

Bone shortening of clavicular fractures: comparison of measurement methods

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Background: A relative indication for operative treatment of the fresh clavicular fracture is bone shortening over 2 cm; nonetheless this is controversial within the Scandinavian countries where such a connection has not been found. A review of the literature shows different measurement methods for shortening are used scientifically.

Purpose / Aim of Study: We wanted to investigate if the scientifically used measurement methods were interchangeable to each other by comparing intra-class correlation, standard error of measurement and minimal detectable change as well as using Bland-Altman plots.

Materials and Methods: Two raters measured clavicle shortening on 65 patients using conventional radiographs on two separate sessions. The two methods described by Hill et al and Silva et al were used on unilateral pictures. Side comparison were done on panoramic radiographs.

Findings / Results: We found that none of the methods were directly interchangeable. We found fewer patients with bone shortening over 2 cm when using side comparison.

Conclusions: Our results caution for the interpretation of scientific results on clavicular bone shortening. In a clinical context the measurement method used for clavicular bone shortening could be an explanatory factor in differences of operative care rates between countries.