

Eli Manning's foot issues: Cuboid affecting the Q-B?

Cuboid Stress Syndrome

Any of you that follow NFL football are likely aware of the ongoing saga involving Eli Manning's foot injury. It has been reported that the New York Giants' quarterback is suffering from cuboid stress syndrome, and most wonder what effect this has had on his performance this year. I thought I would write a short blog on the ailment and look at how strengthening needs to be a key component of Manning's recovery, along with prevention of future recurrence.

What is Cuboid Stress Syndrome?

Cuboid stress syndrome is an irritation and weakening of the cuboid bone in the mid-foot, due to repetitive stress on the bone. This stress is often caused by repetitive over-supination of the foot, where the underside of the foot is rotated inward too much when the foot contacts the ground during the running stride. As a result, the impact force is concentrated on the lateral, or outside, part of the foot, which can overly stress the bones and ligaments in that region. The cuboid and 5th metatarsal (long bone in the forefoot) are commonly affected because of their location along the outside of the foot. If this stress continues for long enough, the cuboid may weaken to the point where a stress fracture could occur, which would end the season for Manning. The repetitive stress can also lead to weakening of the surrounding ligaments, resulting in a subluxation (i.e. misalignment) of the cuboid, which is a common cause of lateral foot pain in athletes.

It has been reported that Manning has been over-supinating his foot to compensate for pain at the inside of his heel caused by plantar fasciitis, which is an inflammation of the plantar fascia, a ligament type structure that helps to support the arch of the foot. The over-supination commonly occurs unconsciously because it allows weight to be shifted to the outside of the foot to reduce the stress on the plantar fascia.

So how can strengthening his feet help Manning?

By strengthening the intrinsic muscles that run lengthwise under the arch of the foot (i.e. toe flexor muscles), the load placed on the plantar fascia will be reduced due to the increased arch support and shock absorption provided by these muscles. Additionally, by strengthening the foot/ankle evolver muscles (i.e. muscles that rotate the underside of the foot outward), there will be added structural support for the arch of the foot, and a further reduction in stress on the plantar fascia. With sufficient strengthening of the intrinsic foot muscles and the foot/ankle evolver muscles, Manning should be able to plant his foot with better foot posture, so that the impact force during the running stride will be more evenly distributed over the entire foot, which will significantly reduce the stress on the outside of the foot, including the cuboid bone and the surrounding ligaments.

AFX can be used to strengthen the intrinsic muscles of the foot and the foot/ankle evetor muscles through a full range of motion with eccentric loading, to allow for optimal strengthening in a short time period. These exercises can be accomplished in a non-weight bearing position, to allow for strengthening without the added stress created by a weight bearing position that can potentially irritate the cuboid bone and/or the surrounding ligaments.

~ Rick Hall, M.Sc.