

Perioperative pain management in total hip and knee arthroplasty

Pain is the fifth vital sign. The main fear of patients undergoing surgery is pain, which in 50% of cases is treated inappropriately, and in 80% of cases patients have some degree of pain.

Total arthroplasty is a painful orthopedic surgical procedure. The postoperative outcome in the case of total arthroplasties may be compromised by the onset of pain, when it affects both the onset of medical recovery procedures and the onset of patient mobilization. When pain is inadequately controlled, the cost of care and length of hospitalization increase proportionately, and wound healing and overall recovery are also slowed. At the same time, the risk of cardiac arrest, pneumonia, inability to sleep, cognitive impairment and venous thromboembolism is increased. Chronic pain can be induced by the patient's dissatisfaction and demoralization by the appearance of severe pain immediately postoperatively.

Pain caused by arthroplasty, especially total knee arthroplasty, remains imperfectly controlled. In the past, orthopedic surgeons have sought new and effective strategies to combat pain.

Multimodal pain management is a broad and comprehensive term. A more effective local anesthetic was injected into the periarticular region of the knee to combat pain more effectively. It is cited in studies that periarticular infiltration of anesthetic substances leads to decreased pain.

Opioid use was reduced by injecting levobupivacaine into the knee joint, but without reducing pain scores. In the first 48 hours postoperatively, increased morphine consumption was decreased by periarticular injection of ropivacaine, ketorolac, and epinephrine. Other recently studied pain control strategies include continuous injection of a local anesthetic or various anesthetic agents through a permanent periarticular catheter placed postoperatively.

Regarding the development and delivery of analgesic drugs, the following examples of advances have been made in the past years:

- liposomal delivery of morphine in the epidural space;
- intravenous administration of analgesics and nonsteroidal anti-inflammatory drugs;
- fentanyl transcutaneous administration through a small electronic device;
- intranasal administration of analgesics;
- local anesthetics.

The level of pain after surgery (arthroplasty) can be reduced by avoiding excessive dissection of soft tissues (with a shift to approaches that protect tissues) and better patient preparation for postoperative recovery.

From a multimodal pain management perspective, the most important advancement is the identification of inadequate pain management after arthroplasty, which is no longer accepted today.

Identifying pain as a measure of "quality" and emphasizing patient satisfaction with treatment episodes leads to the need/ obligation to manage future pain management more effectively.

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