

East African Medical Journal Vol. 76 No 5 May 1999

PAIN CONTROL AFTER MAJOR SURGERY

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ABSTRACT

Objective: To assess the adequacy and efficacy of postoperative pain management.

Design: A prospective clinical study.

Setting: The Georgetown and New Amsterdam Public Hospitals, Guyana.

Subjects: Two hundred consecutive patients undergoing major abdominal surgery.

Main outcome measures: Presence or absence of significant postoperative pain during the first 24 hours.

Results: All the patients experienced pain postoperatively. Sixty one per cent of patients considered their pain severe, 30% rated it moderate and only 9% mild. Reasons for this deficiency of care are partly attributable to the patients themselves and also the health care staff.

Conclusions: Postoperative pain is poorly managed in our general hospitals.

INTRODUCTION

Unrelieved pain has negative physiological, physical and psychological consequences, yet it is a well-recognised fact that pain after major surgery is often inadequately treated worldwide(1-3). An unacceptably high number of patients continue to experience significant pain after surgery in spite of our conventional analgesic regimens. There is therefore a need to improve on our postoperative pain management. There is very little published information on this aspect of perioperative care from the tropical developing world.

This study aimed to assess prospectively the management of pain following major surgery at the two major public hospitals in Guyana, the Georgetown and New Amsterdam Public Hospitals. Such an audit may identify problem areas and provide a basis for improvement.

MATERIALS AND METHODS

Two hundred consecutive patients undergoing major abdominal surgery at the public hospitals in Georgetown and New Amsterdam, Guyana were studied. All of them had similar general anaesthesia which consisted of an intravenous induction, endotracheal intubation and maintenance with halothane and nitrous oxide in oxygen. Muscular relaxation with controlled ventilation was employed. The patients received parenteral opioid analgesics at some time during the perioperative period; either as premedication or during the intra- or immediate postoperative period. The goal was for the patient to leave the recovery room relatively pain-free.

An investigator visited each patient 24 hours after surgery and specifically asked about the presence and severity of any postoperative pain during the first 24-hour period. Pain intensity was assessed by the patient using a 0-3 verbal rating

scale (0, no pain; 1, mild pain; 2, moderate pain; 3, severe pain). If pain was experienced, the patient was asked if he or she informed the staff about it or not, and what was done. The investigator then reviewed the patients' charts to note the doctor's postoperative analgesic orders, the dose actually administered, and also to see if there were any comments by the doctors and nurses about the patient's pain control. The nursing staff were also asked about their assessment of the patients' pain control.

RESULTS

Two hundred patients, 154 females and 46 males who underwent major abdominal surgery were studied. The procedures are shown in Table 1. Their age range was 12-72 years .

Table 1

Types of surgical procedures

Surgical procedure	No. of Patients	%
Caesarean section	96	48
Abdominal hysterectomy/ myomectomy	50	2
Exploratory laparotomy	28	14
Cholecystectomy	15	7.5
Others	11	5.5

All the patients reported that they experienced pain around the operation site during the first 24 hours after surgery. Nine per cent of the patients indicated that this was mild while 30% and 61% reported experiencing pain of moderate and severe intensity respectively (Table 2). Only 27% of those who felt moderate to severe pain informed a nurse while 73% did not. The

reasons given for not informing the nurse are shown in table 3. Of the 27% of patients who informed the nurse only 19% of this 27% received any analgesic medication while 81% got none. The nurses' response to the latter group was any one of the following; (a) the injection was to be administered at specific times that is, six or eight hourly, (b) the injection was not immediately available, (c) that she would be back to administer the medication but never came back.

Table 2

Incidence and severity of pain

	No. of patients	%
Mild	18	9
Moderate	60	30
Severe	122	61

While there were occasional indications in the nurses notes of repeated complaints of pain by patients, there were no records that these were reported to a doctor. Doctors very infrequently asked about or documented pain status in the notes during rounds. Pethidine was the opioid analgesic available and used in the hospitals. It was readily available and free of cost to the patients. All the patients (except one who had no postoperative analgesia whatsoever ordered) had intramuscular injections of pethidine only ordered as the sole postoperative analgesic during the first 24 hours. The prescription regimens varied according to the doctors preferences, but they were mainly doses of 50-100 mg to be administered 4 hourly, 6 hourly, 8 hourly, or *pro re nata* (PRN) basis. A review of the treatment sheet clearly showed that the prescribed orders were poorly complied with irrespective of prescription pattern. Only 10% of the patients received the prescribed daily dose while 41% received a single dose and 10% none at all (Table 3). The mean, median, and modal consumption of pethidine of our patients during the first 24 hours after surgery were 150 mg, 100 mg and 100 mg respectively.

Table 3

Reasons given why patients did not inform nurse about pain

Could 'bear' the pain	47%
Afraid of the nurse or of disturbing the nurse	31.5%
The nurse knows when to give what is prescribed	15.7%
Miscellaneous	5.8%

Table 4

I.M. administration of pethidine

I.M. bolus						
No. of doses given	0	1	2	3	4	5
No. of cases	20	82	77	20	1	0
%	10	41	38.5	10	0.5	0

IM = intramuscular

The nurses on duty interviewed generally considered that the patients' pain control was less than optimal but blamed this on busy schedules especially at night (understaffing in crowded wards), logistics and procedures involved in accessing controlled drugs, and the inability of some patients to "tolerate" or "bear" pain.

DISCUSSION

This study suggests that the incidence of significant pain after major surgery in the two major hospitals in Guyana is very high. More than half of the patients (60%) experienced severe pain for a considerable period.

Intermittent intramuscular injections of opioids as used in our patients, is the most common method of treatment of major postoperative pain worldwide. Despite its limitations, it can provide satisfactory analgesia after major surgery(3-5) and its administration is simple, safe and inexpensive(6). The low opioid consumption and consequent high incidence of pain in our patients was mainly because of inadequate or inappropriate administration(7). While most of the doctors generally underprescribed opioids, even these amounts were infrequently given by the nurses for various reasons as stated in the results. The patients here, as in other parts of the developing world, expect to, and do feel pain postoperatively but are reluctant to communicate this to the medical and nursing staff(8).

While opioids remain the mainstay of management of severe pain, reliance on a single class of drugs (the single bullet approach) may not be effective in all patients without causing significant adverse effects. Efficacy of analgesia can be increased while at the same time reducing the incidence of side effects by utilising a multimodal or balanced analgesia approach. This involves the simultaneous use of several agents or techniques, each with a different mode of action, such as, opioid use can be combined with non-opioids, local anaesthetics and psychotherapy(3,4). Non-opioid analgesics are more likely to be administered as prescribed than opioids(9). Nonsteroidal anti-inflammatory drugs (NSAIDs) are devoid of opioid-like side effects, are effective in mild to moderate pain and have significant opioid-sparing effects after major surgery(3,4).

Inadequate knowledge and attitude about pain and its management of both health care staff and the patients is the major constraint or impediment to more effective postoperative pain control. Postoperative analgesia is still regarded by both the staff and patients as an unimportant and insignificant aspect of perioperative care. This deficiency in care has been repeatedly highlighted by several authorities(3,8,10,11). In the light of these findings we suggest the following strategies to improve pain management.

Emphasis must be placed on the education of medical and nursing personnel both at the formative years and on a continuing on-the-job basis. Doctors should improve their prescribing methods based on a sound knowledge of the pharmacology of the drugs used and pain assessment must be a routine part of patients' evaluation during ward rounds. Pain management should as much as possible be preventive (or preemptive) rather than reactive. It is much easier to prevent the onset of severe pain than it is to treat it when it has already occurred. Medication on PRN basis is inefficient and exposes the patient to severe pain on a recurring basis. Instead, opioids should be given at timed intervals at least for the first 24 postoperative hours when pain is expected to be most severe(3) Nurses because of their continual contact with the patients are central to pain management. Pain should be assessed frequently and regularly and recorded in the charts alongside other vital signs as many patients (74% in our study) are reluctant to inform the nurses without prompting. Charting pain scores makes pain more "visible" and therefore more likely to be treated. Inadequate pain control should be considered as a complication like any other surgical complications and deserves the attention of the doctor.

Optimal pain control requires a multidisciplinary approach with cooperation between members of the health care team(3). Coordination of efforts is best achieved through a formal body such as an acute pain team or service. This team should include a senior doctor and a senior nurse who are motivated and knowledgeable in pain management. Their duties would include educating the nurses and conducting regular checks on patients and nurses to ensure that acceptable standards of pain relief are being maintained. They are also responsible for instituting pain management protocols and policies.

All surgical patients need to be informed preoperatively about postoperative pain and the anticipated strategies to control it. They should be encouraged to freely report any pain experienced.

Implementation of these strategies is very feasible and should significantly improve postoperative pain control without much effect on the usually limited resources. Effective postoperative pain management provides not only patient comfort, but it results in improved patient outcome(3). It is therefore imperative on all health care providers to ensure that their patients receive such care which can be provided by the careful, meticulous and innovative use of currently available agents and techniques.

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