Summary

The hip surgery patients present unique challenges to the anaesthiologist. Their advanced age and co-morbidities make them particularly prone to complications of anaesthesia. Understanding the preoperative, intraoperative and postoperative risk factors and close communication with the orthopedic surgery team will help identify potential problems and hopefully identify strategies for prevention. Life-threatening complications such as airway obstruction and emboli can be anticipated and prevented by understanding the risk factors commonly associated with patients undergoing major hip procedures.

An anaesthetic plan should be formulated that will optimally accommodate all aspects of the patient and planned surgical procedure (primary total hip replacement versus complex revision total hip replacement). Assessing patients preoperatively includes a pertinent history, a physical examination, and any indicated laboratory tests.

Hip surgery can be performed under general, spinal or epidural anaesthesia, and a combination of techniques is often used. An anaesthetic plan should be made for each patient taking account of the patient's physiological state, including any medical and surgical illnesses, the planned procedure, drug sensitivities, previous anaesthetic experiences, and psychological makeup.

Although clinical perceptions and theoretical considerations suggest regional anaesthesia should be safer than general anaesthesia, current outcome studies have determined that there is no difference in mortality and major morbidity between the two in most patient populations. Regional anaesthesia may still prove superior to general anaesthesia if the “right” patient populations or “right” endpoints are identified for comparison. It is becoming clear that the real issue for debate is not whether regional or general anaesthesia is better but, rather, what is the optimal, overall management for the patient during the perioperative period.

Major hip procedures are associated with significant blood loss. Although the transfusion of allogeneic blood is an effective solution, this intervention is now considered undesirable by many patients and health care providers. A plan to minimize allogeneic transfusion should be established. This may include with predonation of autologous blood, preoperative erythropoietin, intraoperative hemodilution, induced hypotension, conduction anesthesia, use of a cell saver, preservation of normothermia, or by tolerating lower hematocrit values postoperatively

(i.e., lowering the so-called transfusion trigger) and the use of antifibrinolytic agents.

Bone cement plays a major role in arthroplasty of the hip. Insertion of this cement is associated with sudden onset of hypotension in some patients. Adequate hydration and maximizing inspired oxygen concentration minimize the hypotension and hypoxemia that can accompany cementing of the prosthesis.

Fat embolism syndrome occurs most commonly in hip surgery. It is a disease of respiratory system whose treatment is basically supportive.

Deep vein thrombosis and pulmonary embolism are major contributors to morbidity and mortality in hip surgery patients, and thromboprophylaxis is of paramount importance.

Hip surgery patients more than likely will have postoperative surgical pain. Effective postoperative analgesia should include paracetamol, nonsteroidal anti-inflammatory drugs, opiates and nontraditional medications as dexmedetomidine (a sedative analgesic) and ketamine to provide pain relief. Regional analgesia with epidural infusions or peripheral blockade reduces narcotic requirements, provides better analgesia, reduces catabolism, and results in improved rates of rehabilitation after hip surgery.