TEACHING TECHNIQUES

Ischial Prolotherapy

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We are now addressing treatment of soft tissue injuries of the ischium, which is the most inferior portion of the pelvis. Injuries in this area are common. Most often we see ischial injuries related to sports that involve running, jumping, sprinting, hiking and cycling. The pain is often described as a "pain in the butt" or pain in the groin. The pain usually occurs while sitting or during the sporting activity. If left untreated, the pain gets stronger and interrupts the athlete's training and sports. The Prolotherapist can intervene by treating the injuries and restoring strength to the area and returning the athlete to their sporting activities.

ANATOMY

The ischium is the posterior inferior compart of the pelvis. The ischial ramus is the thin, flattened part of the ischium, which ascends from the lower part of the pelvis and joins the inferior ramus of the pubis. The combined rami are sometimes called the "ischiopubic ramus." Posteriorly, bony prominences form the ischial tuberosity on each side of the inner pelvis and support the body's weight in a sitting position. The large opening called the obturator foramen is formed by both the rami of the ischium together with the pubis and this is the opening that allows for the passage of major blood vessels and nerves to the legs and feet. (*See Figure 1.*)

The inferior pubic ramus is the attachment of the gracilis, adductor brevis and adductor longus muscles.

The ischial ramus is the origin of the adductor magnus and quadratus femorus muscles.

From the ischial tuberosity arises the sacro-tuberous ligament and the hamstring tendons (the long head of the biceps femorus, semimembranosis, and semitendonosis). The hamstrings muscles span both the hip and knee joints. They act to extend the hip and flex the knee.

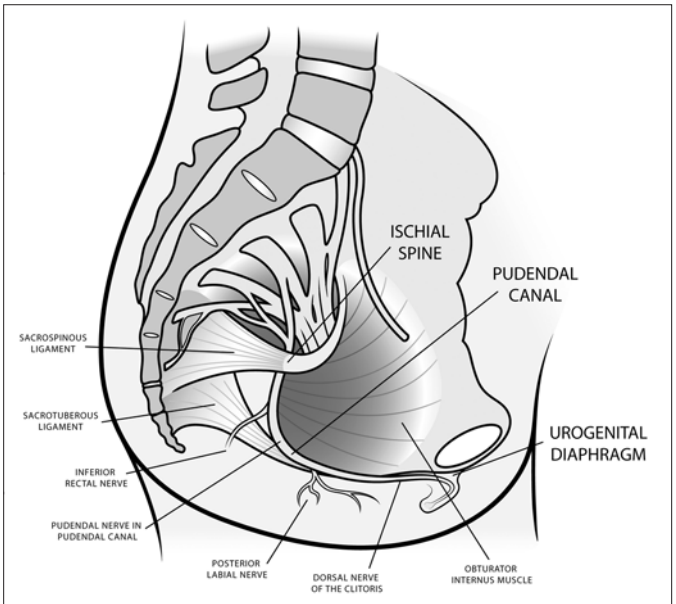

Figure 1. Anatomy of the female ischium.

TREATMENT

We will divide the treatment into two primary segments, injury to the ischial tuberosity (posteriorly) and injury to the ischiopubic ramus (anteriorly). A patient may have injury to either one or both of these areas. Palpation reveals the tenderness of the injured area. We want to palpate carefully along the ischial tuberosity and ischiopubic ramus identifying all the injured areas.

For treatment of the ischial tuberosity, position the patient prone with knees slightly separated. It is important to put a pillow or pillows underneath the patient's midsection so as to have easy access to the ischial tuberosity. (*See Figure 2.*) With the thumb palpate the tuberosity, identifying the points of tenderness, paying special attention to the points of maximal tenderness. After cleansing the skin, place one or more blebs of 1% lidocaine over the tender areas to be treated. Use approximately 6 to 12cc of Prolotherapy

Figure 2. Injection of the ischial tuberosity with patient prone.

Figure 3. Anatomical injection of the ischial tuberosity.

Figure 4. Injection of the ischiopubic ramus.

solution for each ischial tuberosity. Using a 25G, 2-inch needle I inject 0.5cc at each tender site. (*See Figure 3.*)

I then have the patient turn to the supine position for treatment of the ischiopubic ramus. The patient will have knees bent and parted. (*See Figure 4.*) The skin is cleansed and local anesthesia blebs are set over the injured areas. Again, incorporating the "peppering" technique I use a 25G, 2-inch needle to inject 6 to 12cc of standard Prolotherapy solution into the fibro-osseous junction of the ischiopubic ramus. With index and long fingers straddling the bone, move along the ischiopubic ramus to include all the injured areas.

> ***Peppering*** *is a technique where an area is peppered with injections of 0.5cc of solution. The technique is begun with an injection of 0.5cc into the injured structure then the needle is partially withdrawn and redirected slightly and reinserted around the injured area and another 0.5cc are injected there. This is repeated multiple times thus "peppering" the fibro-osseous insertion of the tendon or ligament.*

Prolotherapy is extremely effective for treatment of tendon and ligament injury about the ischium. Typically, patients are treated every two to five weeks. Depending on the case, one to four treatments are generally needed. Athletes and sedentary individuals alike are successfully restored to full painless activity (and sitting) again! ■