

RATES OF IMPLANT RELATED FRACTURES AFTER PROXIMAL FEMORAL OSTEOTOMIES FOR NEUROMUSCULAR HIP DYSPLASIA

McGraw-Heinrich, Jessica ¹, Matthew Morones², Ryan Moore², Rachel Silverstein³, Scott Rosenfeld³

¹ Baylor College of Medicine, Department of Texas Childrens' Hospital

² Baylor College of Medicine, Surgery, Orthopaedic Surgery

³ Texas Children's Hospital, Surgery, Orthopaedic Surgery

Keywords: periprosthetic fracture; proximal femur osteotomy; coxa valga; neuromuscular hip dysplasia

Background: Neuromuscular hip dysplasia is frequently associated with increased femoral anteversion and coxa valga, which can require corrective proximal femoral osteotomies (PFO) during surgical treatment. Locking plates and blade plates are commonly used to fix PFOs, but it is controversial whether implants should be routinely removed. To further evaluate implant related fracture rates, we present a case series of periprosthetic and post-hardware removal femur fractures in patients with neuromuscular hip dysplasia that have undergone prior PFO.

Materials/Methods: We retrospectively reviewed patients <18 years surgically treated at a tertiary children's hospital for neuromuscular hip dysplasia between 1/1/2010 and 12/31/2020 who had a PFO procedure. We identified patients sustaining postoperative femur fractures. We further evaluated patients that underwent subsequent hardware removal and identified those who sustained a femur fracture after hardware removal. Information regarding patient demographics, fracture characteristics, and surgical procedures were collected. Descriptive statistical analysis was conducted.

Results: A total of 233 patients underwent PFO for neuromuscular hip dysplasia. There were 8 patients (3.43%) sustaining 9 periprosthetic femur fractures. Approximately 36.1% (84/233) of the study group underwent routine hardware removal during their follow up. Of these, 4/84 (4.76%) sustained a femur fracture after implant removal. Rates of periprosthetic and post-hardware removal fractures were not significantly different ($p=0.58$). Periprosthetic fractures were usually subtrochanteric (7/9, 77.78%) and occurred an average of 1.93 years after the index procedure. All fractures after hardware removal occurred in the femoral shaft distant from screw holes of removed implants at an average time of 1.18 years after hardware removal suggesting these fractures were not directly related to hardware removal

Conclusions: Fracture after PFO for neuromuscular hip dysplasia is rare. Our results can be used by surgeons to counsel patient families about the rate of these complications and aid in the decision making process for pursuing implant removal after PFO.

Images / Graph / Table: No image uploaded