13.7 Specific considerations in different surgical disciplines

13.7.1 General surgery

Local anaesthesia and regional anaesthesia, especially epidural analgesia after laparotomy, should be offered whenever possible.

13.7.2 Vascular surgery

Patients presenting for vascular surgery often suffer from several comorbidities, including hypertension, ischaemic heart disease, lung disease, renal impairment and diabetes mellitus. Hence, the use of NSAIDs, including coxibs, is discouraged. Opioid narcotics and paracetamol are generally safe in the majority of vascular patients. Regional, spinal and epidural anaesthesia are also encouraged in these patients, in that the concomitant sympathectomy causes vasodilatation and improves peripheral perfusion.

13.7.3 Cardiothoracic surgery

Postoperative cardiac surgery patients are usually admitted to an ICU. Powerful, titratable narcotics, such as fentanyl derivatives or morphine, are routinely used initially. Paracetamol is safe and should be used.

NSAIDs are effective analgesics after thoracic surgery but are contraindicated after cardiac surgery and in anticoagulated patients. Cardiac output and renal function are often compromised after cardiac surgery, which preclude the use of NSAIDs.

Neuraxial blockade is useful but contraindicated when anticoagulants or therapeutic antiplatelet agents are used.

13.7.4 Neurosurgery

Pain control after neurosurgery is managed in a similar manner than in other scenarios, that is, with a multimodal approach. Issues that warrant special mention are that accurate neurological assessments and level-of-consciousness monitoring may be severely impaired by the sedative adverse effects of opioid narcotics. Sedation may be desirable in certain circumstances (e.g. reaction to external stimuli can increase ICP). On the other hand, sedation can cause hypotension, which can compromise cerebral perfusion pressure.

Adverse effects of opioids may be problematic. Opioids increase vomiting in patients with intracerebral tumours and/or raised ICP. Patients with spinal cord lesions often suffer from constipation (due to spinal cord injury, autonomic dysfunction and prolonged bed rest), which is exacerbated by opioids.

NSAIDs should be used cautiously in neurosurgical patients, since postoperative surgical haemorrhage may be disastrous. Furthermore, there is a high incidence of peptic ulceration due to chronic NSAID usage (spinal patients), stress ulceration (head injury patients), irregular enteral feeding and concomitant steroid therapy (patients with raised ICP). NSAIDs should be used cautiously in patients at risk of dehydration, including diuretic therapy for raised ICP and diabetes insipidus.

13.7.5 Orthopaedic surgery

Orthopaedic procedures are particularly painful procedures, and pain control is vital to allow for early mobilisation, prevent complications (DVT, PE, contractures and pressure sores) and decrease chronic pain syndromes. Opioids are usually prescribed, either orally or using PCA. NSAID therapy is efficacious in these patients, but needs to be used judiciously.

Orthopaedic patients often take NSAIDs chronically. Between 1% and 5% of these patients run the risk of postoperative GI bleeding. Therefore, a history of GI ulceration must be excluded. If NSAIDs are prescribed postoperatively, especially after major orthopaedic procedures, a PPI, misoprostol or ranitidine should also be prescribed.

If a patient is admitted to an HCU or the ICU postoperatively, a low-dose ketamine is morphine-sparing. Ketamine 0.12 mg/kg/h IVI is effective after hip arthroplasty. It facilitates rehabilitation and decreased pain for up to 6 months after surgery.

The intra-articular instillation of opioids, LAs and corticosteroids in joint surgery, day case arthroscopy and joint injury is controversial, and evidence is conflicting. There is evidence that supports intra-articular opioid instillation after some orthopaedic procedures.

Regional and neuraxial blocks are particularly useful in the early postoperative period. Routine postoperative prophylactic anticoagulation does not contraindicate epidural analgesia.