

## **Operative Techniques and Peri-operative Procedures Influencing Postoperative Pain Following Total Hip Arthroplasty**

Christian Simanski and Barrie Fischer, on behalf of the PROSPECT (PROcedure-SPECific postoperative pain management) Working Group

**Background:** Total hip arthroplasty (THA) is a common surgical procedure performed to improve mobility and quality of life. Adequate pain relief is essential in the postoperative period to enable rapid ambulation and initiation of physiotherapy. The use of surgical drains, prosthesis design and composition of implants can influence postoperative pain. This systematic review examines the influence of operative techniques and peri-operative procedures on postoperative pain.

**Methods:** systematic review (1966–August 2004) using the Cochrane protocol – selection of randomised studies in THA reporting postoperative pain scores (e.g. VAS). Collection of evidence from other orthopaedic procedures and clinical practice. Recommendations: PROSPECT consensus, based on the evidence.

**Results:** Studies from systematic review (two studies): modified Hardinge approach vs. transtrochanteric lateral approach were similar for VAS, function and range of mobility scores. Epidural catheter insertion with the tip of the Tuohy needle rotated 45 degrees toward the operative side vs. conventional position reduced postoperative local anaesthetic consumption, but not VAS scores.

Studies from other orthopaedic procedures (7 studies including review papers): cemented vs. non-cemented prostheses for hip fracture demonstrated no short-term analgesic benefit (3 to 6 months), but better long-term outcomes including lower pain scores (at one year) and a lower risk of failure to regain mobility. In clinical practice, non-cemented prostheses have a longer life and are easier to change, if necessary. Drained vs. un-drained wounds were similar for postoperative pain, range of movement, function, hospital stay and swelling of the limb, but were associated with a greater incidence of infection, higher degree of discomfort, and fear of drain extraction. Bipolar vs. unipolar hemiarthroplasty were similar for postoperative pain.

**Conclusions:** It is recommended that surgical requirements rather than pain management should be the main consideration in choosing the surgical technique. Different surgical techniques tested in THA did not affect pain scores. In patients with a hip fracture, cemented prostheses had better long-term analgesic and mobility outcomes. However, factors such as patient age and comorbidities can influence the choice of the prosthesis type. Surgical drains are not recommended because they are associated with increased incidence of infection, a higher degree of patient discomfort and anxiety and in addition they do not confer a benefit for pain scores and function. Further developments in operative techniques for THA include the mini-incision, which is being investigated for advantages including less blood loss, less pain and shorter hospital stay.