DISTAL PATELLAR TENDONITIS SYNDROME

The quadriceps muscle group basically communicates with the tibia via the tendon of the quadriceps femoris. This tendon is commonly called the patellar tendon. This tendon extends from its attachment with the quadriceps muscle group to encapsulate the patella. It attaches itself to the tibial tuberosity via the central portion of the common tendon of the quadriceps femoris. This is a ligament officially called the patellar ligament (ligamentum patellae) but is commonly termed the *distal patellar tendon*.

The patellar ligament may be injured if an individual kneels on it or over stresses it by performing a deep knee bend or squat, subsequently forcefully extending the knee (constituting a strain). If the ligament is strained sufficiently, an inflammation of the associated tissues will result producing a characteristic pattern of high skin resistance right over it, as demonstrated by a DSR survey. This pattern can only be demonstrated with the knee straight (at approximately 180^{o}). It will not present itself if the knee is flexed to 90^{o}.

The patient will complain of dull, constant, aching pain, or sharp, searing pain, in and around the knee joint. The painful area may sometimes include the medial and lateral collateral ligament areas.

The pattern of high skin resistance associated

with the Distal Patellar Tendonitis Syndrome

Treatment

Clinical efforts must be directed at reducing the inflammation process and any adhesions that may be present.

Application:

- Preset an electrical stimulation unit set to deliver a medium frequency current with a duty cycle of 10 seconds on and 10 seconds off. Place a negative electrode over the patellar ligament and a positive electrode over the rectus femoris, on the same side.

  Adjust the amplitude to produce a near tetanic contraction of the thigh muscles. Electrically stimulate for 15 minutes.

- Manipulate the soft tissues in and around the inflamed zone to eliminate any adhesions that may be present.

- Preset an ultrasound unit to deliver a 1 MHz pulsed waveform, at 1.5 W/cm^2. Ultrasound the inflamed zone, utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for six minutes.

- Preset the electrical stimulation unit to deliver a 7 Hz, wide-pulsed galvanic current. Place a positive electrode over the involved patellar ligament and a negative electrode over the rectus femoris muscle on the same side. Adjust the amplitude to produce visible rhythmic contractions. This serves to decrease swelling in the popliteal space while helping to increase capillary circulation in the leg. Stimulate for 20 minutes.

The following treatment form has also been effective.

Variation:

- Preset an ultrasound unit to deliver a 1 MHz pulsed waveform, at 1.8 W/cm^2. Ultrasound the inflamed zone, utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for 6 minutes. This procedure is also designed to soften the adhesions that may be present.

- Manipulate the tissues in and around the inflamed zone to

eliminate any adhesions that may be present.

- Cold laser the inflamed zone, for 2 to 5 minutes. This is performed to denature or destroy **all** the remaining inflammatories.

- Mechanically vibrate the inflamed zone for 2 minutes, to further increase capillary circulation and to desensitize the involved tissues.

Generally, these treatment forms provide almost immediate relief of the *distal patellar tendon syndrome*, usually requiring only one or two sessions for full resolution.

Post Treatment Suggestions:

Have the patient avoid “squatting” (deep knee bends) or kneeling (direct pressure) for two weeks.

Trigger Points

The following trigger point formations may, singly or in combination, imitate or contribute to the pain associated with the *Distal Patellar Tendonitis Syndrome:* Gluteus minimus, Adductor longus, Biceps femoris, Vastus medialis, and Anterior tibialis.