Manipulation After Fractures

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Manipulative Management of Post-Colles Fracture
Weakness and Diminished Active Range of Motion

- This article offered a case analysis of a 58-year-old woman who presented 19 months after she sustained a Colles Fracture of her right wrist.

Evaluation

- Dynamometer strength testing revealed 30 Kg of force in the involved, dominant extremity and 45 Kg of force in the uninvolved and non-dominant side.
- A loss of 30 degrees from normal flexion and extension were identified. Ulnar deviation was measured at 15 degrees and radial deviation at 5 degrees.
- Review of radiographs demonstrated a comminuted Colles' fracture with a classical posterior displacement of the distal radial fragment.
Manipulation Protocol

- Three different techniques utilized
  - Distraction of the Carpus
  - In wrist flexion
  - Distraction and Manipulation of the Carpus in extension

- Two times a week for two weeks

Results

- Increase of 18 degrees in flexion,
- Increase of 10 degrees in extension
- Increase of 5 degrees in ulnar deviation and 3 degrees in radial deviation.
- Strength increase on the effected side was also observed, improving 22 Kg of force from initial evaluation.

Comments

- Mechnoreceptors
  - In the absence of any mechanoreceptor afferentation from that joint, normal reflex loops that allow inhibition of pain and help control normal joint movement are greatly impaired

- RSD
Clinical Implications

- This reference clearly illustrates that even if the loss of proprioceptive input does not manifest to the full extent to produce RSD, there is still clearly a reduction in the proprioceptive input, resulting in decreased inhibition of the vasoconstriction at the spinal cord level, which clearly can produce pain and muscular weakness.

Other References

- Early Active Mobilization Versus Cast Immobilization in Operatively Treated Ankle Fractures - A Prospective Analysis of Early Functional Recovery
  - Publisher Urban & Vogel ISSN 1439-0590, 10.1007/s00068-005-1041-z Pages 398-400
  - The results indicate that earlier mobilization out of cast increases earlier functional outcome and loaded range of motion. These earlier advantages appear to diminish at later follow-up. Importantly, the study does not indicate an increased risk of loss of fracture reduction in the earlier mobilized group.