

Fragility Fractures of the Pelvis: Application of an Imaging-Based Classification System and Assessment of Patient Outcome

Authors : Blake Milton, Georgette Goode, Elias Sachawars, Virgil Chan, Jason Dizon, Christopher Oldmeadow, Garbor Major

Abstract : Fragility fractures of the pelvis (FFP) are a common and increasing fracture type in our ageing population. A novel grading classification system developed for FFP by Rommens and Hofmann attributes a severity score related to degree of pelvic ring involvement, which is assessed on CT imaging. The purpose of this study is to assess the relationship between radiologist-assigned FFP grading and patient mortality in conservatively managed patients. This retrospective review identified consecutive 100 patients aged ≥ 65 years at time of FFP. The Rommens-Hofmann severity grading was allocated to these injuries by 2 radiology trainees and a consultant radiologist. Five-year survival was determined from review of patient medical records. Patient medical records were also analysed to account for possible confounding factors including age, gender, comorbidities (Charlson score) and relative socio-economic disadvantage (SEIFA decile). Suitable FFP's (n = 99) were classified by increasing severity by increasing severity grades: Type I (43% (n = 43)), Type II (33% (n = 33)), Type III (13% (n = 13)), Type IV (10% (n = 10)). No significant differences in survival were found between fracture groups, which persisted when also adjusting for age, gender, Charlson score or SEIFA decile. There was a lack of evidence to suggest a relationship between CT-based fracture grading and patient survival, even when accounting for the listed possible confounding factors. This may be due to small sample size or possible study biases, or possible heterogeneity within the population not adequately captured with available metrics. Given that no difference in mortality has been identified between FFP grades in conservatively managed patients, further research is important to assess mortality benefit in an operative patient population.

Keywords : fragility fractures, fracture classification, pelvic CT, pelvic fracture, pelvic ring fracture

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