Dynamic Chiropractic

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Soft Tissue

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Recent Thoughts on the Iliotibial Band Friction Syndrome According to Orchard et al.,1 the usual explanation for the causes of the iliotibial band friction syndrome (ITBFS) such as training errors, downhill running, tight iliotibial band and hyperpronation of the feet "have not shown significant associations." These authors feel that people are predisposed to this condition mainly due to excessive width of the band as it glides over the lateral epicondyle of the femur. Patients with the ITBFS showed significantly thicker bands on MRI scans than controls without symptoms.2

ITBFS is an overuse injury due to increased friction of the ITB over the lateral femoral condyle. The iliotibial band originates proximally near the greater trochanter from the fascia of the tensor fascia lata, gluteus maximus and gluteus medius and inserts into the lateral tubercle of the tibia, supracondylar tubercle, patella and patellar tendon.3 Patients with ITBFS usually feel pain during the gait cycle when the gluteus maximus and/or iliotibial band are contracting most, which for joggers is during the first 35 percent of the stance phase.4 According to Perry5 the upper gluteus maximus has a direct extensor action on the knee through its insertion into the iliotibial band. Pain may also be felt at the end of the swing phase, when the decelerating leg reaches heel strike.6 The most common symptom is pain on the lateral side of the knee during motion which may radiate proximally or distally. Activities such as downhill running causing compression of the ITB on the lateral epicondyle and aggravates the problem. The usual location of the pain is about 3 cm proximal to the lateral joint line on the lateral femoral epicondyle.

In their examination of cadavers, Orchard, et al.,1 found that the patients with potential problems had ITBS where the posterior edge of the band was anterior to the lateral epicondyle in knee extension, as differentiated from cadaver specimens where the posterior edge was overlying the lateral epicondyle in full extension. Immediately after heel strike the knee angle is approximately 30o or a little less; patients with a predisposition to this syndrome (thicker bands where the posterior edge rubs over the lateral epicondyle) will be in an "impingement zone" near the 30o angle. The ITB shifts posterior during knee flexion. Downhill running and slower speeds of running are prone to cause a knee flexion 30o angle, allowing the patient to be consistently in the 30o impingement zone. ITBFS develops much more often during downhill running than on any other plane.6 ITBFS is less common in sprinters and athletes who move in a variety of directions. In general the faster the speed of the athletic event the less time spent in the "impingement zone."1 Patients with ITBFS complaints are relieved when asked to walk stiff-legged (0o extension-out of the 30o impingement zone).

Two functional tests to pinpoint the ITBFS are first to perform an Ober test which assesses iliotibial band tightness. The patient lies on normal side with down knee flexed. The upper involved knee is flexed 90o and the practitioner abducts and hyperextends the upper hip and then allows it to drop. If the extremity remains above the horizontal the ITB is probably tight. If Ober is positive, while the patient is in the same position, adduct the leg further to increase ITB tension, palpate the lateral

femoral epicondyle and extend the 90o knee to the 30Ë range which will reduplicate the patient's pain.

Treatment initially is directed towards reducing the localized inflammation, followed by friction and active release techniques at the local painful area and all along the ITB, including the gluteus maximus and tensor fascia lata. Nodules and restrictions should be released at all levels of the ITB chain from origin to insertion. Additional soft tissue techniques may have to be used on the hamstrings, quadriceps and adductors, such as post-facilitation stretch or fascial release. Biomechanical evaluation of the pelvis and lower extremity, including the feet, should be made.

After the inflammation has subsided, activities such as running faster than the patient's usual pace or multidirectional sports (e.g., tennis and basketball) may be used since these movements do not consistently occur in the impingement zone.

References

1. Orchard JW, Fricker PA, Abud At et al. Biomechics of iliotibial band friction syndrome in runners. Am J Sports Med 24: 375-379, 1996.

2. Ekman EF, Pope T, Martin DF, et al. Magnetic resonance imaging of iliotibial band syndrome. Am J Sports Med 22: 851-854: 1994.

3. Terry GC, Hughston JC, Norwood LA. The anatomy of the iliopatellar band and iliotibial tract. Am J Sports Med 14, 39-45: 1986.

4. Mann RA, Moran GT, Dougherty SE. Comparative electromyography of the lower extremity in jogging, running, and sprinting. Am J Sports Med 14, 501-510: 1986.

5. Perry J. Gait Analysis: Normal and Pathological Function. Thorofore, NJ: SLACK Inc., 1992.

6. Noble CB. Iliotibial band friction syndrome in runner. Am J Sports Med. 8; 232-234: 1980.

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