Halvtidsseminarium för doktorsexamen i medicinsk vetenskap

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Distal radius fracture: incidence, treatment and malunion

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Konferensrummet, Hotell Skansen, Kyrkogatan 2, Båstad

Opponenter:
Professor Magnus Karlsson, Ortopedi, Lunds universitet
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ABSTRACT

Background

- Distal radius fracture (DRF) is the most common fracture in adults, mostly affecting women after the age of 50 years due to a strong association with osteoporosis. Programs for screening and treating osteoporosis have been implemented, potentially affecting the incidence.
- Two important complications of DRF are fracture malunion and posttraumatic osteoarthritis (OA).
- Little is known about how malunion affects long-term outcomes, and generally the evidence regarding the association between malunion and patients-reported outcomes is unclear.
- There is a lack of standardized reproducible methods to assess radiocarpal OA.

Objectives and methods

- Estimate the incidence of DRF in the adult general population of Northeast Skåne in 2016 and compare it to that in the same population in 2001, using radiographs to identify Fracture cases.
- Investigate the association between DRF malunion and patient-reported outcomes 12 to 14 years after DRF measured with the disabilities of the arm, shoulder and hand (DASH) scale.
- Evaluate the strength of current evidence regarding the association between DRF malunion and patient-reported outcomes by conducting a systematic review and meta-analysis.
- Assess the ability of a novel computer software in identifying radiocarpal OA on plain wrist radiographs in comparison with the assessment done independently by two surgeons according to the established Kellgren-Lawrence classification of OA.

Preliminary results

- The incidence of DRF in 2016 was 0.76 (95% CI 0.70-0.82) of the incidence in 2001 (p<0.001).
- Compared with patients without malunion, those with malunion had significantly worse DASH scores (range 0-100) from baseline to 12-14 years; adjusted mean difference was 11 (95% CI 4-17, p<0.01).
- The computer software’s sensitivity was 46%, specificity 70%, and AUC 0.58 (95% CI 0.43-0.73), indicating poor ability to identify radiocarpal OA.

Significance

- A new estimation of the incidence of DRF in the same general population is important in order to assess change over time and effectiveness of osteoporosis preventive and therapeutic programs.
- If there is evidence that patients with malunited distal radius fracture are more likely to have worse outcomes than those without malunion, it would impact the choice of treatment as treatments differ in their efficacy in restoring anatomy.
- Standardized reproducible assessment of radiocarpal OA is important in comparing complications of treatments and when making comparisons across studies.

Publications
