Sciatic Nerve Palsy Rates for Prone Acetabular Fixation Is Low for Surgeons Exclusively Using This Approach

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Purpose: Recent work has reported a substantially higher rate of iatrogenic sciatic nerve palsy associated with acetabular fracture fixation in the prone vs the lateral position. We hypothesized that surgeons who perform all posterior procedures prone may have lower rates than reported in recent studies with multiple surgeons who use numerous approaches.

Methods: We performed a consecutive retrospective study of patients with acetabular fractures fixed in the prone position at 5 centers. Injury patterns, presentation nerve function, immediate postoperative nerve function, and resolution of any iatrogenic nerve injuries were documented. Iatrogenic injury was defined as any change in the motor or sensory function of any portion of the sciatic nerve postoperatively. For patients presenting with a nerve injury, any degradation of strength or any sensory change from preoperatively to postoperatively was considered iatrogenic.

Results: We included 454 consecutive patients (311 male:143 female) age 16-102 years (average 37). The hip was extended and knee flexed throughout all procedures. There were 209 simple and 245 associated patterns. The most common fracture types were posterior wall (PW) (189) and transverse (TR)/TR+PW (165). 31 patients (6.8%) had both motor and sensory, 8 patients had sensory only, and 16 had motor only nerve injuries upon presentation. Only 7 (1.5%) iatrogenic nerve injuries occurred, all in patients presenting without any neurologic deficit, and all were incomplete. The injuries occurred in 1 each PW, TR, TR+PW fractures, and 2 each "T" and posterior column (PC)+PW fractures. There was no difference in age, surgical time, or technique reported for those with and without iatrogenic injury. Six resolved completely by discharge and the seventh by 4 months. No patients initially presenting with nerve injury had an increase in their deficit; all had nerve exploration and release. 10 of the 31 patients with both sensory and motor nerve had complete resolution.

Conclusion: In this series of patients treated by surgeons who exclusively use the prone position for posterior approaches to the acetabulum, the risk of iatrogenic sciatic nerve injury was 1.5%. Prone positioning does not result in a high rate of iatrogenic nerve injury when performed with the hip extended and the knee flexed by surgeons who use this position routinely.