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AVN and complication rate following Intracapsular fracture Neck of Femur fixation in the under 60s. – Derby experience

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Introduction: Neck of femur fractures (NOF#) are common in Trauma and Orthopaedics and Avascular necrosis (AVN) is a major complication. Guidance advises fixation within 48 hours, with no separate guidance for under 60 years of age. We reviewed factors affecting the complication rate in intracapsular NOF#'s undergoing fixation under the age of 60.

Methodology: We retrospectively reviewed a 5 year cohort (2013-2017) of intracapsular NOF#'s with native femoral head retention. 49 patients were identified. The following were determined:

- Time to fixation from presentation in ED - 0-6hrs, 6-12hrs, 12-18hrs, 18-24hrs, 24-48hrs, 48+hrs:
- Fixation type - Cannulated screw (CS), Dynamic Hip Screw (DHS), DHS + CS:
- Complications – AVN, Non-union:
- Displaced/Undisplaced

Results: 31 were undisplaced, 18 displaced. 82% (N = 40) were treated with CS, 10% (N = 5) with DHS and 8% (N = 4) with DHS + CS. Overall 21% developed AVN and 10% developed non-union. After undisplaced fractures 19% developed AVN and 10% developed non-union. After displaced fractures 22% developed AVN and 11% developed non-union. 40 patients were fixed using CS, 20% developed AVN and 12.5% had non-union. AVN occurred in 20% of those fixed with a DHS and 25% fixed with DHS and CS.

No AVN was identified in the 0-6 hr fracture fixation time range.

Conclusion: No patients receiving fixation in less than 6 hours went on to have AVN or non-union, with higher rates after this time. There was no difference in outcome regarding AVN when looking at different fixation methods. There was no difference in complications when comparing fracture displacement.