

Title of Presentation:

Risk Factors Determining the Outcomes in Femoral Neck Fractures Treated with Internal Fixation

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Learning Objectives (After attending this session, the attendee should be able to):

- grasp the importance of perfect anatomic reduction in femoral neck fracture management

PURPOSE:

Femoral neck fractures are one of the most common fractures and preservation of the femoral head is a major challenge in these fractures. So we decided to study the functional outcomes of the femoral neck fractures where the femoral head has been preserved.

METHODS:

Retrospective review of 108 patients treated at a level-1 trauma centre for femoral neck fractures in whom the femoral head has been conserved and with a minimum follow-up of 1 year was done. The patients with femoral neck fractures treated with cannulated screws, dynamic hip screws and reconstruction nails were identified and included in the study. Preoperative displacement, post-operative displacement, pauwels angle, gardens fracture type and time to fixation was gathered from the patient notes and correlated with the outcomes of non-union and avascular necrosis (AVN).

RESULTS:

The mean follow-up was 42 months (12-190 months). 5(4.6%) patients developed non-union at the end of follow-up. Preoperative displacement, postoperative displacement, gardens fracture type and time to fixation was significantly associated with the final outcome of non-union ($p < 0.05$). 16 (14.8%) patients developed AVN at the end of follow-up. Preoperative displacement, postoperative displacement, gardens fracture type was significantly associated with the final outcome of AVN ($p < 0.05$). Pauwels angle and age did not significantly affect either AVN or non-union. Out of 35 patients with perfect anatomic reduction only 1 (2.8%) and 2 (5.6%) patients developed non-union and AVN respectively. When the post-operative displacement (in mm) were compartmentalized into 0-5, 6-10, 11-15, >15 the incidence rate of non-union were 1.2%, 8.3%, 11%, 40% respectively. Similarly when the post-operative displacement (in mm) were compartmentalized into 0-5, 6-10, 11-15, >15 the incidence rate of AVN were 6%, 8.3%, 55% and 100% respectively.

CONCLUSION:

Perfect post-operative anatomic reduction reduces the incidence of AVN and non-union in femoral neck fractures where the head has been conserved. Higher post-operative displacement increases the incidence of both non-union and AVN.