

RADIAL-ULNAR FIXATION SYNDROME

The *Radial-ulnar Fixation Syndrome* is the forearm's equivalent of the *Tibial-fibular Fixation Syndrome*. In this syndrome, the radius and ulna bones appear to be fixed, to the degree that the joint play of the distal radioulnar joint may become so reduced that there may be almost no glide play between the two distal heads. This is apparently a slow developing condition, developing without conscious awareness of the patient. Typically the patient complains of a "stiffness" of the forearm when movement of the wrist is attempted. As the condition progresses, a complaint of diffuse low-grade pain throughout the forearm may develop (especially involving the posterior aspect). Just as in the *Tibial-fibular Fixation Syndrome*, the exact cause of the syndrome is unknown, but it seems to be remarkably prevalent among wood-wind players, especially clarinetists, who perform no supination or pronation movements of the wrist for extremely long periods (often several hours). Remarkably, DSR survey has (with very few exceptions) been able to demonstrate inflammation to be present over and around both the proximal head of the radius and the distal head of the ulna in all chronic cases.



The high skin resistance pattern generally associated with the Radial-Ulnar Fixation Syndrome

Treatment

To treatment of the *Radial-ulnar Fixation Syndrome*, eliminate any inflammation that is present and re-establish normal distal radioulnar joint play.

Application:

- Place a negative electrode over the proximal head of the radius, and a positive over the distal head of the ulna. Preset an electrical stimulation unit to produce a visible contraction, at 7 Hz. Stimulate for 10 minutes.

- Then set the unit to deliver a medium frequency current, with a duty cycle of 10-seconds on and 10-seconds off. The amplitude should be sufficient to produce a visible near tetanic contraction of the involved muscles. Stimulate for 10 minutes.
- Manipulate the soft tissues over and around both the proximal head of the radius and the distal head of the ulna to eliminate any adhesions that are present (refer to Soft Tissue Manipulation in Tight Areas).
- Mobilize the radio-ulnar joint to reestablish its normal glide-play range.
- Preset the ultrasound unit to deliver a 3 (or 3.3) MHz pulsed waveform, at 1.5 W/cm². Ultrasound the inflamed zones, utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for six minutes.

The following treatment forms have also been effective.

Variation:

- Preset the ultrasound unit a 3 (or 3.3) MHz pulsed waveform, at 1.8 W/cm². Ultrasound the inflamed zones, utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for six minutes. This procedure is designed to soften the adhesions that may be present.
- Manipulate the tissues in and around the inflamed zones to eliminate any adhesions that may be present.
- Twenty minutes after the first ultrasound, preset the ultrasound unit to deliver a 3 (or 3.3) MHz pulsed waveform, at 1.5 W/cm². Ultrasound the inflamed zones utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for six minutes. This is performed to “cool off” the manipulated zone by effectively halting the production of prostaglandins by the stressed tissues.
- Apply mechanical vibration, delivered at 60 to 120 Hz, to the wrist extensor tendons, for two minutes. Apply the vibration at a relatively high but tolerably comfortable level for the patient. This is performed to increase capillary circulation in the involved tissues.

Variation:

- Preset the ultrasound unit a 3 (or 3.3) MHz pulsed waveform, at 1.8 W/cm². Ultrasound the inflamed zones, utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for six minutes. This procedure is designed to soften the adhesions that may be present.
- Manipulate the tissues in and around the inflamed zones to eliminate any adhesions that may be present.
- Apply cold laser (with or without simultaneous electrical stimulation provided by the laser applicator) to the inflamed zones for approximately 6 minutes. This is performed to “cool off” the manipulated zone by effectively halting the production of prostaglandins (or facilitating enzyme destruction of **all** inflammatories being produced) by the stressed tissues.
- Apply mechanical vibration, delivered at 60 to 120 Hz, to the wrist extensor tendons, for two minutes. Apply the vibration at a relatively high but tolerably comfortable level for the patient. This is performed to increase capillary circulation in the involved tissues.

Successful treatment may take place in one or two sessions. A failure to produce early elimination of the problem should prompt a more proximal survey of potential sites of undiscovered problems. The patient should

be encouraged to periodically supinate and pronate the involved wrist, especially when engaged in an activity that requires prolonged immobility of the wrist under tension (like playing the clarinet).

Post Treatment Suggestions:

The patient should be encouraged to flex the involved elbow(s) to 90° against the patient's side, close the hand and rapidly rotate the wrist through full supination and pronation, for 20 minutes a day. This can be carried out throughout the day, in short spurts, rather than in one sitting. It should be suggested that this become a "new habit" that will help discourage a redevelopment of the syndrome.

Trigger Points

The following is a list of trigger point formations which may, singly or in combination, imitate or contribute to the pain accompanying a *Radial-ulnar Fixation Syndrome*: Scalenus, Scalenus (minimus), Medial teres major, Lateral teres major, Coracobrachialis, Supraspinatus (muscle), Latissimus dorsi (upper portion), Serratus posterior superior, Subclavius, Subscapularis, Medial triceps (lateral fibers), Lateral triceps, Triceps (long head), Supinator, Extensor carpi radialis longus, Extensor carpi radialis brevis, Extensor carpi ulnaris, Middle finger extensor, Fourth finger extensor, Pronator teres, and Extensor indicis proprius.