients having surgery were offered either general or local anaesthesia for their repair and were given a full explanation of both anaesthetic techniques. A clinic information form was provided to assist in the decision-making process (Table 2). No attempt was made to influence the choice of anaesthesia and the favoured option by the patient including the reason(s) for choice was recorded. In those cases where the preferred patient option was deemed by the surgeon to be either technically inappropriate or ill-advised, the technique was left to the surgeon on discussion with the patient.

4. Statistics

Percentage differences between groups were analysed by the χ^2 test with Yates correction. In groups with

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relatively small numbers, Fisher's exact test has been used. *P*-values were considered significant if less than 0.05.

5. Results

In total 315 patients presented to the clinic over the study period. Thirty-one cases were excluded from analysis for a variety of reasons including 4 patients with hydrocoele only, 6 cases of groin pain where no hernia was clinically detected, 9 infants with inguinal herniae, 6 patients with clinical herniae who refused an operation and 6 patients who equivocated about their preferred type of anaesthesia.

Of the 284 patients included in the study 276 (97.5%) decided upon anaesthetic type at the initial clinic visit. Of 6 patients who required some extra time before they were able to decide 4 opted for general anaesthesia. A further 2 patients needed a second visit accompanied by their relatives for further discussion and both opted for local anaesthesia. In only 5 cases did the surgeon feel that the patient's preferred option was inappropriate. In 3 of these cases, general anaesthesia was advised for patients who had opted for local anaesthesia. One of

these cases had a giant irreducible inguino-scrotal hernia and two had had a prior history of intractable epilepsy. Only 2 patients who had opted for general anaesthesia were advised to have local anaesthesia. Both cases had a prior history of severe chronic obstructive airways disease.

All patients accepted the surgeon's recommendations and 281 (98.8%) opted to have their surgery performed as day cases.

Table 3 shows the reasons for individual patient choice of anaesthesia. Early mobility and avoidance of post-anaesthetic effects (in particular vomiting and drowsiness) were the commonest reasons provided by patients choosing local anaesthesia. The concern of being awake during the procedure and fear of needles were amongst the commonest reasons given by patients opting for general anaesthesia.

Table 4 shows the patient characteristics of each anaesthetic group undergoing hernia repair. There were more patients in the local anaesthetic group (202 patients, 71%) with those opting for local anaesthesia including manual workers, smokers and patients with significant comorbidity, most notably cardiorespiratory and cerebrovascular disease.

Table 1
Hernia data collection sheet

Personal data						
Name:				Hospital No:		
Age:				DOB :		
Sex:	M <input type="checkbox"/>				F <input type="checkbox"/>	
Smoker:	Yes <input type="checkbox"/>				No <input type="checkbox"/>	
Occupation:	Retired <input type="checkbox"/>		Manual <input type="checkbox"/>		Nonmanual <input type="checkbox"/>	
History						
C/O	Pain <input type="checkbox"/>	Swelling <input type="checkbox"/>	Other <input type="checkbox"/>	Duration...		
Past medical history:						
Chest	Heart	CVA	Diabetes	Prostate	MS	Others
Previous groin hernia surgery:						
Same side:	Other side:	LA:	GA:			
Previous general anaesthetic:						
Examination						
Hernia						
+ ve	Side	Right <input type="checkbox"/>	Left <input type="checkbox"/>	Bilateral <input type="checkbox"/>		
	Type	Inguinal <input type="checkbox"/>	Direct <input type="checkbox"/>	Indirect <input type="checkbox"/>	Femoral <input type="checkbox"/>	
		Recurrent <input type="checkbox"/>		Nonrecurrent <input type="checkbox"/>		
- ve	1st exam	2ed exam	3ed exam			
		Investigations	CT	MRI	Herniogram	
		Result...				
Patient preference						
	L/A <input type="checkbox"/>	G/A <input type="checkbox"/>	Reason			
	DS <input type="checkbox"/>	Inpatient <input type="checkbox"/>	Reason			
Surgeon preference						
	L/A <input type="checkbox"/>	G/A <input type="checkbox"/>	Reason			
	DS <input type="checkbox"/>	Inpatient <input type="checkbox"/>	Reason			

Table 2
Local and general anaesthetic repairs as explained to the patients

The method of repair itself is essentially the same whether you are having the operation under local or general anaesthesia. The difference is in the type of anaesthesia you may have.

Local anaesthesia

If you decide to have the operation done under local anaesthesia, you will have a needle inserted into the back of your hand and you will receive an injection which will relax you but won't put you off to sleep completely. The surgeon will then give you an injection (the local anaesthetic injection) into the groin to make the operation site numb. Most people don't find this injection too uncomfortable. You will not feel any pain during the operation but will feel the surgeon touching you and may feel a sense of pushing and pulling in your groin. If you should feel any pain you will always be able to tell the surgeon who may give you more of the local anaesthetic injection. You will be fully monitored for the entire time of the operation. After the operation you will be up and about and able to go home the same day.

General anaesthesia

General anaesthesia simply means that the anaesthetist will give you an injection to send you off to sleep and you will not be aware of what is going on around you. During this period the anaesthetist will keep you safe by monitoring your body functions. As soon as the operation is over, the anaesthetist will wake you up again. After you wake up from the anaesthetic you will need a short period of recovery. You will then be encouraged to be up and about. Some people feel sick after the operation and anti-sickness injection may be needed to stop this feeling. Most patients are able to go home the same day. Some however, may need a longer time to recover fully and they may then need to stay overnight.

Local anaesthesia proved equally popular in both sexes (71.5% for males versus 66.6% for females).

Local anaesthesia was the preferred option amongst the retired population (74.5%), manual workers (71.6%), and sedentary occupations (60%). Of the manual workers choosing 90% were self employed.

The concomitant medical problems assessed in our study included cardiac disease, respiratory ailments, cerebrovascular disease, epilepsy, diabetes, multiple sclerosis and prostatism. Although the same percentage of patients with significant medical comorbidity (71%) opted for local anaesthesia as those without medical ailments, 32.4% of patients with attendant medical disease cited their medical condition as the prime reason for the preferred anaesthetic choice.

In those patients who had experienced general anaesthesia before, 70.8% preferred local anaesthesia for their hernia repair. These patients cited a litany of previous bad experiences with general anaesthesia as their principal reasons for choice of local anaesthesia on this occasion.

Forty-two patients in the study presented for surgery because of hernia recurrence. Local anaesthesia was preferred by 76.2% of this group although only 2 patients who had had a previous repair under local anaesthesia requested a repeat local anaesthetic approach.

One quarter of patients in the study were smokers. Of these, 67.6% preferred local anaesthesia compared with 72.2% of non-smokers ($P = 0.46$). Smokers opting for local anaesthesia cited concerns in 26% of cases that a general anaesthetic would precipitate a chest infection.

Table 3
Reasons provided by patients for their choice of anaesthesia

Local anaesthesia	No.	General anaesthesia	No.
Concern about feeling sick after surgery	28	Concern of being awake during operation	59
Rapid recovery/early mobility	46	Needle phobia	7
Expectation that surgery will be likely to be a day case	30	Prior satisfaction with general anaesthesia	6
Fear of general anaesthesia	10	Heard from friends and media about cases of sever pain under local anaesthesia	4
Cited as novel experience by the patient	8	No knowledge of local anaesthesia	4
Bad experiences with prior general anaesthesia	16	Concern about keeping still during the procedure	2
Heard favourable comments from friends about local anaesthesia	17		
Concern about exacerbation of pre-existing medical illness	24		
Smokers and concerned about cough/chest infection after surgery	12		
Prior favourable experiences with local anaesthesia	3		
Ability to eat immediately following surgery	4		
Concerns about postoperative urinary retention	2		
No reasons provided	2		
Total	202		82

Table 4
Characteristics of patients undergoing hernia repair for each anaesthetic group

Characteristics	Local anaesthesia		General anaesthesia	P-value
	No.	%	No.	
Mean age (year)	59		53	
Age range	18–86		22–82	
Sex				0.61*
Male	186	71.5	74	
Female	16	66.6	8	
Occupation				0.22
Manual	96	71.6	38	
Sedentary	24	60.0	16	
Retired	82	74.5	28	
Previous GA				0.94
Yes	68	70.8	28	
No	134	71.3	54	
Smokers				0.47
Yes	46	76.6	22	
No	156		60	
Medical comorbidity				0.99
Yes	74	71.1	30	
No	128		52	
Associated type of medical illness				0.02†
COAD	18		2	
Cerebrovascular	10		2	
Prostatism	9		9	
Past MI	11		2	
IHD	14		3	
Diabetes	9		8	
Epilepsy	2		2	
MS	1		2	

COAD, chronic obstructive airways disease; MI, myocardial infarction; IHD, ischaemic heart disease; MS, multiple sclerosis.

* χ^2 -test; † Fisher's exact test.

Table 5
Anaesthetic preferences for the different patient age groups*

Age group (years)	No.	LA		GA
		No.	%	No.
18–30	26	12	46.2	14
31–40	28	18	64.3	10
41–50	36	24	66.7	12
51–60	52	40	76.9	12
61–70	70	52	74.3	18
71–80	58	44	75.9	14
81–90	14	12	85.7	2

* Overall P -value = 0.06 (χ^2 -test).

Of those patients presenting with bilateral herniae (50 cases), 80% chose local anaesthesia. This was despite the fact that the unit policy was to conduct bilateral

hernia repair under local anaesthesia as a staged approach and under general anaesthesia at a single session. Overall local anaesthesia was more popular ($P = 0.06$). Only in the under 30 years group was it less popular than general anaesthesia. In patients 80 years and over, 85.7% preferred local anaesthesia (Table 5).

6. Discussion

There are a range of anaesthetic techniques available for hernia repair. General anaesthesia is both reliable and familiar and has been shown to be safe for use in most age groups and in day cases. The performance of hernia repair under local or regional anaesthesia is now an accepted alternative with many reported advantages [3–8]. This study assessed patient preference for types of anaesthesia in elective hernia repair and its role in the final operative decision.

There was wide patient variation in age, sex, occupation, smoking habits and anaesthetic risk, with males, manual workers, smokers and those with perceived significant medical comorbidity opting more often for local anaesthesia.

Overall, patients preferred local anaesthesia and patient choice was prompt and appropriate in most cases. The reasons most frequently given for a choice of local anaesthesia included the desire for early mobility and the perceived ill effects (most notably nausea) from general anaesthesia. The main reasons given for avoidance of local anaesthesia were concern about being awake during the operation and needle phobia.

Many studies have shown that the future of hernia surgery lies in the establishment of dedicated hernia units with a shift from general anaesthesia to local anaesthesia [3,6,8–10]. Our study, taking into account patient choice in decision making, would seem to be in agreement with this type of approach and that of day case specialists in hernia repair.

Much has been done in recent years to increase the number of hernia cases repaired on a day surgery basis. Little attention has been paid to the provision of this service routinely on a local anaesthetic basis in dedicated centres. Limited awareness by regional health authorities of the increased patient satisfaction with local anaesthesia coupled with the biases of many surgeons towards general anaesthesia with very selective use of local anaesthesia have contributed to the relatively high rates of general anaesthesia for routine hernia repair in many district general hospitals. Many surgeons will often cite other reasons, most notably concern about patient discomfort, lack of muscular relaxation, as well as the potential haemorrhage and disturbed anatomy after infiltration, as the determining factors for choosing general over local anaesthesia to achieve a satisfactory repair in their patients [11].

We believe that acceptance of local anaesthesia among surgeons and their willingness to use it should be encouraged, particularly in the district hospital setting. Formal teaching of the technique is advisable [12] and raises the question of credentials and accreditation should colleges wish to go down the route of dedicated hernia practice and audit [8,9]. Health authorities may look to hernia surgery as more of a surgical speciality with managers factoring in the costs of specialised surgical and nursing training with reduced hospital stay, analgesic requirements, secondary admissions and theatre fees. The true cost-benefit of such an approach needs to be ascertained in prospective trials [13].

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