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The use of relaxation techniques in the perioperative management of proctological patients: preliminary results

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Abstract Relaxation techniques positively affect the psychosomatic pattern of patients undergoing surgical treatment. Among these techniques guided imaging (GI) has been reported to improve outcome following colorectal surgery. This study assessed the effects of GI on the postoperative course in proctological patients. We carried out a prospective randomized trial in a group of patients operated on for anorectal diseases in our coloproctology unit. Patients were randomized into group 1 (n=43) with standard care and group 2 (n=43) with relaxation techniques; they listened to a GI tape with music and relaxing text before, during, and after surgery. The following parameters were evaluated by a questionnaire (a) postoperative pain measured by visual analogue score, (b) the quality of sleep measured by a similar score, and (c) the nature of first micturition, evaluated as normal or difficult. Groups were similar in age and sex distribution, type of disease, and operation performed. The pain score was 3.2±1.4 in GI patients and 4.1±2.1 in controls (P=0.07). The quality of sleep score was 4.8±2.9 in GI patients and 6.4±2.7 in controls (P=0.01). The first micturition was painful in 10.3% of GI patients and in 27.3% of controls (P=0.09). Perioperative relaxation techniques thus showed a trend to reducing pain following anorectal surgery and significantly improving the quality of sleep; a decrease in anxiety and a consequent muscle relaxation may be involved. Therefore GI, a low cost and noninvasive procedure, can be recommended as an helpful tool in this type of surgery.

Keywords Relaxation · Imaging · Psychology · Proctological · Surgery

Introduction

Postoperative pain is the major concern in patients undergoing anorectal surgery, and this often delays the operation, worsening the symptoms and the disease. Several studies have compared the effect of different surgical techniques on pain, without finding any significant difference in most cases. Less importance, however, has been given in the literature to the psychological pattern of the patients [1]. Pain has been demonstrated to have a relevant psychological component which may subsequently affect the postoperative course and increase the risk of complications, for example, urinary retention due to a lack of pelvic floor muscle relaxation.

The use of relaxation techniques such as guided imaging (GI) has been reported to improve the outcome following colorectal surgery, by decreasing anxiety and postoperative pain and shortening the length of postoperative ileus [2]. The aim of the present prospective randomized study was to determine whether perioperative GI improves the outcome of anorectal surgery.

Table 1 Patient characteristics

Diagnosis	Operation	Guided imaging		Controls	
		n	%	*n*	%
Hemorrhoids	Hemorrhoidectomy	7	15.8	13	31.6
Anal fistulas	Fistulectomy	11	28.9	11	26.3
Mucosal prolapse	Prolapsectomy	9	21.1	3	7.9
Others[a]	Others[b]	16	34.2	16	34.2

[a] Anal fissures, pylonidal sinus fecal, incontinence
[b] Internal sphyncterotomy, excision of the sinus, sphynteroplasty

Patients and methods

A total of 86 consecutive patients undergoing surgery for benign anorectal diseases were randomly allocated (by sealed envelopes) into two groups: group 1 (n=43) underwent perioperative relaxation techniques by means of GI whereas group 2 (n=43) had a standard treatment. The two groups were similar in age and sex distribution. The group 1 mean age was 48 years (range 25–72; 21 men, 22 women) and the group 2 mean 44 years (range 18–70; 28 men, 15 women). The groups were also similar regarding type of diseases and operation (Table 1).

The GI procedure consisted in listening to a tape 1 h before, during, and after surgery. Tapes were 30 min long and had a soft, "new-age-like" musical background; a relaxing text was also recorded which was aimed at guiding the patient's mind into a calm environment by suggesting relaxing images, as described by Tusek et al. [2]. The patients were instructed about the study protocol and the aims of the GI procedure by a nurse previously trained by the psychologist responsible for preparing the procedure. The patients were encouraged to listen to the tape once 1 h before entering the operating room, once or twice during surgery depending on the duration of the operation, and at least twice within 48 h after surgery before discharge. GI was given prior to discharge from hospital in all cases. Microspinal anesthesia was used in all patients by means of an injection of 3 ml of bupivacaina into the peridural space at the level of second-third lombar vertebral body. Peri- and postoperative intravenous fluids were restricted, and none of the patients received more than 1000 U intravenous fluids; three patients had local anesthesia. Peripheral anesthesia was supplemented by intravenous administration of diprivan (PropoFol) with the goal of making the patient sleepy and relaxed; a music-only tape was used in this cases. All patients received intramuscular ketorolac postoperatively (30 mg every 8 h). The first evacuation was facilitated by means of high-residue diet and mild laxative in all patients.

The following parameters were evaluated: (a) Postoperative pain was assessed by means of a visual analogue scale (VAS) indicated by the patients, where 0 represented no pain and 10 the worst pain ever experienced. (b) Quality of sleep was measured by a similar score (1=quiet sleep, 10=insomnia). No patient was given any sleeping drug routinely; the number and dose of sleeping drugs, if any, were recorded. (c) The nature of first micturition was determined as either evaluated as normal or difficult, the latter including patients who required catheterization. Neither the nurse who collected the postoperative questionnaires completed by patients and controls nor the first author, who evaluated the data, were blinded to procedure or group assignments.

Statistical comparison of group differences was carried out by means of Student's t test for parametric data and the χ^2 test for nonparametric data. The significance level was considered $P<0.05$. The study protocol was approved by the ethics committee of our institution.

Table 2 Effect of guided imaging on postoperative course

	Guided imaging	Controls	*P*
Postoperative pain (VAS score)	3.2±1.4	4.1±2.1	0.07
Quality of sleep (similar score)	4.8±2.9	6.4±2.7	0.01
First micturition			0.09
Normal	39 (89.7%)	33 (72.7%)	
Difficult	4 (10.3%)	10 (27.3%)	

Results

Postoperative pain was lower in the GI group than in controls (VAS 3.2±1.4 vs. 4.1±2.1, P=0.07; Table 2, Fig. 1). The quality of sleep score was lower in GI patients than in controls (4.8±2.9 vs. 6.4 2.7, P=0.01; Table 2, Fig. 2), which means that patients receiving the GI technique were able to sleep more quietly than patients with standard treatment. Patients in the control group did not receive more sleeping drugs than those in the treatment group, they did not require more analgesics, and they received the same dose of ketorolac. The first micturition was difficult in four patients in the GI group and in ten control patients (10% vs. 27%, P=0.09; Table 2).

Discussion

GI free patients of the anxiety related to surgery and has been widely used in the past to decrease stress levels during anesthesia [3], both focusing the patient's attention on positive images [2]. Despite this recognized positive effect, specific relaxation techniques such as GI are seldom employed by surgeons, as shown by the lack of psychological evaluation and support when analyzing posthemorrhoidectomy pain, in both in- and outpatients [1, 2, 3, 4]. We found these techniques particularly suitable in proctological patients. The major concern of patients prior to surgical hemorrhoidectomy is anal pain, and this type of symptom has frequently been found to be related to psychological distress [5]. Sensory signals generated by tissue damage during anorectal surgery can prolong the state of increased excitability in the central nervous system. Therefore a method is need to relax the patient's mental state.

We found GI to be effective in reducing pain after surgery, with a clear trend, as the patients who under-

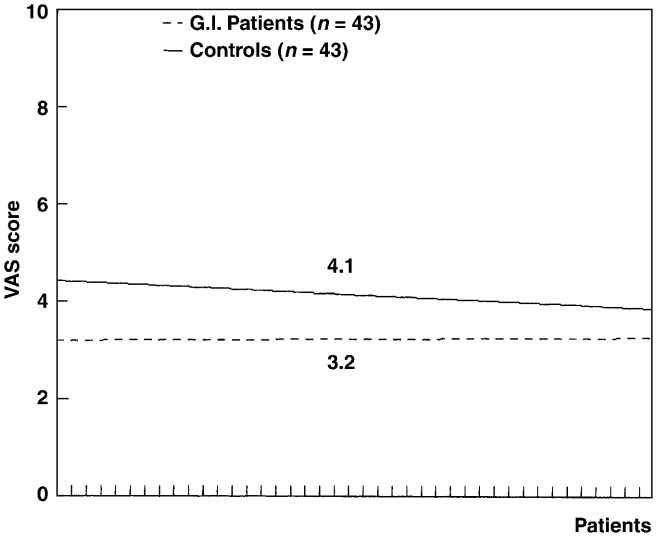

Fig. 1 Postoperative pain expressed by an 11-point visual analogue scale (*VAS*): 0=no pain, 10=worst pain ever experienced (P=0.07). *GI* Guided imaging

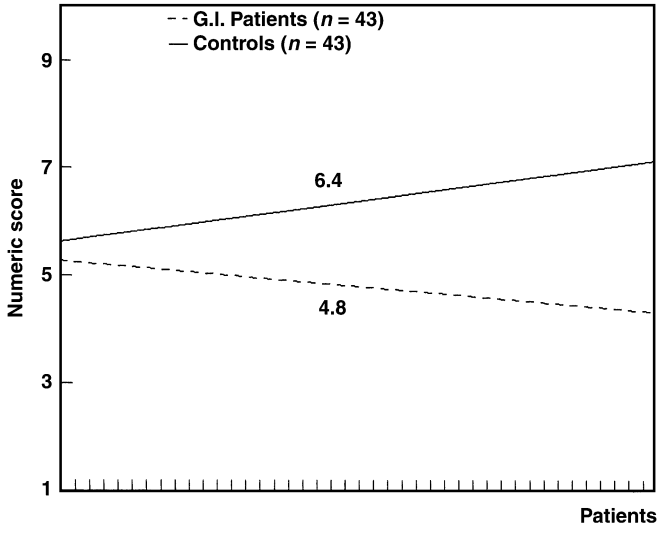

Fig. 2 Quality of sleep expressed by an 11-point score: 1=quiet sleep, 10=insomnia (P=0.01). *GI* Guided imaging

went standard treatment complained of greater discomfort. The mean score of 3.2 on postoperative pain in our patients treated by means of perioperative GI, compares favorably with the score of 5 reported by other authors whose patients underwent a standard analgesic support [1]. An immunological endogenous response may be also hypothesized. The advantage of GI over a standard analgesics regimen is that it entails no risk of side effects, such as the blood coagulation defect which might be caused by the administration of nonsteroidal anti-inflammatory drugs. As postoperative rectal bleeding has been reported after hemorrhoidectomy [1], this seems rather important point.

We also found the quality of sleep to be significantly improved in patients who underwent perioperative GI. Sleep is often disturbed by pain and anxiety, and this parameter is important in the perioperative course for evaluating the response of the patient [6]. A good ability to sleep is very relevant for the quality of life, particularly during and after surgical treatments [7, 8]. GI reduces anxiety and surgical stress levels, allows a better quality of sleep, and improves the postoperative management.

An incidence of urinary retention as high as 52% in patients has been reported following hemorrhoidectomy [9]. The urinary retention rate is higher with hemorrhoidectomy than with other proctological procedures, and the highest retention rate in hemorrhoidectomy patients is achieved when patients are operated on in caudal anesthesia. Furthermore, the use of long-acting anesthetic drugs substantially increases the risk of urinary retention [10].

The exact cause is unknown but may be related to a dysfunction of the detrusor muscle of the trigone of the bladder, in response to pain in the anal canal [11]. A trend towards significant reduction in postoperative pain was associated with a decrease in micturition discomfort in our patients treated by means of GI relaxation techniques. Most of them (89.7%) had a normal voiding after surgery. As reflex urethral spasm has also been reported as a cause of urinary retention [12], a muscle relaxation induced by the GI may also be involved. Finally, a mental distress component is also considered as a cause of urinary discomfort by some authors who underline the importance of an ambulatory operation which allows the patients to have the first voiding at home, in a psychologically comfortable environment [9]. Most of our patients spent the first 24 h in the hospital, but the use of GI allowed a more relaxing postoperative course, with positive effect on micturition.

According to the results of present controlled prospective study, the use of GI positively affects the postoperative course following anorectal surgery. Two of the major complains of the patients, i.e., postoperative pain and troublesome micturition, are improved by the relaxation techniques, which was also found to significantly improve the quality of sleep. GI is a safe, low-cost, and effective tool, which may help the patients in proctological surgery.

Nevertheless, the data obtained in this study should be considered preliminary due to the higher number of hemorrhoidectomy cases in the control group, which may have increased the risk of pain in this group compared with the GI group, and to the small number of cases, which may have affected the statistical significance of the comparison. Further studies in larger series with the randomization of the operative procedures may be needed to confirm the efficacy of perioperative relaxation techniques in proctological surgery.

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References

1. Hoy H, Seow-Choen F, Tan M, Leong AFPK (1997) Randomized controlled trial of open and closed haemorrhoidectomy. Br J Surg 84:1729–1730
2. Tusek DL, Church JM, Strong SA, Grass JA, Fazio VW (1997) Guided imagery: a significant advance in the care of patients undergoing elective colorectal surgery. Dis Colon Rectum 40:172–178
3. Eisenman A, Cohen B (1995) Music therapy for patients undergoing regional anaesthesia. AORN J 62:947–949
4. O'Donovan S, Ferrara A, Larach S, Williamson P (1994) Intraoperative use of Toradol facilitates outpatient hemorrhoidectomy. Dis Colon Rectum 37: 793–799
5. Renzi C, Pescatori M (2000) Psychologic aspects in proctalgia. Dis Colon Rectum 43:535-539
6. Abyholm AS, Hjortdahl P (1999) The pain takes hold of life. A qualitative study of how patients with chronic back pain experience and cope with their life situation. Tidsskr Nor Laegeforen 119:1624–1629
7. Cohen RD, Brodsky AL, Hanauer SB (1999) A comparison of the quality of life in patients with severe ulcerative colitis after total colectomy versus medical treatment with intravenous cyclosporin. Inflamm Bowel Dis 5:1–10
8. Rovera GM, DiMartini A, Schoen RE, Rakela J, Abu-Elmagd K, Graham TO (1998) Quality of life of patients after intestinal transplantation. Transplantation 66:1141–1145
9. Hoff SD, Bailey HR, Butts DR, Max E, Smith KW, Zamora LF, Skakun GB (1994) Ambulatory surgical hemorrhoidectomy – a solution to postoperative urinary retention? Dis Colon Rectum 37:1242–1244
10. Zaheer S, Reilly WT, Pemberton JH, Ilstrup D (1998) Urinary retention after operations for benign anorectal diseases. Dis Colon Rectum 41:696–704
11. Pompeuis R (1966) Detrusor inhibition induced from anal region in man. Acta Chir Scand [Suppl] 351:1–54
12. Rankin J (1969) Urological complications of rectal surgery. Br J Urol 41:655–659