Barral Institute Case Report

Neural Manipulation - Post fracture neural restrictions of the elbow

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**Abstract**

Neural restrictions can occur following a fracture and fixation following injury. Increasing the mobility of the neural structures in the area can be an important step in restoring function. This is a case of a 15 month old who sustained a fracture due to a fall. Neural development at this age is very dependant on the child’s ability to explore their world. Thus, it is critical to restore upper extremity Range of Motion quickly to ensure function of the arm but also continued brain development.

**Key Words**

Elbow, neural manipulation, pediatric physical therapy, fracture

**Introduction**

A 15 month old presented 5 days following splint removal from a fractured elbow sustained after a fall. The child was splinted for 5 weeks in 90 degrees of flexion. Her active and passive ROM was about -30 degrees extension. She would actively reach with the affected arm within those ROM limitations. Pronation/Supination was approximately 50% each.

**Method**

General listening was to her left arm. Local listening to the lateral elbow, buzzy feel, at the radial nerve. Manual neural manipulation treatment was performed on the radial nerve. A second local listening was performed which went to the medial elbow at the ulnar nerve. This area was swollen on palpation. Neural manipulation was performed on the ulnar nerve. A final local listening was performed which went to the median nerve at the supinator arch (Arcade of Frohse). Neural manipulation was performed here and ROM rechecked.

**Results**

At the end of this short (15 minute) treatment the child’s ROM increased from -30 to 0 with immediate voluntary use of the arm in the new range of motion. Follow up one week later showed full spontaneous ROM of the entire left UE reported and witnessed.

**Discussion**

The sequelae of a fracture may include some swelling which in turn may cause nerves to become entrapped. In many cases numbness or tingling are symptoms of this occurring, bringing the patient to a practitioner for care. However, as this was a child, we could not determine if that was the case, as these symptoms are reportable symptoms. This shows the value of the osteopathic “listening” tool of evaluation to guide the treatment as it shows where treatment is needed without the patient guiding the therapist by their symptoms, which can also sometimes mislead.

In addition to the fracture itself, the immobilization of the fracture in the splint may have also contributed to the medial-lateral nerve irritations, due to ill fitting splints or the patient pushing against the splint. Elbow alignment relies on a balance of tensions between the medial and lateral structures, including neural tensions. Neural manipulation can be an effective tool to mitigate possible long term effects of early elbow fractures, such as cubitus valgus.

**References**

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