

The role of surgical guidance and psychological support in management of pain relief after thyroidectomy

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Abstract

Background and Aims

Inadequate management of postoperative pain is common. In addition to medical and technical factors, pre-surgical guidance and psychological preparation may, also influence the experience of post-operative pain. Our aim is to find out the effect of preoperative structured surgical information and psychological support that the patients received in pain relief after thyroidectomy.

Methods

This prospective study has been conducted in Sohag University Hospitals, in the period from October 2007 to April 2009. Pain intensity was measured in day 1, 2, and 3 postoperatively in 132 patients undergoing thyroidectomy for simple multinodular goitre. They were divided into 4 groups: group (A) with no special surgical or anesthetic information or psychological preparation; group (B) with detailed surgical and anesthetic guidance; group (C) with psychological support; and group (D) with both surgical and anesthetic guidance and psychological support. The consumed analgesics were, also measured collectively in the postoperative three days and compared in the four groups of cases. All patients answered the questionnaire of 4-point scale for pain assessment.

Results

In the postoperative day 1, pain experience was more in group A (1.69 ± 0.47) than in group B (1.50 ± 0.51) and group C (1.56 ± 0.50) and the least experienced pain was in group D (1.09 ± 0.36). In the postoperative day 2, pain experience was, also more in group A (1.47 ± 0.59) than in group B (1.16 ± 0.37) and group C (1.09 ± 0.36) and the least experienced pain was in group D (0.90 ± 0.31). Structured pre-surgical information and psychological preparation were negatively correlated with feeling of postoperative pain and this was statistically highly significant during day 1, 2, and 3 postoperatively ($p < 0.001$; 0.001 ; 0.017 respectively).

The mean consumed analgesic ampoules were more in group A (nalbuphine 0.52 ± 0.14 , declofenac sodium 0.98 ± 0.31) than in group B (nalbuphine 0.41 ± 0.11 , declofenac sodium 0.82 ± 0.32) and group C (nalbuphine. 0.38 ± 0.2 , declofenac sodium 0.83 ± 0.17) and the least group consuming analgesics was group D (nalbuphine 0.34 ± 0.91 , declofenac sodium 0.63 ± 0.56) and this was statistically highly significant ($p < 0.001$).

Conclusion

Systematic and structured preoperative surgical information and guidance provided by the surgeon, anesthesiologist, psychiatrist and nursing staff positively impacts the intensity of experienced postoperative pain and hence decreases the consumed analgesics and their side effects.

Introduction

Postoperative pain as a phenomenon has been studied in numerous ways. The international association for the study of pain defines PAIN as "unpleasant sensory and emotional experience associated with actual or potential tissue damage(1). Many factors affect how the individual may experience pain. Current theory and research suggests that the pain phenomenon is a sensory and emotional experience that is influenced by physiologic, sensory, affective, cognitive, sociocultural and behavioral factors.(2)

Postoperative pain is common and most notably occurs in association with and often expected result of surgical procedures.(3) It has since been repeatedly confirmed that 30-70% of patients undergoing surgery suffer from inadequately treated pain. (4), (5) Contemporary systematic reviews still indicate that nearly one third of patients undergoing surgical procedures will experience moderate to severe pain in the postoperative period. (6)

Pain perception increases when anxiety is high and patients are attentive to the pain. Pain is not all in your head! It is not made up or all psychological. However psychological factors can affect the way you feel pain. For example, have you ever noticed a black and blue bruise on your body that you do not remember how it got there? Obviously, the bruise is real, not fake but your attention and thoughts at the time it occurred were focused elsewhere. In contrast, if someone tried to give another bruise just like the first while you were aware and watching, you would most likely clearly feel the pain! This is an example of how psychological factors can

influence the way you feel pain(7). Controlling your psychological focus can help you to control your pain. These psychological factors of pain sensation suggested by many other authors (2,8-10).

The period preceding surgery is unquestionably a traumatic period for the patient when many patients experience intense stress and prove fearful of possible complications, which may include even death. (11) Major life changes are among factors that cause anxiety, and one of these changes is surgery. Emotional reaction to surgery have specific effects on the intensity and velocity as well as the process of physical disease.(12) Preoperative experiences characterized by fear, questions, isolation and uncertainly exerted significant influences on the respondents. (13) Patients experience threats from surgery, for some, the decision to have surgery was not easy and there was a feeling of pressure to do what is considered right. (14)

Professional support is important for patients undergoing surgical intervention. It offers an opportunity for information sharing, relieving anxiety and promoting a sense of control. (15) Lack of understanding about surgical procedures may exacerbate patient response of perceived postoperative events and may aggravate the patient's anxiety that can influence the postoperative pain intensity (16)

Preoperative care is as vital to the patients as surgery. Adequate pre-operative preparation of the patient both physically and psychologically is important to provide optimum intra-operative conditions and lays the basis for pain relief and smooth postoperative recovery. Preoperative preparations begin once the surgeon has placed the patient on the waiting list (17)

Discussion of pre-operative events, alleviation of patient's anxiety and pain relief are considered important objectives designed to achieve in care of a patient undergoing surgical treatment. (17)

The relationship between preoperative patient preparation that is providing relevant information prior to the operation, with the course of the patient's postoperative pain as it affects postoperative recovery and wellbeing.(18) Surgical guidance and instruction given by the surgeons and nursing staff during the pre-surgical preparation can assist the patient during recovery and reduce post surgical pain and complications.(19)

Through direct guidance and psychological support given to the patient by the surgeon, psychiatrist, anesthesiologist and surgical nurse will prepare him or her psychologically for surgery.(20)

Surgeries that are planned and scheduled in advance (i.e. elective surgery) most often use pre-surgery information programs. It is important to note that the positive effects of this type of preparation seem to be the result of improved interaction with the health care staff and better use of self-care-behavior (e.g. deep breathing and relaxation). The preparation process can help surgical patients to communicate their expectations, fears and ability to manage distress and pain associated with their surgery which can then help the health care team respond better to their needs.(18)

Preoperative interviews is important tool to receive and give information concerning post operative pain management.(19)

Thyroid surgery is quite common surgical operation in our district. This kind of research has not been performed before on our patients. The aim of this study is to find out the effect of preoperative surgical information and psychological support that patients received in pain relief after thyroidectomy.

Patients and Methods

Patient selection

This study was carried out in Surgery Department at Sohag University Hospitals from October 2007 to April 2009. Patients in this study included all those diagnosed as simple multinodular goitre and subjected to thyroidectomy. Selection criteria also included patients aged between 18-60 years. All eligible patients for this study had consented.

Exclusion criteria included: patients known with psychiatric disorders like depression and anxiety; or those taking psychotropic medications or extremes of age, as higher pain scores have been observed in adolescents compared to adults following surgery (20). The elderly patients perceive, also less pain than a younger patients during comparable surgical procedures (6) and more importantly, advanced aged patients are often unable to self-report their pain. (21) Other exclusion criteria also included patients, who have past history of previous surgical operation as previous surgery experience may influence postoperative pain intensity (22) and emotional pain (7).

Data collection:

This was a prospective study. All the necessary data were entered into a computerized data base. It included patient's epidemiological data; social status; clinical diagnosis; preoperative routine thyroid workup and treatment.

All cases were subjected to preoperative psychometric assessments in which Hospital Anxiety and Depression Scale (HADS) was applied to rule out patients with probable depression and anxiety to avoid the potential confounding psychological variables as they are thought to influence the experience of postoperative pain.(23)

Patients were scheduled to receive general anesthesia with endotracheal intubation. Propofol 2.5 mg/kg i.v. was used for induction of anesthesia. Endotracheal intubation was facilitated by rocuronium 0.5 mg/kg i.v. Anesthesia was maintained by isoflurane. Ventilation was controlled mechanically throughout surgery.

All patients received an intramuscular ampoule of nalbuphine (12mg) after they regain consciousness as a standard methods of postoperative analgesia but for practical reason some patients who asked for additional analgesia received other ampoules of nalbuphine (12mg) or declofenac sodium (75 mg i.m) according to their needs for postoperative pain relief .

Patients answered questionnaire of 4-points scale to measure pain intensity in day 1, 2, and 3 postoperatively. It is a simple and understandable measure for the level of pain (0=none, 1=mild, 2=moderate, and 3=severe or unbearable). Consumed analgesics were also recorded collectively in the three days postoperatively and compared in the four groups.

All eligible cases were divided into 4 parallel age matched groups: **Group A** (control group) patients were subjected to the usual preoperative preparation regarding simple information about the operation. Currently, all surgeons and anesthesiologists do not explain every steps of the procedure in anesthesia and the surgical procedure and the post operative course for all patients in routine and structured way.

Group B patients were subjected to surgical guidance regarding the anesthesia, the procedure which is covered in details, what the patient can expect to feel like after the surgery, post surgical self-care and exercise program and oral feeding, average hospital stay before leaving to return home, length of work leave, and

postoperative pain management.

Group C patients were subjected to psychological support in the form of therapeutic alliance (friendly and flexible good doctor-patient and nurse-patient relationship), supportive psychotherapy (verbalizing unexpressed strong emotions to bring considerable relief from anxiety and tension that accompanied with waiting an operation) and relaxation.

Group D patients were subjected to both surgical guidance and psychological support. Surgical guidance and psychological support started once the patient placed on the waiting list for surgery through regular outpatient visits. All the patients have been admitted in the surgical ward in Sohag University Hospital one night before operation.

STATISTICAL METHODS

All values are expressed as mean (SD), or number (%). Statistical analysis between treatment groups was performed by Chi-square test. P-value less than 0.05 was considered significant

Results:

A total of 164 patients were invited in this study period. Of these, 132 (80.5%) were eligible and had been successfully completed the study. Twenty two were excluded from the start as 12 patients refused to participate in the study with no obvious reasons and the other 10 were unable to fill in the questionnaires due to language difficulties. Of the remaining 10 patients: three patients were excluded, due to major psychological diseases (one case with schizophrenia and the other two with depression); and the remaining 7 patients were excluded as they developed local postoperative complications (2 cases with haematoma, 2 with transient hypocalcaemia, and 3 with transient vocal cord paresis).

Their age ranged from 21-59 years with mean of 41 ± 8 and they were 72 women and 60 men.

Results of postoperative pain intensity: Table (1)

It was found that pain scoring is more in group (A) and the least postoperative pain in group (D). There is statistical significant difference between group (A) in comparison with group D in the first two days, but no statistical significant difference between all patient's groups in the third postoperative day as shown in table (1).

Table (1): shows the mean pain score experienced by patients in first three postoperative days and their significance in relation to group A (patients with no structured surgical guidance or psychological support)

	Day(1)		Day(2)		Day(3)		Mean pain in the 3 days	
	Pain score	P-value	Pain score	P-value	Pain score	P-value	Pain score	P-value
Group(A)	1.69(0.47)	Control group	1.47(0.59)	Control group	0.81(0.40)	Control group	1.32(0.26)	Control group
Group(B)	1.50(0.51)	A&B 0.13	1.16(0.37)	A&B 0.007*	0.69(0.47)	A&B 0.25	1.11(0.16)	A&B 0.001*
Group(C)	1.56(0.50)	A&C 0.30	1.09(0.36)	A&C 0.001*	0.63(0.49)	A&C 0.098	1.09(0.15)	A&C 0.000*
Group(D)	1.09(0.36)	A&D 0.000*	0.90(0.31)	A&D 0.000*	0.53(0.51)	A&D 0.017	0.84(0.16)	A&D 0.000*

*significant at 0.05 level

II) Total amounts of consumed analgesics during hospital stay

It was found that the group (D) had the least consumed analgesic ampoules as shown in (table 2).

Table (2): Mean post operative analgesics during hospital stay

Patient's group	Post operative analgesia during hospitalization		P value of Narcotics	P value of NSADS
	Narcotics nalbuphine (Ampoules per day)	NSADS Declofenac sodium (Ampoules per day)		
A	0.52±0.14	0.98±0.31	Control group	Control group
B	0.41± 0.11	0.82±0.32	A&B P=0.07	A&B P=0.09
C	0.38± 0.20	0.83±0.17	A&C P=0.04*	A&C P=0.10*
D	0.34± 0.91	0.63±0.56	A&D P=0.001*	A&D P=0.001*

Discussion:

Currently, the majority of surgeons and anesthesiologists do not explain every step of anesthesia and the surgical procedure and the post operative course for all patients in routine and structured way. Postoperative pain control is vital for patients, yet it has been a neglected area of care for too long ((4), (5).

A better understanding of the relationship of surgical guidance and psychological support with postoperative pain can guide clinicians in the selection of non pharmacological measures for comprehensive pain control.

The main objective of this study was to test whether specific information given prior to thyroidectomy can help patients to obtain better postoperative pain relief and reduce the consumed postoperative analgesics. The other objective of the present study was to enable the individual patient to take control of the situation and be able to prevent peaks of pain i.e. to support the patients psychologically in active coping strategies.

Patients without preoperative special surgical information or psychological preparation feel the worst pain among all patients with surgical and psychological preparation. Patients with surgical guidance or psychological preparation reported approximately similar pain scores however it is worth noting that patients who received both surgical guidance and psychological support feel significantly the least pain among all investigated groups. Our results are in agreement with Sjolting et al (2003)(1) and Pan, et al (2006) (30) who found that specific detailed surgical information did positively influence the experience of postoperative pain. Many authors (8,31,32) have concluded that psychologically prepared patients have improved postoperative pain and perceived control over pain has been identified as a major psychological factor associated with reduced pain reports and increased pain

tolerance (33). However contradictory results were found by Worster and Holmes (2008) (13) who observed that for some patients , though preoperative information was reassuring it also raised anxiety and consequently anxiety may potentiate pain because patients become more attentive to pain (34-36). On the other side Guex (1994)(9) suggests that such preoperative anxiety is 'normal' signifying that patients are conscious of what will happen and are trying to prepare for it psychologically. After all, Klinger et al (2008)(10) take into account that multimodal treatment could conceivably prove to be more effective or else psychological pain management and surgical guidance might be considered prior to surgery so as to avoid postoperative complications such as pain.

Our research demonstrated that the total consumed analgesics in the 1st 3 days after surgery was significantly more in patients with traditional surgical information. Those who received structured surgical information and psychological preparation were patients who consumed the least analgesics and this was statistically highly significant. This is in consistent with the results of Kotrotsious (2004) (3)who found that speaking with patients before surgery about their postoperative pain, not surprisingly, result in diminishing the amount of administered analgesics post operatively.

It is important to consider the limitations of this study, as all cases were treated by thyroidectomies, which is not a very painful procedure. However, it is fair to know that thyroidectomy is one of the commonest surgical procedure in our locality, which necessitates general anesthesia, and there is no major role, in the current situations, for epidural analgesia, which is effectively control the early post operative pain in the whole body below the neck.

Conclusion and Recommendations:

On the basis of the results of this study as well as other many current studies, surgical guidance and psychological support directly improve postoperative pain and minimize postoperative analgesics and consequently their deleterious side effects. It is recommended to implement a program of education for postoperative pain management team including surgeon, anesthesiologist, psychiatrist, and nursing staff with the use of standardized protocols of surgical guidance and psychological support. Further randomized, controlled trials are needed to establish, the impact of surgical guidance and psychological support in other types of operations.

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دور الارشاد الجراحي و المساندة النفسية فى تخفيف آلام مابعد العملية الجراحية

الخلفية و الاهداف : ان نقص التعامل الكافي مع الام مابعد العملية الجراحية يكون شائعا و من الممكن ان الارشاد الجراحي و المساندة النفسية بالاضافة الى العوامل الطبية و التقنية ان تؤثر علي كيفية الاحساس بالام مابعد العملية الجراحية. وهذا يعكس رغب