

Comparison in Anesthetic Types in the Setting of Total Hip Arthroplasty: An ACS-NSQIP Propensity Score Matching Analysis 2008-2016

A Total hip arthroplasty (THA) is a major orthopedic procedure in the US with significant perioperative and postoperative morbidity. Spinal anesthesia (SA) has been the preferred choice over general anesthesia (GA) in THA. Current research is still lacking regarding the impact of epidural anesthesia (EA) in postoperative outcomes when compared to SA in the setting of THA.

The American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) 2008-2016 database was queried. Each procedure was then allocated into isolated SA or EA groups. One-to-one propensity score matching, controlling for estimated probability of morbidity, age, and gender, was performed. Patient demographics, comorbidities, and 30-day postoperative outcomes were collected. Outcomes were compared between EA and SA.

Between 2008 and 2016, 143,752 patients underwent THA. 561 patients were given isolated EA and 41,969 were given isolated SA. After propensity matching, 375 patients in each group were selected. The average age was 62.8 years, 336 were male and 414 were female. 391 had hypertension, 153 had anemia, 84 had diabetes, and 94 were smokers. 103 experienced adverse events, 92 experienced any kind of complications with 79 experiencing wound complications. Patients given EA were more likely to have increased operative time compared to those given SA (108.6 vs 84.4, $p < 0.001$). Compared to SA, EA was associated with increased adverse events (66, 17.6% vs 37, 9.9%, $p = 0.002$), any postoperative complications (60 vs 32, $p = 0.003$), and wound complications (54 vs 25, $p < 0.001$), particularly bleeding requiring transfusions (52 vs 21, $p < 0.001$).

Our study showed that SA is more appropriate for patients undergoing THA compared to EA. Compared to SA, EA exhibited increased risks of adverse events, wound complications, and increased operative time. The results suggested that both SA and EA offered advantages over GA. However, SA remains the preferred choice in the setting of THA.