Rate of Lateral Femoral Cutaneous Neuropraxia Post Total Hip Arthroplasty – Does approach and direction of incision matter?

Brent Benavides, Riley Cousins, Celine Guirguis, Isabel Horton, Paul R Kim, Wade Travis Gofton, Simon Garceau, Paul E Beaule, George Grammatopoulos

INTRODUCTION: Lateral Femoral Cutaneous nerve (LFCN) injury is a recognized complication of the anterior approach (AA) to total hip arthroplasty (THA). The transverse (bikini) incision (B-AA) has gained popularity for its aesthetic and wound-healing advantages over the traditional vertical incision (V-AA), though concerns remain regarding increased risk of LFCN neuropraxia. This study aims to evaluate the long-term incidence of LFCN neuropraxia and patient-reported skin cosmesis across different surgical approaches. Additionally, we explore the relationship between LFCN symptoms and hip-specific functional outcomes.

METHODS: This is an IRB-approved, retrospective cohort study of 500 patients who underwent primary THA by one of six fellowship-trained arthroplasty surgeons. Patients were surveyed with validated patient-reported outcome measures to assess hip function (Oxford Hip Score, OHS), neuropathic symptoms (DN-4), and scar appearance (POSAS). 55% of participants had a V-AA, 17% B-AA, 23% posterior approach (PA), and 6% lateral approach (LA). A DN-4 score greater than 4 was considered indicative of chronic neuropathic pain.

RESULTS: Mean scores were 41±9 for OHS, 1.3±1.9 for DN-4, and 4±3 for POSAS. Weak associations were observed between DN-4 and OHS (rho=0.2, p=0.03) and DN-4 and POSAS (rho=-0.2, p<0.001). 62% of patients had a DN-4 score of zero. Chronic neuropathic thigh pain was reported in 8% of patients. The incidence of neuropathic pain was highest with the V-AA (12%), compared to 7% with B-AA and 5% with LA/PA.

DISCUSSION AND CONCLUSION: LFCN neuropathy can occur with any approach to the hip but is more prevalent with the AA. The presence in the PA/LA approach is likely due to the pressure effects by the bolsters used in positioning. The B-AA is not associated with greater LFCN neuropraxia and should be strongly considered to minimize wound incisions with the AA. There is very weak correlation between neuropathy and hip function.