



Shelbourne Knee Center
at Methodist Hospital
Specialized Care for Knee Injuries

K Donald Shelbourne MD
Scott E Urch MD
Physical Therapy

1815 N Capitol Ave, Ste 600 Indianapolis, IN 1.888.349.5633 1.317.924.8636

Severe Quadriceps Contusions in Athletes: A Report of Three Cases. Diaz JA, Fischer DA, Rettig AC, Davis TJ, Shelbourne KD: Am J Sports Med 31: 289-293, 2003.

Severe quadriceps muscle contusions in athletes are enigmatic in several respects. Immediately after injury an athlete may have negligible symptoms, but development of morbidity over the ensuing 24 hours may include swelling, limited range of knee motion, and pain. Additionally, intramuscular compartment pressures may be elevated and MRI may reveal surprisingly large collections of fluid in the deep tissues. These signs may be alarming, but a review of the literature and our own experience in the cases of three professional athletes suggests that symptoms should be treated conservatively (that is, without fasciotomy), with emphasis on pain management and maintenance of knee range of motion.

Quadriceps muscle contusions are produced by a direct external blow to the anterior or lateral thigh. This blunt trauma usually results in damage to the muscular layer directly adjacent to bone.¹¹ Varying degrees of muscle injury can occur, depending on the energy absorbed. The majority of quadriceps muscle contusions seen in athletes are classified as either mild or moderate (that is, more than 45° of knee motion is present).^{4,9} However, the examining physician may occasionally be confronted with an athlete who is in severe pain and has a massively swollen and tense thigh with very limited range of motion. In this situation, it is not surprising if the physician elects to measure compartment pressures to assess the risk of compartment syndrome. If compartment pressures are indeed elevated, a fasciotomy might be considered, ³ given the risk and consequences of fully developed compartment syndrome. There is, however, considerable controversy literature as to the existence of compartment syndrome in cases of this type.⁶

To address some of the issues involved in dealing with these injuries, we present three cases of severe quadriceps muscle contusions (classification of Jackson and Feagin⁴) resulting from acute, blunt trauma. The cases involve professional athletes who were monitored closely, and the progression of their injuries was documented with repeated follow-up MRI scans.