

THA Through the Posterior Approach After Previous Acetabular ORIF Does Not Pose a Risk to the Sciatic Nerve

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Purpose: Conversion total hip arthroplasty (THA) after previous acetabular fracture open reduction and internal fixation (ORIF) has been reported to have higher rates of dislocation, infection, and sciatic nerve injury than THA for primary osteoarthritis. This abstract details the results of specific protocol to protect the sciatic nerve during posterior approach to the hip for THA after previous acetabular ORIF. The hypothesis was that using the “inside-out” method of posterior column exposure for plate and screw removal would result in a low rate of sciatic nerve injury.

Methods: This was a retrospective review of a prospective database of all conversion THAs after previous acetabular ORIF performed by a single surgeon over a 5-year period from 2010 to 2015. The inclusion criterion was conversion THA for a diagnosis of posttraumatic osteoarthritis. In cases with posterior wall or column plates, a posterior approach to the hip was utilized. If the patient had preconversion THA sciatic nerve deficit, the nerve was identified beneath the gluteus maximus tendon and traced proximally, releasing the scar tissue from the lateral aspect of the nerve. After resection of the femoral head, the hip was extended and knee flexed and the soft tissues were cleared from the posterior wall and column to expose plates and screws that needed to be removed. This soft-tissue dissection started inside the acetabulum and proceeded up and over the acetabular rim and down onto the ischium and posterior column in a subperiosteal fashion, the “inside-out” exposure. Plates and screws were then removed under direct visualization.

Results: During this time period, 54 patients underwent conversion THA for posttraumatic osteoarthritis after acetabular ORIF through a posterior approach. Average follow-up was 10 months (range, 1 month-4 years). 16 patients (29.6%) had preoperative sciatic nerve motor deficits. No patients had a decrease in sciatic nerve motor grade after conversion THA. No patients had decrease in peroneal or tibial nerve sensation or new onset of paresthesias after conversion THA. The deep infection rate in this series was 6.6 %. Three patients had a postoperative dislocation (4.9%).

Conclusion: Conversion THA performed through a posterior approach to remove implants and place the hip prosthesis using an “inside-out” exposure of the bone did not result in sciatic nerve injuries in contrast to prior reports. However, in keeping with prior literature, dislocation and infection were present at increased rates in these challenging patients. The “inside-out” approach is a technique that may have utility in preventing nerve injury, at least addressing one of the 3 major complication sources in these difficult patients.