

Outcome of MRI detected fracture neck of femur

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INTRODUCTION

- Proximal femoral fractures are a major cause of morbidity and mortality in the ever increasing elderly population.
- Most hip fractures are due to low energy injuries such as a 'fall from standing height'.
- 3-4% fractures are missed as they are not evident on routine hip X-rays. These are called 'occult' fractures.
- MRI scan is recommended for the diagnosis of 'occult' fractures.

AIMS & OBJECTIVES

- To create a database of all patients who underwent an MRI scan for suspected femoral neck fractures.
- To assess the outcome in this particular cohort of patients.

MATERIALS & METHODS

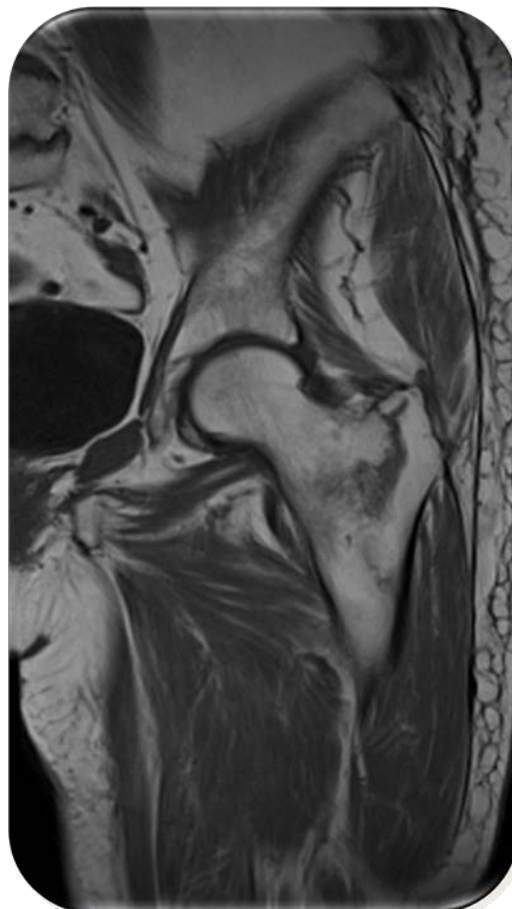
- Using the Radiological Information System (RIS), a total of 261 patients identified who underwent MRI for suspected femoral neck fractures.
- Patients with low impact injury and isolated hip fracture included and those with multiple injuries excluded.
- 1.5 Tesla, Siemens MRI machine used for scanning. T-1 coronal sequence employed.
- Demographics data such as age, sex, side of injury analysed.
- Various categories defined such as 'MRI < 24 hrs' and 'MRI > 24 hrs', for the ease of comparison.
- Analysis ToolPack on Microsoft 2010 used for statistical analyses

RESULTS

- 111 patients with femoral neck fractures. 70 met inclusion criteria.
- Comparable demographic data, however right sided fractures significantly more in females ($p=0.027$).
- Majority of patients (66%) discharged home as opposed to going for rehabilitation on comparing with NICE 2012 guidelines ($p=0.002$).
- Patients with internal fixation had lesser mortality as compared to those who underwent joint replacement ($p=0.056$).



Normal left hip radiograph



Extra-capsular hip fracture diagnosed on MRI

DISCUSSION

- MRI is the preferred modality for the diagnosis of 'occult' hip fractures. The T-1 sequence has a sensitivity of 100%.
- No difference noted in patients with early diagnosis vs. late diagnosis
- Greater trochanter (GT) fractures to be evaluated carefully. What may appear to be an occult fracture may be in fact an incomplete fracture.
- Better outcome in internal fixation group and most patients went back to their homes.

CONCLUSION

- MRI detected 'occult' fractures are essentially un-displaced, sustained after a low energy injury.
- The associated soft tissue damage is significantly low as compared to a displaced femoral neck fracture.
- Most patients underwent internal fixation and early mobilisation in our study.
- Better outcome is reflected in most patients returning to their homes rather than going for rehabilitation.

REFERENCES

- National Institute for Health and Clinical Excellence. The management of hip fractures in adults. Guidance cmg46. NICE 2012 November guide.
- Iwata T, Nozawa S, Dohjima T, Yamamoto T, Ishimaru D, Tsugita M, et al. The value of T1-weighted coronal MRI scans in diagnosing occult fracture of the hip. JBJS(Br) 2012;94-B(7):969-73.