

Patient satisfaction after laparoscopic and conventional day case inguinal hernia repair

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Abstract

Comparison of patient satisfaction after laparoscopic and conventional day case inguinal hernia repair. The post-operative course of 60 patients subjected to laparoscopic hernia repair (TAPP) and conventional anterior hernia repair (Griffith) under general anaesthesia as day case procedures was analysed. Both groups (TAPP, $n = 30$; Griffith, $n = 30$) were comparable for age and gender. The operating time, success rate of ambulatory surgery, readmissions and complications were assessed. After 6 months (range 3–10) post-operative pain and nausea, consumption of analgesics/anti-emetics, convalescence and adequacy of the patient information were recorded by a telephonic questionnaire. The patients were asked also if they would choose again a day case procedure for hernia repair. In the TAPP group, 28 out of 30 operations succeeded in ambulatory surgery; one patient was admitted because of nausea and another because of the late time of operation. In the Griffith group all operations succeeded as a day case procedure. In the TAPP group patients experienced less pain ($P = 0.05$), but more nausea ($P < 0.05$), they also needed fewer days bedrest ($P < 0.05$) and felt fully recovered sooner. A total of 90% of both groups would choose a day case procedure again. In conclusion, laparoscopic inguinal hernia repair under general anaesthesia can very well be performed as a day case procedure. After laparoscopic hernia repair patients experienced less pain (statistically non significant) and had an earlier recovery, but they had more nausea than after conventional repair. © 1998 Elsevier Science B.V. All rights reserved.

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1. Introduction

In 1987 the Dutch government defined day care as a form of care in a hospital lasting a couple of hours, related to an investigation or treatment on that same day [1]. One of the most frequently performed surgical operations as a day case procedure is inguinal hernia repair. In 1994 a total of 22% of all inguinal hernias were repaired as day cases [2]. Almost 90% of the hernias were corrected by a conventional anterior approach: Bassini (62%), Shouldice (20%) and Griffith (7%) [3,4]. In 1994, 5.7% of all inguinal hernia surgery was done laparoscopically. We think that this figure

will increase because recently some sound prospective randomised studies have claimed superiority of the laparoscopic technique in terms of recurrence [5,6]. Since January 1994 hospital laparoscopic inguinal hernia repair has been carried out as a day case procedure.

The aim of this study is to compare patient satisfaction with laparoscopic and conventional hernia repair in ambulatory surgery.

2. Patients and methods

Between January and October 1996, 190 patients underwent inguinal hernia repair at St. Antonius Hospital, Nieuwegein. A total of 84 adults (53%) were operated upon as day cases. A total of 30 patients

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underwent their repair laparoscopically. The conventional group consisted of 30 patients who were comparable where it concerned ages and gender. The surgeon made the choice for a laparoscopic or anterior approach, according to his own preference. Patients were accepted for ambulatory surgery by the anaesthetist if no or only minor comorbidity was found according to the American Society of Anaesthesiologists score (ASA 1 or 2) and if there was a guarantee of sufficient help at home during the first 24 h after operation [7]. A brochure regarding the procedures on the day surgery unit was handed out. All patients received anaesthesia according to a standard protocol (induction with propofol and fentanyl and maintenance with isoflurane and nitrous oxide in oxygen; the laparoscopic group also received atracurium). The laparoscopic correction was done by a transabdominal preperitoneal approach (TAPP) by which a 10×15 cm polypropylene mesh (Prolene[®], Ethicon, Somerville, NJ) with rounded edges was positioned over the inguofemoral area, widely overlapping the edges of the hernial defect. The conventional operation was done as originally described by Griffith by which the transversalis aponeurosis is sutured to the iliopubic tract [8]. The operations are carried out in the morning and the patients were discharged between 16:00 and 17:00 h with a supply of paracetamol tablets, 500 mg three times a day. After 7–10 days the patient returned to the surgical outpatient clinic.

Operating time (defined as the period between time of arrival at the operating room and departure), the success rate of operation as a day case procedure, readmissions and the number and type of complications were assessed. Post-operative pain and nausea, consumption of analgesics/anti-emetics, convalescence and adequateness of the patient information were assessed by telephone using a standardised questionnaire 6 months (range 3–10) after the operation. Post-operative pain and nausea were measured by the verbal rating score (VRS) with four response possibilities (no, mild, moderate and severe pain or nausea). The convalescence was measured by the number of days bedrest and was also determined by time to feeling 100% fit and by the time elapsed until the patient resumed work. Finally the patients were asked if it were necessary if they would choose ambulatory surgery again.

Where appropriate the χ^2 -test was used to compare proportions. $P < 0.05$ was taken as significant.

3. Results

The characteristics of the patient groups and types of hernia are depicted in Table 1. The mean operating time in the TAPP group was 80 (50–120) min and in the Griffith group 60 (20–80) min. In the TAPP group

Table 1
Characteristics and types of hernia of patients groups

Characteristics	TAPP (<i>n</i> = 30)	Griffith (<i>n</i> = 30)
Mean age (year)	43 (34–68)	47 (17–72)
Male:female	28:2	29:1
Indirect	16	15
Direct	13	10
Pantaloon	1	5
Primary	26	28
Recurrence	4	2
Min operating time (range)	80 (50–120)	60 (20–80)

Results are given as the number of hernias unless otherwise stated.

no operation was converted to an open approach. Two patients could not be discharged the same day: one because of nausea and vomiting and the other because of the late time of the operation resulting in an insufficient recovery time for discharge on the same day. In the Griffith group all the patients were discharged the same day. There were no serious complications or readmissions in either group.

The telephone survey was performed after an average post-operative time of 6 months (range 3–10). All patients were satisfied with the preoperative information. The VRS-scores concerning post-operative pain and nausea are depicted in Table 2. Patients of the TAPP group experienced less pain ($P = 0.05$) but more nausea ($P < 0.05$) than the patients in the Griffith group. The convalescence in the TAPP group was swifter than in the Griffith group. Nine patients in the TAPP group felt it necessary to take bedrest at home. After two days their number was decreased to three. In the Griffith group 14 patients took bedrest and after 2 days this number was still ten ($P < 0.05$). Fig. 1 shows that the patients in the TAPP group felt fully recovered earlier. In the TAPP group 3 of the 28 successful day case procedures (11%) would not choose ambulatory surgery again for their treatment, in the Griffith group this number was three out of 30 (10%). They mentioned nausea and pain as reasons for inpatient treatment.

Table 2
Number of patients with pain and nausea after TAPP and Griffith

Characteristics	Pain		Nausea	
	TAPP	Griffith	TAPP	Griffith
Much	2	4	6	2
Moderate	4	9	4	0
Mild	16	11	1	1
No	8	6	19	27
Medication	10	19	5	1

The number of patients who took analgesics/anti-emetics at home is also depicted.

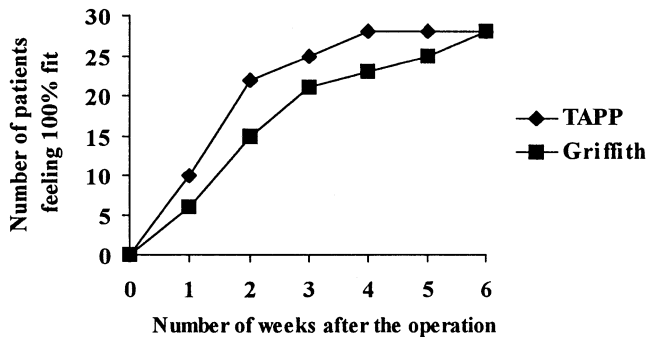


Fig. 1. Post-operative time to patients feeling 100% fit.

4. Discussion

The number of ambulatory surgery procedures is increasing. In the Netherlands there has been a nationwide register since 1991. In the period between 1991 and 1994 day care surgery was recorded as increasing from 18.4 to 35% of all surgical procedures. This is not only accounted for by simple procedures but also by operations like inguinal hernia repair and varicose vein surgery.

For successful day surgery one needs good patient selection, experience with the surgical procedures and an adequate hospital infrastructure. In our hospital there is a preoperative preassessment at the anaesthesiologists outpatients clinic immediately after the surgeon's consultation. As Wilson advises, it's wise to perform these operations before noon so that there is sufficient time to recover [9]. In the TAPP group one patient was operated on late so he had to be admitted. Inadequate control of post-operative pain and nausea can also lead to hospital admission as happened with one patient [10]. In our study all patients were operated on under general anaesthesia. For the conventional repair it's also possible to use regional anaesthesia while for the laparoscopic approach general anaesthesia is required. This might be an argument against day care laparoscopic hernia correction. Maddern and Bessell recorded in randomised trials no difference in post-operative pain and resumption to daily activities between the conventional anterior hernia repair performed under regional anaesthesia and laparoscopic repair done under general anaesthesia [11,12]. Remarkable is the number of patients in the TAPP group with post-operative nausea compared to the Griffith group ($P < 0.05$). Because the anesthetic technique in our study is the same in both groups, nausea may very well be related to the transabdominal approach in the TAPP group. Larsson [13] and Andrews [14] believe that post-operative nausea is related to the manipulation of the intestines. A longer duration of operation is also thought to cause an increase of post-operative nausea [13]. Insufficient desufflation after laparoscopy aggravates abdomi-

nal discomfort [14]. They [13,14], advised to start the administration of anti-emetics during the operation. Avoiding hypercarbia during anaesthesia is also important [15,16]. Less post-operative pain, quicker recovery and earlier resumption of work after laparoscopic hernia repair corresponds very well with the results of most randomised trials [11,12,17–20]. The probably smaller surgical trauma of laparoscopy supports the suitability of laparoscopic inguinal hernia repair for ambulatory surgery. The patients' appreciation in terms of choosing day care surgery again for an inguinal hernia repair is 90% for both groups and corresponds with Theus' trial in another Dutch hospital [10].

We conclude that laparoscopic hernia repair, as well as the conventional method, can very well be performed as a day case. We feel that adequate administration of anti-emetics is mandatory to reduce post-operative nausea, which occurs more often after a laparoscopic than after a conventional hernia repair.

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