

Assessment of Patient Satisfaction With Postoperative Pain Management After Ambulatory Gynaecologic Laparoscopy

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Abstract

Objective: To determine patient satisfaction with postoperative pain control after ambulatory gynaecologic laparoscopic surgery.

Methods: A prospective cohort study in a major tertiary care centre was performed to assess patient satisfaction with postoperative analgesia on the day of surgery and on postoperative days one and two. Data were collected either by telephone or mail-in questionnaire on each postoperative day. Each patient rated her level of satisfaction according to a 5-point scale at the end of each postoperative day as an average for that day. The final outcome was recorded as either *satisfied*, with all days classified as "very satisfied" or "perfectly satisfied," or *unsatisfied*, if any single day was rated as "not satisfied at all," "only slightly satisfied," or "somewhat or partly satisfied."

Results: Forty-nine patients completed the questionnaire. Surgical procedures included tubal ligation with cautery (20), ovarian cystectomy (5), oophorectomy (2), diagnostic laparoscopy (14), and Burch procedure (8). Sixty percent of patients (30/49) were classified as satisfied with their level of postoperative analgesia.

Conclusion: Only 60% of patients undergoing gynaecologic laparoscopy as day surgery were satisfied with postoperative pain control. This is suboptimal, particularly in light of the ongoing trend towards more complex procedures being performed as day surgery via minimally invasive techniques.

Résumé

Objectif : Déterminer la satisfaction des patientes en ce qui concerne la maîtrise de la douleur postopératoire à la suite d'une chirurgie laparoscopique gynécologique ambulatoire.

Méthodes : Une étude de cohorte prospective a été menée au sein d'un important centre de soins tertiaires, afin d'évaluer la satisfaction des patientes en ce qui concerne l'analgésie postopératoire le jour de la chirurgie et au cours des deux journées ayant suivi. Les données ont été recueillies par téléphone ou par questionnaire postal chaque jour à la suite de

l'opération. Chaque patiente a évalué son degré de satisfaction (degré moyen pour la journée en entier) en fonction d'une échelle en cinq points à la fin de chaque jour à la suite de l'opération. Le résultat final a été consigné comme étant « satisfaite », lorsque tous les jours avaient reçu une cote « très satisfaite » ou « parfaitement satisfaite », ou « non satisfaite », lorsque l'une des cotes « pas satisfaite du tout », « légèrement satisfaite » ou « quelque peu ou partiellement satisfaite » avait été attribuée à l'une ou l'autre des journées de suivi.

Résultats : Quarante-neuf patientes ont rempli le questionnaire. Parmi les interventions chirurgicales, on trouvait la ligature des trompes accompagnée d'une cautérisation (20), la kystectomie ovarienne (5), l'ovariectomie (2), la laparoscopie diagnostique (14) et le procédé de Burch (8). Soixante pour cent des patientes (30/49) ont été classées comme étant satisfaites de leur degré d'analgésie postopératoire.

Conclusion : Seulement 60 % des patientes subissant une laparoscopie gynécologique ambulatoire ont été satisfaites de la maîtrise de la douleur postopératoire. Cela s'avère sous-optimal, particulièrement à la lumière de la tendance continue vers l'exécution ambulatoire d'interventions de plus en plus complexes au moyen de techniques minimalement effractives.

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INTRODUCTION

A degree of postoperative pain is an expected phenomenon.¹ However, severe pain and side effects attributable to pain-relieving medication affect a substantial number of patients after day surgery, both before and after discharge.² Many surgical patients continue to experience severe pain as late as the seventh postoperative day,³ and uncontrolled pain is the main reason for delayed discharge from hospital,⁴ contact with a general practitioner, and unanticipated admission.⁵

Because the subjective and complex character of pain presents obstacles to assessment and management by health professionals, patient-centred assessment is extremely important. Despite the clinical importance of pain

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management in the postoperative patient, a limited amount of research has been conducted exploring patients' experiences.⁶ Patients who have been informed about the specifics of their medical treatment and the possible outcomes are generally more satisfied.⁵ Patients who have unrealistic expectations of treatment or outcome tend to be less satisfied than patients with lower expectations.⁵ Another important factor is the perceived caring and warmth of the healthcare provider.⁷ Physicians who communicate warmth and interest to their patients are rated as better healthcare providers than those who are perceived to be aloof and uncaring.⁷

Adequate postoperative pain control may be an important determinant of patient satisfaction. It is possible that many patients have been undertreated for their postoperative pain, which may have a negative impact on short-term recovery. One study of non-gynaecologic post-surgical patients suggests that inadequate pain control may even have a detrimental long-term effect on health.⁸

There is a paucity of published information on the assessment and management of postoperative pain and day surgery in gynaecologic laparoscopy. As advancing technologies allow more procedures to be performed as day surgery, this is increasingly important. Further research is necessary to allow improvements in postoperative pain management, which should lead to more rapid recuperation of patients, shortened hospital stays, decreased morbidity and costs, and improved patient outcomes.

With this background, we sought to assess the degree of satisfaction with pain control in women who underwent laparoscopic gynaecologic day surgery in order to gauge their satisfaction and offer suggestions for improvement.

METHODS

We obtained ethics approval from the Mount Sinai and University of Toronto Ethics Review Boards, and obtained written informed consent from each patient in advance of their participation in our study. We designed a prospective cohort study to evaluate postoperative pain control. All patients undergoing gynaecologic laparoscopic day surgery during the recruitment period of July to October 2005 at Mount Sinai Hospital, a large tertiary care hospital in Toronto, were potential candidates. Patients were identified at the time of surgery and followed during the immediate postoperative period of 72 hours.

Exclusion criteria included a history of drug or alcohol abuse, chronic pain, regular preoperative use of NSAIDs or opioids, and the inability to speak and read English. Patients were also excluded if they were admitted to hospital after surgery for reasons such as conversion to laparotomy or postoperative complications. Any patient admitted for postoperative pain control was retained and counted as being unsatisfied with postoperative analgesia. Patients who subsequently did not complete the questionnaire were not included in our analysis.

Satisfaction with pain control was measured on the evening of the day of surgery and on postoperative days one and two, using a new subjective 5-level scale, designed specifically for this study, as an average rating for that postoperative day (not satisfied at all, only slightly satisfied, somewhat or partly satisfied, very satisfied, perfectly satisfied). This outcome was dichotomized by those who were satisfied and those who were not satisfied: patients classified as "satisfied" were those who responded as being "very satisfied" or "perfectly satisfied" on all three assessments. All others were classified as "unsatisfied." Thus, the single final primary outcome measure was self-classification of satisfaction on *all* assessments.

On the day of surgery, a research assistant provided patients in the preoperative waiting area with a return mail questionnaire and information pamphlet, as well as detailed verbal instructions for correct completion. Patients were reminded on the first postoperative day by telephone, and their questions were answered to ensure accurate completion of the forms. As the study progressed, it became apparent that, in most cases, completing all data collection by telephone call on each of the three days was more practical and ensured better compliance.

The satisfaction rating scale described above has not been validated. Therefore, a visual analogue scale was also used.⁹ The VAS consisted of a 10 cm horizontal line with the two endpoints labelled "no pain" and "worst possible pain." In cases where data were collected by telephone rather than mail questionnaire, a verbal scale from 0 to 10 was used. The average level of pain for each postoperative day was recorded. After surgery, data were also collected from the medical chart on age, BMI, prior surgery, type of current surgery, diagnosis, and perioperative analgesic use.

Descriptive statistics were used to determine the proportion of patients who were satisfied and to describe the study population. Recorded levels of satisfaction using the 5-level rating scale and the VAS were compared using Cohen's kappa; prior surgery and BMI were felt to be important predictors of patient satisfaction, and these variables were compared between those satisfied and unsatisfied using the

ABBREVIATIONS

BMI	body mass index
NSAIDS	non-steroidal anti-inflammatory drugs
VAS	visual analogue scale

Satisfaction rates according to surgical procedure

Procedure	Satisfied (using questionnaire) n (%)	Satisfied (using VAS) n (%)
Tubal ligation with cautery (20)	16 (80)	11 (55)
Cystectomy (5)	0 (0)	0 (0)
Oophorectomy (2)	1 (50)	1 (50)
Diagnostic laparoscopy (14)	5 (36)	4 (29)
Burch (8)	5 (63)	4 (50)

chi-square test, with an alpha level of 0.05 considered statistically significant.

The primary outcome of proportion satisfied was used for sample size determination. We concluded that postoperative analgesia would be acceptable if 85% of the subjects were satisfied with pain control. With a precision of 0.1 (i.e., $\pm 10\%$) and the anticipated proportion satisfied 0.85, 49 completed questionnaires were needed for the study.

RESULTS

One hundred eight patients were approached before surgery, 71 agreed to participate, and 49 questionnaires were completed. Twenty-two questionnaires were not completed as a result of withdrawal of consent to participate, cancelled surgery, or admission to hospital on the day of surgery for reasons other than pain control.

The mean age of participating patients was 38 years, mean BMI was 25.7 kg/m², and 55% of patients had had prior surgery. The laparoscopic procedures were as follows: tubal ligation using cautery (20), ovarian cystectomy (5), oophorectomy (2), diagnostic laparoscopy (for infertility or reasons besides chronic pelvic pain) (14), and Burch procedure (8).

Using the 5-level rating scale as described above, we classified 60% of patients as satisfied with their level of postoperative analgesia. If a VAS score of less than or equal to 5 on any postoperative day was used to classify a patient as unsatisfied, then only 40% were satisfied. The two methods used to rate satisfaction did not correlate, with a kappa value of 0.04. These data are shown according to surgical procedure in the Table.

Since pain satisfaction may have been recorded differently on the three assessments, possibly on the basis of adequate loading of medication in the recovery room and inadequate analgesia at home on the following days, each of the assessments was analyzed separately. Using the 5-level rating scale, we classified 72% as being satisfied on the day of

surgery, 66% as being satisfied on postoperative day one, and 72% as being satisfied on postoperative day two.

Local anaesthetic was injected at the laparoscopic port sites at the time of surgery in 96% of patients. Preoperative (i.e., "pre-emptive") analgesia in the form of naproxen 500 mg rectal suppository was used only with the Burch procedure. Postoperative analgesic regimens used were as follows: acetaminophen alone (in 4 satisfied and 2 unsatisfied patients), acetaminophen plus codeine (in 12 satisfied and 7 unsatisfied patients), acetaminophen plus oxycodone (in 0 satisfied and 2 unsatisfied patients), acetaminophen plus codeine plus NSAID (in 7 satisfied and 3 unsatisfied patients), NSAID alone (in 3 satisfied and 2 unsatisfied patients), and no analgesic (in 4 satisfied and 3 unsatisfied patients). Anti-emetics or corticosteroids were not used intraoperatively as adjunctive analgesics; they were used postoperatively as needed for control of nausea.

Fifty-five percent of patients had had prior surgery, and 42% of patients had a BMI greater than 25 kg/m². There was a trend towards greater satisfaction in those who had had prior surgery (74% vs. 53%), and those who were not obese (72% vs. 46%), although neither variable was statistically significant ($P > 0.05$ by chi-square tests).

DISCUSSION

Evaluation of patient satisfaction with postoperative pain control guides quality improvement to strengthen the level of pain relief and improve care. Patients' self-evaluation of satisfaction allows us to understand their perception of the pain they experience so that we may initiate positive outcomes, and meet or exceed the patients' highest expectations in the adequacy of pain control. For this reason, the level of satisfaction with pain control was chosen as the primary outcome in our study.

We found that the proportion of patients satisfied with postoperative pain control after a laparoscopic gynaecologic procedure was below our 85% standard, varying from 40% to 60% depending on the method of analysis,

and varying by day (72% on the day of surgery and the second postoperative day and 66% on the first postoperative day).

BMI and prior surgery were thought likely to be predictors of satisfaction with analgesia. Differences in BMI greatly affect the dose of medications required for pain relief. However, doses of acetaminophen, codeine, and NSAIDs are not typically titrated according to BMI in clinical practice. We found that there was less satisfaction with the level of pain relief in obese patients.

Prior surgery was thought likely to be a predictor because it affects the expectation of intensity and quality of pain perceived by the patient. Their expectations based on prior surgery could have a positive or negative effect. Patients might have greater expectations and therefore lower satisfaction ratings if they have experienced postoperative pain. Conversely, prior surgery may provide more realistic expectations of postoperative pain, and this may be supported by the trend towards greater satisfaction in patients who had had prior surgery.

Despite the trends we found, neither BMI nor prior surgery was found to be statistically significant as a predictor of satisfaction with pain control. However, the sample size of the study was not calculated to answer these questions, and the findings provide only hypotheses that may be considered in future research.

Other factors that might be considered for future study are the efficacy of preoperative analgesics given either on the night before surgery or the morning of surgery, and regular dosing schedules of analgesics for 48 to 72 hours after surgery rather than administration only when needed.

The 5-level satisfaction scale used in this study has not been validated and was developed specifically for the study. We felt that scales that had been used in other studies, such as simplified 3-level scales, were not sufficiently sensitive for our requirements. Although the two methods of satisfaction rating did not correlate when measured using Cohen's kappa, both methods of measurement showed a relatively low level of satisfaction with postoperative pain control, at only 40% to 60%. The reason for the lack of correlation between the two methods is unclear. It is possible that our

newly developed scale, or the cut-off value used for the VAS, was invalid. The cut-off on the VAS was chosen based on the dispersion of VAS scores when compared with the new 5-level rating scale. In addition, we considered a VAS score of 5 to be a mid-point above or below which the patient may perceive a specific difference. The kappa value may have been low because of lack of data precision and might have been improved with a larger sample size. The low proportion of patients who were satisfied is believed to be accurate, since uncompleted questionnaires were unrelated to postoperative pain, and both pain-rating methods showed a poor level of satisfaction.

CONCLUSION

The proportion of patients satisfied with postoperative analgesia after laparoscopic gynaecologic day surgery was found to be sub-optimal. This is of particular importance in light of the ongoing trend towards more complex procedures being performed as day surgery via minimally invasive techniques. This study provides the impetus for a prospective study of factors affecting analgesia, such as BMI, and for prospective randomized trials comparing analgesia regimens such as perioperative NSAIDs and more potent opioid analgesics than codeine.

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