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Patient based outcome after in situ percutaneous fixation of slipped upper femoral epiphysis

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Title of Project: Patient based outcome after in situ percutaneous fixation of slipped upper femoral epiphysis.

Abstract

Background:

Percutaneous *in situ* fixation with a single screw is regarded as safe and remains the gold standard of treatment for Slipped Upper Femoral Epiphysis (SUFE). However, reliance is placed on subsequent remodelling of the femoral neck. Healing in a non-anatomic position predisposes the patient to femoroacetabular impingement (FAI) and degenerative arthritis of the hip. Consequently, some surgeons advocate for surgical hip dislocation and reduction of severe acute SUFE. The aim of this study was to assess patient-based outcomes after *in situ* pinning. The hypothesis is that our patients remodel adequately and function well after *in situ* pinning.

Methods:

Twenty-six patients (36 hips) with different severity of SUFE that were treated at our institution between January 2011 and December 2016 were included in our retrospective study. Patients with less than two years' follow-up and those without prior radiographs were excluded. Hips were radiologically classified into three groups; mild SUFE (13 hips), moderate SUFE (12 hips), severe SUFE (11 hips) and clinically into stable (31 hips) and unstable SUFE (5 hips). Outcome measures included modified Harris Hip Score and Visual Analogue Pain Score.

Results:

There were no cases of avascular necrosis (0%) in both mild and moderate stable slips treated with *in situ* pinning. Only one case of avascular necrosis (AVN) was reported out of eleven severe slips (9.1%). This is significantly lower than the results of the previous studies that evaluated *in situ* pinning in severe slips. In addition, there was one case of FAI that developed in one of the eleven slips (9.1%). There were no cases of chondrolysis reported. The overall complication rate for AVN and FAI after *in situ* pinning was 2.78%.

Conclusion

Our results suggest that in our population *in situ* percutaneous pinning is safe with low complication rates. High patient satisfaction in terms of pain and function suggests that remodelling is effective, even for severe slips.