

OSGOOD-SCHLATTER DISEASE SYNDROME

The quadriceps muscle group communicates with the tibia via the tendon of the quadriceps femoris muscle group. This tendon is commonly called the patellar tendon. This tendon extends from its attachment with the quadriceps muscle group to encapsulate the patella. It then proceeds to attach 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.

Osgood-Schlatter Disease Syndrome (Apophysitis of the tibial tubercle) stems from an irritation of the patellar ligament at the tibial tuberosity. This irritation results from rapid femur length growth that is not matched by a simultaneous and equal lengthening of the quadriceps muscles. This failure to “keep up” causes the “short” muscles to exert increasingly high pressure on the tibial tuberosity as the bone growth continues. Ultimately this pressure begins stressing the soft tissues in and around the tibial tuberosity, resulting in an active inflammatory process. Possible exacerbating risk factors include running and jumping, especially if they are part of an athletic training program (track and field, soccer, or football). If untreated, the tibial tuberosity will become swollen and eventually form a permanent hard “knob”.



The pattern of high skin resistance associated with the *initial* phase of the Osgood-Schlatter Disease Syndrome



An extreme example of the end result of an untreated Osgood-Schlatter Disease 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 tibial tuberosity 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 the ultrasound unit to deliver a 3.3 MHz pulsed waveform, at 1.5 W/cm². 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 tibial tuberosity and a negative electrode over the rectus femoris muscle on the same side. Adjust the amplitude to produce visible rhythmic contractions. Stimulate for 20 minutes.

The following treatment form has also been effective.

- Preset the ultrasound unit to deliver a 3.3 MHz pulsed waveform, at 1.8 W/cm². Ultrasound the inflamed zone, 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 zone 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 zone for approximately six 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.
- Mechanically vibrate the inflamed zone for two minutes, to further increase capillary circulation and to desensitize the involved tissues.

Generally, these treatment forms provide some immediate relief of pain, but full resolution may take up to six sessions.

Trigger Points

The following trigger point formations may, singly or in combination, imitate or contribute to the pain associated with the *Osgood-Schlatter Disease Syndrome*: Gluteus minimus, Adductor longus, and Vastus medialis.