Cone beam computed tomography influences the classification and choice of treatment for distal radius fractures

Sara Eriksson[1], Firas Rasool[2], Ida Dånmark[3], Claudia Weber-Lensing[2], Jonas Werner[1], Lotta Fornander[1,4]

[1] Ortopedkliniken, Vrinnevisjukhuset, Norrköping, [2] Radiologiska kliniken, Vrinnevisjukhuset, Norrköping, [3] Ortopediska kliniken, Universitetssjukhuset, Linköping, [4] Institutionen för biomedicinska och kliniska vetenskaper, Linköpings universitet, Norrköping

The objectives of this study were to investigate the inter- and intraobserver agreement in the classification of distal radius fractures (DRFs) according to the AO and the Buttazzoni classification system, for conventional radiography (CR) and cone beam computed tomography (CBCT) and to explore whether the radiological modality used influences the choice of treatment. Fifty consecutive patients with DRFs were included. CR and CBCT images were independently reviewed by five observers and the fractures were classified according to the AO and the Buttazzoni classifications. The Buttazzoni classification showed higher interobserver agreement than the AO classification, but the agreement for the AO classification was increased using CBCT. In 38% (n=57) of the observations, the suggested treatment was changed when CBCT was used. In conclusion, the choice of radiological modality affects both the classification and the choice of treatment for DRFs and CR tends to underestimate the complexity of DRFs.