Hospital Transfer and Delayed Reduction of Traumatic Hip Dislocations

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Purpose: Delay in reduction of hip dislocations is a known risk factor for the development of osteonecrosis (ON) of the femoral head. The purpose of this retrospective study was to investigate the effect of transfer from an outside hospital on time to reduction of traumatic hip dislocations. We hypothesized that transferred patients experience a delay in hip reduction and subsequently experience higher rates of ON, posttraumatic arthritis (PTA), and secondary hip surgery.

Methods: All traumatic hip dislocations from a Level I trauma center from 2007 to 2020 were retrospectively reviewed. Of 300 patients reviewed, 50 met inclusion criteria. Exclusion criteria included less than 6 months of radiographic follow-up, prosthetic hip dislocations, skeletal immaturity, and recurrent dislocations.

Results: The average age of the cohort was 44 years (standard deviation = 14.8) of age. Patients had an average of 20.5 months of clinical follow-up. There were 48 posterior and 2 anterior dislocations. Dislocations were associated with 39 acetabulum-only fractures, 3 femoral head-only fractures, and 5 had fractures of both the head and acetabulum. Three dislocations had no associated fracture. Of the 50 patients, 37 were transferred from an outside hospital (OSH). Only 3 arrived with a reduced hip joint, and only 7 attempts at reduction were made at OSHs. The average time to reduction in transferred patients was 15:04 (hrs:min) compared with 6:33 for those presenting directly to our tertiary care center ($P = 0.07$). Seven patients (13.7%) developed ON at an average of 10 months following their injuries, 6 of whom were transferred from OSH. Patients who developed ON had an average time to reduction of 40:46 in comparison with 8:19 in patients who did not go on to develop ON ($P = 0.001$). Patients who developed PTA had an average time to reduction of 16:23 compared to 8:22 in patients who did not ($P = 0.22$). Of 28 patients who developed PTA, 24 (86%) were transferred from an OSH. 12 secondary surgeries were required after the index operation, including 9 total hip arthroplasties (THAs). Ten of these patients requiring a second surgery were transferred from OSHs. Patients requiring a secondary surgery had a time to reduction of 23:58 in comparison with 9:21 ($P = 0.43$).

Conclusion: Patients sustaining traumatic hip dislocations who were transferred to our Level I trauma center from an OSH experienced a delay in hip reduction. Delay in time to reduction was associated with a higher risk of ON. Patients with PTA of the hip and a need for secondary surgery experienced delay in reduction; however the sample size of these subsets limits the ability to make conclusions in these groups. A protocol for treatment and transfer of traumatic hip dislocations at transferring centers may be warranted to improve patient outcomes.