Femoral Head Fracture: Long-Term Outcomes of 37 Hips

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Introduction

Our study aimed **to assess (1) the survivorship and predictors following joint-preserving management of femoral head fracture (FHF), (2) to compare outcomes of primary treatments, and (3) to compare outcomes of delayed THA (dTHA) to acute THA (aTHA).**

Materials and Methods

A retrospective study of a consecutive series of patients treated for FHF with minimum 2-year follow-up in a tertiary referral centre from 2009 through 2022 was performed. 37 hips (36 patients) were identified for inclusion, 6 hips of which were excluded as they underwent acute THA, leaving 31 hips (30 patients) for the survival analysis. Conversion to THA was identified as the endpoint for survival analysis. Prospectively-collected functional outcomes included the EuroQol questionnaire (EQ5D5L) and Oxford Hip Score (OHS). Clinical, radiographic, and complication data were collected. Kaplan-Meier survivorship and Cox proportional hazards modeling were used to identify predictors for failure.

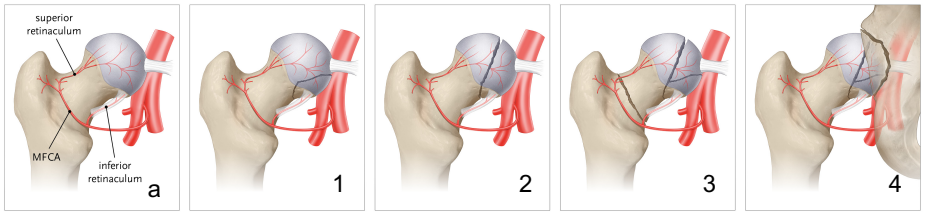

Fig. 1 Vascularisation of the FH from the deep branch of the medial femoral circumflex artery (MFCA) (a), and the 4 stages of FHF according to Pipkin's classification (from 1 to 4).

Results

37 hips with mean follow-up of 6,4 years (range 2-16) were analyzed: 20 fixations, 9 excisions, 2 conservative treatments and 6 aTHA. Joint-preserving survivorship was 67% (95% CI 48-95) at 10 years. Preexisting "severe" osteoarthritis was the only predictor for failure (p=0.017 HR=29.5). Fixation was protective (p=0.034 HR=0.01) when compared to excision or conservative treatment. Osteonecrosis (76% vs 0%, p<0.001) and "severe" osteoarthritis (63% vs 21.7%, p=0.009) were more common in the failed group. OHS (45 vs 16; p=0.006), EQ5D5L mobility (p<0.001), self-care (p=0.005), pain/discomfort (p<0.001), and visual analog scale (80 vs 34; p<0.001) were significantly better in hips that survived. OHS and EQ5D5L were similar between dTHA and aTHA.

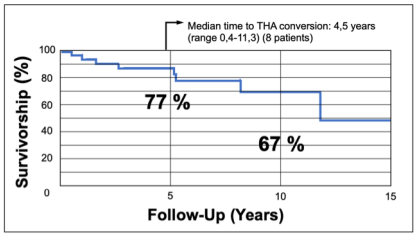

Fig. 2 Overall survivorship.

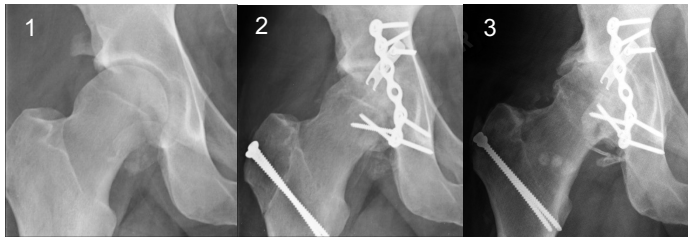

Fig. 3 FHF Pipkin 4 in a 30-year old man (1), treated by FH and posterior wall fixation through surgical hip dislocation (2). 15 years post-operative follow-up (3).

Conclusion

At 10-year follow-up, 2 out of 3 FHF treated with joint preservation survived, with those undergoing fixation being least likely to fail. We did not detect any difference in outcome scores between patients undergoing acute THA, and those who subsequently underwent THA for joint preserving treatment failure.