
Position Paper

Management of perioperative pain in adults for surgeons

INTRODUCTION

Acute and chronic pain are a common reason that patients are referred to surgeons. In ideal circumstances, surgery to address a biomedical pathology relieves patients of their pain. Unfortunately, for a significant number of these patients, pain following surgery, or chronic post-surgical pain (CPSP), persists or worsens. The reasons for this are multiple and complex.

BACKGROUND AND RATIONALE

The phenomenon and prevalence of CPSP is well established. In the past two decades there has been a rapid increase in knowledge of the pathophysiology and risk factors for CPSP. Pain management guidelines have been published, although predominantly in pain and anaesthesia literature.

By contrast, surgical publications have focused on minimally invasive approaches, enhanced recovery, and procedural and technological advances. No comparable surgical guidelines exist. There are likely many factors for the different emphases between anaesthetists and surgeons, including differential education about pain and pain management, and perceived responsibility for managing pain.

The recent publication (2020) of *Acute Pain Management: Scientific Evidence* (5th edn.) by the Australian and New Zealand College of Anaesthetists (ANZCA) and Faculty of Pain Medicine (FPM), is endorsed by RACS, and is a landmark tool for guiding all medical practitioners, including surgeons, who treat acute and perioperative pain. Used thoughtfully, it should be consulted for decision-making and potentially for developing evidence-based guidelines for clinical practice. In this position paper the publication is referred to as the APMSE¹.

As surgeons, we have a unique and overarching responsibility for managing patients in the preoperative, intraoperative and post-operative periods. This includes, most importantly, who we choose to operate on. Our ability to do this well is a moral imperative, and using the most recent evidence-based resources, as well as our surgical training, dramatically influences the outcomes of our patients and the wider community.

It is appropriate for an international surgical college to develop evidence-based consensus guidelines for the management of perioperative pain. To achieve this, we would build on the foundational work of the APMSE, in collaboration with ANZCA/FPM and others. We have the expertise to embark on this project, and to identify the unanswered, but important, questions, along with continuous updates to improve and refine the recommendations.

Finally, good pain management is good patient management. Post-surgical pain, like any surgical complication that surgeons encounter, is best anticipated and avoided if possible. It should be recognised early and managed with a comprehensive evidence-based and multidisciplinary approach to minimise the possibility of developing chronic pain. Converging lines of evidence, as discussed here, including emerging medicolegal and patient satisfaction data, will require surgeons to make good pain management a standard of care.

THE PREOPERATIVE SURGICAL ASSESSMENT OF THE PATIENT WITH PAIN

The preoperative assessment of a patient is potentially the most important phase of a surgeon's care. This aspect of treatment enables the most comprehensive assessment of the biopsychosocial aspects of the patient's pain complaint. It facilitates appropriate selection of patients for surgery or non-operative treatment. There are opportunities to build rapport, set expectations, obtain informed consent and collaborate with other health professionals to seek the best results for the patient, as well as minimise medicolegal risk.

Many patients are referred to surgeons with a primary complaint of pain. They seek relief of pain, although a lot of patients also say the last thing they want is surgery. The expectations of pain relief held by the surgeon; patient; referring doctor; and sometimes third parties, including case managers or lawyers; may differ. For example, the referring doctor may believe the patient requires surgery because they are unable to manage the patient's pain, despite the patient, themselves, wanting to avoid surgery. Some surgeons may find it helpful to clarify the patient's expectations in a questionnaire before they see the patient.

Every effort should be made to conduct a thorough and comprehensive assessment at the initial consultation, in order to optimise the outcome of the patient's pain management. This may be facilitated, in some practices, by using screening questionnaires, pain diagrams, allied health assessment, or discussion with the referring doctor, family or significant others.

In some circumstances, a second or third consultation with further investigations may be required to achieve a thorough assessment, particularly if surgery is contemplated. Surgeons should not feel under pressure to arrive at a diagnosis if it requires further time. They should also not be uncomfortable about informing the patient that the diagnosis is not clear.

Consistent with contemporary models of pain experience, it is strongly recommended that surgeons assess the biopsychosocial dimensions of a patient's pain experience. They should note that chronic pain is prevalent in the general population (20%) and increases with age (66%) and that many painful conditions are associated with psychological dysfunction.²

This can complicate interpretation of the presentation of pain and may also increase the risk of unfavourable outcomes with surgical or other intervention. Indeed, psychosocial risk factors (yellow flags) are prevalent in persistent pain, work injury and medicolegal settings – particularly when investigations do not disclose a clear structural biomedical cause.

If surgery is contemplated, surgeons should also be mindful of factors that increase the risk of persistent post-operative pain, which have been extensively studied, and some of which may be modifiable. These include chronic and widespread pain, severity of preoperative pain, opioid dependency, depression, anxiety and catastrophising. When considering the potential benefits of surgery, these risk factors, as well as the associated risk of making the patient worse, need to be carefully weighed against the potential benefits of surgery.³

In some institutions, high-risk pre-anaesthetic clinics have been established with pain medicine specialists who optimise pain management preoperatively and provide support in the perioperative period. Referral to these clinics can be effective in personalising pain management in high-risk patients, such as high opioid use.⁴

There is also limited evidence for presurgical psychological screening of patients. This screening is performed by trained pain psychologists to specifically identify psychosocial variables such as pain self-efficacy, catastrophising and acceptance, which can influence surgical outcomes and be modified with suitable interventions.⁵

Informed consent for surgery should include advice on the risk of persistent post-operative pain. This is particularly important for patients who present with conditions generally not associated with preoperative pain, such as inguinal hernia.

Studies have demonstrated that the risks of post-surgical pain range from 10–80 per cent depending on the surgery type, time course chosen and severity of pain. Following hernia repair, for example, 40–60 per cent of patients will have some form of post-operative pain at some point. Although, a much smaller number, possibly 10 per cent, may have significant persistent pain at one year of which three per cent may be severe. A discussion about what therapies might be applicable if the patient's pain is not relieved by surgery would be appropriate at the preoperative visit, for example – physiotherapy or rehabilitation.⁶

Assessing and setting patients' expectations before any pain relief intervention can be helpful will ensure these are as realistic as possible. For example, after surgery it can be emphasised that some pain is to be expected and is normal in the perioperative phase. Also, that the aim will be manageable pain with the expectation of improvement, and not the complete absence of pain.

Alternative treatments to the surgical treatment of pain should be discussed with patients, for example – steroid injection, or no intervention.

In patients for which surgery is unlikely to improve their pain complaint, it should be made clear to the patient and alternative strategies suggested, including a second opinion. Referral to a specialist pain medicine physician, or service, might be appropriate in patients with complex pain.

The decision not to operate should not mean the surgeon has abandoned the patient and that there are no further options, although some patients may perceive this decision as abandonment. After listening to the patient, offer a brief acknowledgement such as “I feel your distress and share your frustration, but I'm really sorry I can't help you with surgery.” This may help to minimise a patient's disappointment or unrealistic expectations.

Anecdotal evidence suggests the most common cause of patients' complaints in this scenario are:

- the patient's perception that the doctor wasn't interested
- the patient's complaint wasn't duly acknowledged
- the doctor was dismissive and rude
- the doctor didn't suggest alternatives
- the doctor didn't spend enough time listening to the patient.

It is challenging to manage some patients' expectations and often it is the patient who least requires surgery who takes the longest to understand. Improving systems for recognising these scenarios, scheduling sufficient time for patients, and improving the communication skills of surgeons who manage patients with complicated health needs, may mitigate these difficulties.

In surgical specialties, where persistent pain is often seen both with surgical intervention and without it, direct engagement with multidisciplinary pain services can be helpful. This will permit timely referral to appropriate treatment services for those cases in which surgery is considered unlikely to be of benefit. Not only will the patient receive more comprehensive care, but surgeons who treat these patients are less likely to suffer professional stress and burnout.

THE PERIOPERATIVE MANAGEMENT OF PAIN FOR SURGEONS

As discussed, the publication APMSE is endorsed by RACS, and is a landmark tool in guiding surgeons in their decision-making about treating acute and perioperative pain.

The topics within the APSME include acute pain and transition to chronic pain, efficacy of analgesic medications and non-pharmacological strategies, analgesia in specific clinical and surgical conditions, and specific patient groups with evidence-based summary statements.¹

Anaesthetists working collaboratively with surgeons will likely implement most of the suggestions from the APMSE. However, surgeons should be aware of the evidence as it pertains directly to their management of patients within the perioperative period. The following points have been summarised and highlighted for surgeons.

- Pain is an individual, multifactorial experience influenced by culture, previous pain events, mood and ability to cope.
- Post-operative pain control is influenced by psychological and social factors. Anxiety, catastrophising, depression, unrealistic expectations and pre-existing pain can increase the risk of poor post-operative pain control and delayed recovery. These are also risk factors for chronic post-surgical pain, which is common and is associated with significant disability.¹
- Multi-modality analgesia including pre-emptive and preventive strategies, regional anaesthesia techniques, use of transitional pain services and minimisation of nerve injury at surgery may help reduce post-operative pain. In addition, adjuvant therapies can reduce the amount of opioid required in the post-operative period. This can reduce adverse opioid-related events, the amount of opioid prescribed on discharge and the consequent risk of opioid dependence following a surgical procedure.¹
- Post-operative pain is often multifactorial in aetiology and may incorporate nociceptive, inflammatory and neuropathic processes, each of which should be considered and treated. In recognition of this, the APMSE has separate chapters on specific clinical situations, such as spinal surgery or acute cancer pain allowing for personalisation of pain management.¹

In patients with complex pain management requirements, such as opioid dependency, input from a specialist pain management physician and team is well advised. Although, surgeons should ensure they are supervising the process. Coordination of the plan among all members of the clinical team, including doctors, nurses and allied health professionals, should be led by the surgeon.

The post-operative discharge management of a patient who has undergone surgery and has post-operative pain requires careful thought and an informed discussion with the patient. The surgeon must balance the need for good pain relief against the risk of opioid prescription and consequent risk of opioid dependency, which can occur in six per cent of patients. Using a multimodal approach, and consistent with a biopsychosocial appreciation, pain relief should be coordinated with a physical therapy and rehabilitation approach to improve function following surgery. For many patients, although not all, simple analgesia, including Panadol and non-steroidal anti-inflammatory medicines, should be the mainstay for discharge analgesia.

If opioid or atypical opioids are considered for discharge, in addition to simple analgesia, they should be prescribed in short-acting form, and in limited amounts with the option for early review by the surgeon or general practitioner if further scripts are required. Initiation of long-acting opioid drugs should be avoided in the perioperative period as they can lead to tolerance, dependency and overdose with risk of death.

In addition, the surgeon should be aware of the medicolegal implications for discharge of a patient using short-acting opioids post-operatively, including sedation and cognitive impairment. Patients must be counselled about the risks such drugs may cause when operating machinery or driving.

Early post-operative review of patients should be encouraged if they are requiring excessive analgesia. The causes for this may include surgical complications, including haematoma or infection, but equally may point to underlying or unrecognised psychosocial comorbidities, pre-existing chronic

pain or drug dependency. Early intervention for such conditions may obviate the progression to chronic pain.

THE POST-OPERATIVE MANAGEMENT OF PAIN FOR SURGEONS

The post-operative visit allows for the surgeon to review the results from surgery, assess for post-operative pain and further optimise pain management and functional recovery. Although most post-operative visits are scheduled for six weeks, early identification of post-operative problems, with earlier review if problems are identified, may resolve problems before they develop further.

For some patients, persistent post-operative pain may arise. Like any complication, a blaming or dismissive approach will not be helpful and often compounds the problem. As with other surgical complications, we will not always be able to avoid the adverse outcome of persistent post-operative pain. What is important is to recognise and acknowledge the problem and consider options for appropriate management. The surgeon, who has worked hard to relieve the patient's pain, might feel disappointed that it hasn't occurred. But this should not impede further assessment and the consideration of other options to assist the patient.

It is important to recognise that the onset of persistent post-operative pain may be delayed. For example, nerve injury may occur during surgery and, following initial numbness, neuropathic pain develops at a later stage. In this situation, the patient should be thoroughly debriefed about the potential for post-operative pain and early referral made to appropriate specialists, or services, to ensure best treatment. Patient concerns should not be dismissed. Appropriate professional listening, followed by an acknowledgement that the surgeon understands the problem and will try to help, may reduce the perception that the patient has been 'abandoned' by their surgeon.

A second opinion might also be helpful in this situation and should be readily offered to the patient. If further surgery is deemed unnecessary, but pain symptoms persist, early referral to a specialist pain medicine physician should be considered. Importantly, the surgeon should work with the pain physician and team to maintain continuity of care.

Further surgeries should be approached cautiously in the patient whose symptoms unexpectedly fail to resolve, or even deteriorate, following initial surgery. A considered examination of the reason why this did not occur should take place before proceeding further. This is also important from a medicolegal perspective.

Opioid medication should no longer be necessary at the time of the first post-operative review. If opioid medication is continuing, potential explanations should be explored. A small cohort of patients (3.9%)⁷ will develop new opioid dependency following surgery and specialised referral should be arranged for this.

The presence of significant psychosocial comorbidities may become more apparent in the post-operative phase in patients who have had a technically good result from surgery, but have persistent vague symptoms. Suggestion of the potential benefits of early psychology input may be helpful to patients and their general practitioners.

Finally, cooperation with the referring general practitioner in all aspects of post-operative care and pain management will ensure patients get the best outcomes from care.

CLINICAL EVIDENCE FOR PAIN PROCEDURES, ETHICS AND FINANCIAL CONSIDERATIONS

Surgical decision-making about the benefit of surgery for patients with pain is complex and influenced by many variables, including the perceived evidence of the benefit of a procedure, principles of ethics and financial considerations.

While a detailed discussion on this complex area is not possible here and the RACS Code of Conduct⁸ specifies the ethical and professional duties of the surgeon, some general observations about clinical evidence of surgical procedures for pain and financial considerations can be made.

The clinical evidence for the benefit of surgical procedures to relieve pain should be reviewed carefully, regularly and critically by all surgeons. The available clinical evidence can be controversial and vary enormously in quality. In the contemporary surgical literature, there have been relatively few studies with placebo or sham-control arms investigating the benefit of the majority of surgical interventions. Many procedures are believed by surgeons, and patients alike, to be effective. This is despite weak supporting evidence. In some circumstances, studies from earlier eras, conducted without controls or basic standards of academic rigor, are still quoted as demonstrating benefit in the absence of high-quality contemporary studies.⁹

One reason for this dilemma, although not insuperable, is the challenge of setting up studies to evaluate the benefit of surgery compared to non-surgical treatments. Most studies do not control for the powerful effect of placebo with surgical intervention, the natural history of pain complaints, regression to the mean or other variables.

It is the responsibility of all surgeons to review the outcomes of surgery they perform on an ongoing basis. This should, ideally, be supplemented with patient-reported outcome data. Surgeons should also be encouraged to participate in trials to answer these questions better. Procedures with poor outcomes, or outcomes that are no better than sham or placebo-controlled options, should be abandoned.

Needless to say, the presentation of the evidence of benefit, or lack of benefit of a particular surgery, should be incorporated into an informed discussion with the patient.

Financial considerations to perform surgery for relief of pain can represent a potential conflict of interest and should be considered as such. These conflicts can be further exacerbated by the demands of desperate patients, or a perceived lack of other treatment options by the patient and surgeon. A patient who says, "I can't go on like this doctor," may well express their frustration about the management of their pain, but it does not imply that a surgical procedure will make the situation any better.

The financial influence of the medical industry, with the development of novel devices and technologies that may claim to benefit the patient, also needs to be scrutinised carefully by surgeons. These influences are pervasive and real and, rather than deny them, surgeons should acknowledge their existence and manage them transparently.¹⁰

The combination of limited clinical evidence and financial conflict of interest can be cumulative.

In conclusion, the surgeon must carefully weigh the perceived benefits of surgery for pain relief (acute pain is much more likely to respond than chronic pain) with the risks of persistent or worse pain within the limitations of imperfect clinical evidence, patient expectations, clinical ethics and conflicts of interest.

This clinical judgement is arguably the most difficult task of the surgeon, but can be improved by comprehensive assessment, multidisciplinary input, education, experience and regular auditing – including self reflection.

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- ¹⁰ Schofferman J. The medical-industrial complex, professional medical associations, and continuing medical education. *Pain Med*. 2011;12(12):1713–19.