Rehabilitation of Soft-Tissue Injuries to the Hip

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Anatomical injuries to the hip can present with similar symptoms regardless of whether the injury was sustained through an athletic event. Therefore, the management of such injuries might not differ between an athlete and a nonathlete, but the goals of the individual, the physiological status of the tissue that has been impaired, and the underlying physical health status of the individual all contribute to the rehabilitative decision-making process. The goals of an athlete might be more physically demanding and require a facilitated temporal approach toward meeting such outcomes. As such, when developing an intervention that meets the needs of the athlete one must consider the most efficient method of returning him or her to athletic activity with minimal risk of compromising the healing process.

Anterior Muscles

Strains to this area are common, frequent, and more likely to be seen in athletes who have decreased hip flexibility or muscle strength. Oftentimes, after a strain to the rectus femoris or iliopsoas muscles, deficits in measurable active and passive hip extension and active hip flexion result. This can be treated with soft-tissue mobilization, static stretching, friction massage, or proprioceptive neuromuscular facilitation. The extent of the injury and the pain tolerance of the athlete will determine the type and progression of the intervention. Regardless of the technique chosen the clinician should pay careful attention to isolating the muscle structure involved. Much of the treatment should focus on reducing pain, a common finding after acute muscle strains. Early care might also involve using externally applied wraps to assist with structural compression and provide proprioceptive feedback (Figure 1).

Cryotherapy is helpful for superficial pain reduction but might not have any effect on the healing of the involved tissue.

Key Points

- Soft-tissue injuries to the hip are common injuries to athletes of all ages.
- The age of an athlete and the nature of the sport can predispose one to certain hip-related injuries.
- The mechanism of injury plays a key role in assessing muscle-related hip injuries and their rehabilitative approach.
- Establishing a thorough differential diagnosis for hip injuries will help provide for a quicker and safer return to participation.
- Treatment techniques for soft-tissue pathology about the hip must be unique to the causes and symptoms of each condition.

Key Words: hip injury, athletes, iliopsoas, piriformis

or the reduction of inflammation at the tissue depths involved with muscle strains to this area. Electrical stimulation can be used to inhibit pain and deter muscle atrophy in the early phases of rehabilitation, typically relying on sensory-mode application with a comfortable waveform for pain relief and a current applicable for muscle contraction for deterring muscle atrophy.

Contusions to the anterior thigh are commonly seen in contact and collision-type sports. In football, thigh pads are required to reduce the severity of such injuries. In other sports that require physical contact, however, one might choose to not wear pads. Significant contact to the anterior thigh area will result in acute bleeding and hematoma formation that can also lead to decreased hip range of motion. If this bleeding is not addressed early, strength deficits could result and performance might be affected. It has been reported that participation might be limited for anywhere from a few days to a few weeks after contusions to this area.1,2 Early intervention must also carefully screen for the possibility of a myositis ossificans formation, usually found in the midbelly of the rectus femoris muscle. This heterotrophic bone formation will rapidly generate into larger proportions, with aggressive stretching during the acute phase to subacute phases of healing. If myositis ossificans develops, aggressive intervention such as passive stretching should only be performed in the later stages of healing, and one should expect the athlete to have increased levels of discomfort.

Iliopsoas Syndrome

The iliopsoas bursa lies just anterior to the pelvic brim and can be irritated by acute trauma or overuse. An athlete with iliopsoas syndrome, as it is referred to, will present with anterior hip pain that increases with level of activity, localized palpable tenderness in the femoral triangle region, a self-described feeling of the hip “snapping,” and a positive Thomas test.3,4 The audible and perceptual “snap” might be the result of a sudden movement of the iliopsoas tendon as it travels over the bony prominence of the anterior inferior iliac spine, the iliopsoas tendon, or the ridge of the lesser trochanter.

Conservative treatment interventions for iliopsoas syndrome are oftentimes successful but can take up to 8 weeks for resolution.3 Such treatment consists of general stretching of the iliopsoas, global hip-muscle strengthening, electrical stimulation for pain reduction, and thermal agents for muscle relaxation.4,5 Johnston and colleagues propose a hip-rotational strengthening program to treat iliopsoas syndrome.4 They found a 77% successful outcome when targeting the internal and external rotators of the hip through the use of elastic resistance in an isotonic manner.4 When conservative intervention fails, surgical options that divide the psoas aponeurotic fascia, lengthen the iliopsoas tendon, or resect the prominent bony spur contributing to the snap might be indicated.

Posterior Muscles

On the posterior aspect of the thigh, the three hamstring muscles play a large role in producing hip-extension force, as well as allowing hip-flexion range of motion. A strain to the hamstring muscles occurs in a sudden burst of movement. When this happens the athlete will complain of feeling a “pull” and might note that he or she heard an audible “pop.” Examination will reveal painful and weak active knee flexion and hip extension and passive hip flexion with simultaneous knee extension, and a palpable defect in the area of the ischial tuberosity might be found. This type of injury is more prevalent in athletes who perform eccentric maneuvers.

The treatment intervention, like the mechanism of injury, is similar to that of the quadriceps group, but more work has been done in the area of hamstring-muscle strains that supports a relationship between causation, prevention, and injury. Hamstring-muscle weakness, decreased hamstring-muscle flexibility, lack of proper warm-up, fatigue, an improper flexor:extensor strength ratio, increasing age, menstrual disturbances, and previous posterior thigh injuries are suggested as predisposing factors to hamstring injuries.6-9 In athletes who take part in sprintlike activities, poor eccentric hamstring strength has been demonstrated to have a positive relationship with predisposing one to injury.10 This suggests that eccentric strengthening be emphasized during the rehabilitation program.

When palpable and reported pain appear to be near the proximal attachment of the hamstrings along the ischial tuberosity, imaging studies should be used to rule out avulsion fractures before any progressive...