

PRESENTATION 4

Comparing Outcomes of Plate versus Screw Osteosynthesis of Scaphoid Non-union: A Systematic Review and Meta-Analysis

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Background

Scaphoid nonunion is commonly treated with open reduction and internal fixation with a headless compression screw. The use of variable-angle buttress plates has also been described, although this has been considered a salvage procedure. The aim of this systematic review is to compare plate and screw osteosynthesis of scaphoid nonunion to determine whether either has preferable outcomes.

Methods

A database and hand search was performed, and included studies were critically appraised using NIH Quality Assessment Tools. Meta-analyses or narrative syntheses were performed for relevant data.

Results

Twelve studies met the eligibility criteria for inclusion. The evidence suggests that there are no significant differences between plate and screw interventions for the outcomes of Disabilities of the Arm Shoulder and Hand, Modified Mayo Wrist Score and grip strength. Range of motion demonstrated incidences of improvement in extension, flexion, ulnar deviation and radial deviation for both interventions. However, there was considerable variety in reporting methods, making statistical comparison difficult.

Key messages

Plate osteosynthesis of scaphoid nonunion is a viable alternative to screw osteosynthesis in terms of outcomes. Surgeons may choose to use this method of fixation based on preference or clinical need. There is a need for consistent reporting standards in order to draw valuable inferences from research.

Case series studies can lead to significant advancements in medicine, but this systematic review must be interpreted with caution due to inherent biases in such study designs. Randomised controlled trials with well-established comparators and standardised reporting techniques will provide a higher level of evidence.

