

Safety of Surgical Hip Dislocation in Femoral Head Fracture-Dislocation

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Purpose: Although surgical hip dislocation (SHD) has been used for open reduction of femoral head fracture- dislocation (FHFD), viability of femoral head after SHD has not yet been studied. We evaluated the viability of femoral head with a radio-scintigraphy or MRI and the functional outcome, in patients who underwent SHD in FHFD.

Methods: 35 patients with FHFD had underwent SHD in our institution (from 2009 to 2017). We evaluated one of single-photon emission CT (SPECT), bone scan, or MRI to find any clues of avascular necrosis (AVN), at postoperative 30 weeks. Exclusion of AVN was defined as no evidence of AVN on plain radiograph at postoperative ≥ 1 year with normal radio-scintigraphy or MRI, or no evidence of AVN on plain radiograph at postoperative ≥ 2 years without radio-scintigraphy or MRI. Excluding 3 cases, 32 out of 35 cases were included (mean follow-up 145.6 weeks; mean age, 36.9 years). There were 9 cases of head fracture alone, 2 cases with femoral neck fracture, 20 cases with acetabular fracture, and 1 case with both acetabular fracture and femoral neck fracture. In Pipkin's classification, there were 4 type I, 5 type II, 2 type III, and 21 type IV. Radiological outcome (using Matta's grading) and Harris hip score (HSS) were evaluated at the latest follow-up.

Results: Two of 32 cases showed AVN (1 Pipkin type III, 1 type IV), which had displaced femoral neck fracture. The incidence of AVN did not depend on the type of Pipkin classification ($P = 0.748$). Incidence of AVN was significantly increased with femoral neck fracture ($P = 0.006$). According to Matta's grading, 8 (25%) were excellent, 18 (56.25%) were good, 5 (15.625%) were fair, and 1 (3.125%) was poor. The mean HSS was 81.53 and significantly lower in AVN group ($P = 0.004$).

Conclusion: SHD in FHFD is a safe and effective procedure to achieve satisfactory radiological and functional outcomes unless accompanying femoral neck fracture.