

The spine is still a 'blind spot' for radiologists on CT; can previous osteoporotic vertebral fracture predict the risk of subsequent neck of femur (NOF) fractures?

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Objective

The incidence of hip fracture in patients with a history of vertebral fracture is 55%¹. A high proportion of vertebral fractures remain undiagnosed on CT, hence the opportunity to prevent hip fractures is missed. We seek to evaluate the reporting of incidental vertebral fractures on CT in a cohort of patients with fractured neck of femur and compare it with that of the general population.

Methods

291 patients who had NOF fractures in 2017 were reviewed. We assessed patients who had a prior CT scan with the spine in the field of view. We collected this data: vertebral fractures detected and commented, if they were reported as fractures or used other terminology, if they were graded and how many levels involved. We looked at whether the patient was osteoporosis treatment prior to their hip fracture.

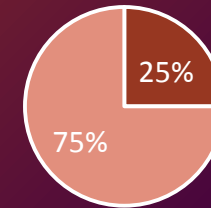
Results

123/291 (42%) had a previous CT including the spine. 20/123 (16%) had a vertebral fracture reported. Out of 103 that did not have a fracture reported, 11 had a fracture that was missed, bringing the total with vertebral fractures to 31 (25%). Out of 20 that had a fracture reported, 13 (65%) were called a fracture, 3 (15%) were graded and 5 (25%) were on osteoporosis treatment at the time.

Conclusions

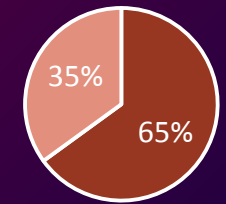
The spine on CT should be assessed for osteoporotic fractures by the radiologist and when identified, reported definitively as a fracture as well as correct categorization performed. Furthermore, it is imperative that further bone health investigation and management is advised in order to prevent further fractures.

Patients with a NOF



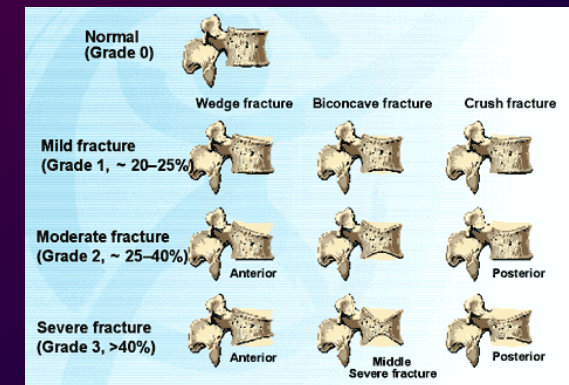
- Vertebral fracture on previous CT
- No vertebral fracture on previous CT

Patients with vertebral fracture reported



- Reported as a fracture
- Other terminology used

Grading of vertebral fractures²



References

1. Griffith JF. Identifying osteoporotic vertebral fracture. *Quant Imaging Med Surg.* 2015;5(4):592-602. doi:10.3978/j.issn.2223-4292.2015.08.01
2. Vertebral Fractures Semi-Quantitative Grading Genant H. et al *J Bone Miner Res.* 1993; 8:1137-42