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Guide to Pain Management in Low-Resource Settings

Chapter 16
Pain Management in Ambulatory/Day Surgery

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Case report

John, a 5-year-old boy, had an orchidopexy done under general anesthesia. The perioperative period was uneventful, and the child (accompanied by his mother) was discharged home, fully awake and comfortable about 5 hours after the procedure with a prescription of oral paracetamol (acetaminophen). Problems began later that night when the child woke up complaining of significant pain around the operation site. The mother gave him the prescribed analgesic, but the pain persisted, and the child had now become inconsolable and unable to go back to sleep, keeping the parents and the other siblings awake.

This sort of scenario is unfortunately very common and causes unnecessary pain, distress, and suffering, not only to the patient but often to the whole household. The good news is that this type of situation is easily preventable or at least effectively treatable in most cases by applying simple and safe methods of pain relief.

For our illustrative case above, an example of a typical pharmacological analgesia therapy can be as follows. Paracetamol and/or a nonsteroidal anti-inflammatory drug (NSAID) is given orally as a premedication about 1 hour before surgery or as a suppository after induction of anesthesia. A caudal block or a field block or local infiltration with bupivacaine or ropivacaine local anesthetic is administered after induction of anesthesia. Postoperatively, oral paracetamol and/or an NSAID should be given at regular intervals for the first 48 hours, and oral tramadol or codeine ordered as required (rescue analgesia) for unrelieved moderate to severe pain.

Why is analgesia for minor surgical procedures a topic worth reading about ?

In this section, I will explain why pain may be a common and significant problem in seemingly minor surgical procedures and how such pain can be effectively managed. Postoperative pain should be considered a complication of surgery with significant adverse effects, and every effort should therefore be made to avoid or minimize it. It is obvious that there are various options for providing effective and safe analgesia after minor surgical procedures. Satisfactory analgesia should be feasible for every patient, irrespective of geographical location or level of resources.

What is minor surgery?

Surgery is commonly classified as major or minor depending on the seriousness of the illness, the parts of the body affected, the complexity of the operation, and the expected recovery time. Minor surgical procedures now constitute the majority of procedures carried out in health care facilities because of greater awareness and

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earlier presentation of patients, and the increasing availability and accessibility of health care resources. Generally, more than half or even two-thirds of all surgical cases in health care facilities are usually considered minor and are often done as "same-day" or "day-case" or as "outpatient" or "ambulatory" surgery, where the patient comes into the health care facility, has the procedure done, and goes home the same day. This trend has been increasing recently and is mainly driven by economic factors, patients' preferences, improved anesthetic and surgical techniques, and the increasing availability of minimally invasive surgical procedures.

What is the prevalence of pain after minor surgery?

The general assumption is that minor surgery is associated with less pain than major surgery. One of the criteria for selection for outpatient surgery is that pain should be minimal or easily treatable. However, it may be difficult to accurately predict pain intensity in a particular individual as some seemingly minor surgery may elicit moderate to severe pain for various reasons, including interindividual variability in pain perception and response. For the same type of surgical procedure, two similar individuals may perceive and experience pain very differently, and even for the same individual, the intensity of pain of a procedure may vary with time and activity. Several studies have shown that more than 50% of children and a similar proportion of adults who undergo outpatient surgery experience clinically significant pain after discharge.

What factors lead to poor pain control after minor surgery?

Contributory factors to poor postoperative pain control in minor surgery include:

- The assumption that minor surgery is associated with little or no pain, so that little or no analgesics are given in the postoperative period.
- The pressures of current ambulatory surgical practices, which emphasize rapid recovery and return to "street fitness" and early discharge, resulting in anesthesia care givers and surgeons avoiding or minimizing the perioperative use of potent and longer-lasting analgesics and sedatives that may delay recovery and discharge.
- The fear among health care providers of the respiratory depressant and sedative effects of opioid drugs outside of immediate supervised medical care.
- The presumption that patients or guardians may be ignorant of the risks of medications and may abuse them, with significant consequences at home.
- Legislative and restrictive policies in some regions that make it difficult to have access to potent analgesics.

Strategies for ensuring effective postoperative analgesia

Be proactive

Effective postoperative pain management begins preoperatively. Patients are often very anxious and distressed by the hospital and procedure experience, and this distress may exacerbate pain postoperatively. Preoperative information and education regarding pain control has been shown to significantly reduce patients' and guardians' anxiety and analgesic consumption. Education improves understanding and compliance with the analgesic administration regimen. Important information may need to be repeated or provided in written form as patients or their guardians may not remember everything they had been told during the perioperative period.

Most patients recovering from anesthesia in the recovery room are comfortable because of the proactive and aggressive pain management by the anesthesia care provider. Unfortunately, when the patient is discharged, the intensity or continuity of pain care is disrupted. The pain of surgery often outlasts the pain medication or local anesthetic administered in the perioperative period. To avoid this problem, administer the first postoperative analgesic dose before the effects of the intraoperative analgesics wear off completely.

Use preemptive or preventive analgesia

Preemptive analgesia implies that giving analgesia *before* the noxious stimulus is more effective than giving the same analgesia *after* the stimulus. While this concept has not been convincingly proven in all clinical studies, what is clear is that more analgesia is often required to treat pain that is already established than to prevent or attenuate pain that is still developing. One

should therefore aim to preempt or prevent pain if possible or proactively treat pain as early as possible.

Avoid analgesic gaps

Analgesic gaps subject the patient to recurring pain and unsatisfactory analgesia. Such gaps tend to occur when the effect of a prior analgesic dose or technique is allowed to wear off before the subsequent dose is given. An appropriate dosing interval based on knowledge of the pharmacology of the agent is important to minimize this gap.

Apply a multimodal analgesia strategy

Multimodal analgesia implies the use of several analgesics or modalities that act by different mechanisms in combination to maximize analgesic efficacy and minimize side effects. This strategy allows the total doses and side effects of analgesics to be reduced.

Paracetamol, a nonsteroidal anti-inflammatory drug (NSAID), and local analgesia should be routinely used as components of a multimodal analgesic strategy, unless there is a specific reason not to use one of these agents, as they are synergistic or additive. In other words, the combination provides better analgesia than one of the individual drugs alone. Potent opioids, especially the long-acting ones like morphine and methadone, should preferably be avoided or used sparingly as postoperative analgesics for minor surgery because of their associated side effects, especially nausea and vomiting, respiratory depression, and sedation. Postoperative nausea and vomiting (PONV) can be quite distressing, and some patients may prefer to tolerate the pain rather than use opioids. PONV and pain are the two most common causes of delayed discharge and also for unanticipated admission in day-case surgery. However, if the severity of pain warrants the use of opioids, the shorter-acting agents such as fentanyl should preferably be used by careful titration to effect in the immediate postoperative period.

Alternatively, the "weaker" opioids such as tramadol or codeine should be used. The "weaker" opioids have the advantages of minimal sedative and respiratory depressant effects, a low potential for abuse, and not being subject to stringent opioid restrictions, and thus they may be more easily dispensed to appropriate patients. They therefore fill an important gap in the analgesic ladder between the mild non-opioid analgesics and the more potent opioids, especially for day-cases.

An often forgotten or neglected part of the multimodal approach is the use of nonpharmacological therapies. Psychological and physical therapies complement medications and should be used whenever possible. Physical therapies include splinting and immobilizing painful areas, application of cold or hot compresses, acupuncture, massage, and transcutaneous electrical nerve stimulation (TENS). Psychological therapies include behavioral and cognitive coping strategies such as psychological support and reassurance, guided imagery, relaxation techniques, biofeedback, procedural and sensory information, and music therapy. Studies suggest that these nonpharmacological therapies improve pain scores and reduce analgesic consumption.

Pearls of wisdom

- Discuss the options and plan the method of postoperative pain management with the patient and/or guardian preoperatively.
- Be proactive; begin postoperative pain management preoperatively. This strategy will reduce intraoperative anesthetic requirements and facilitate earlier recovery and discharge.
- Give preemptive or preventive analgesia. Prevention is better than cure. Much larger amounts of an analgesic are required to treat established pain than to prevent it.
- Use a multimodal approach to pain management, incorporating both pharmacological and nonpharmacological methods.
- Provide a supply of effective analgesics and information on their use before discharge.
- Give appropriate and effective analgesics regularly (around-the-clock) rather than p.r.n. or "as required" for the first 24 to 48 hours postoperatively, when the pain intensity is likely to be highest. Make provision for management of breakthrough pain (rescue analgesics).
- Always provide a contact number that a patient or guardian can call if necessary.

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