

Citation: Aronen JG, Garrick JG, Chronister RD, McDevitt ER. Quadriceps contusions: Clinical results of immediate immobilization in 120 degrees of knee flexion. *Clin J Sport Med.* 2006;16:383-387.

Clinical Question: In patients with quadriceps contusions, does immediate immobilization in 120 degrees of knee flexion when compared with previous studies on quadriceps contusion management, return the athlete to play more quickly than those previous interventions?

The purpose of this article was to identify whether an initial treatment of knee flexion administered in the first ten minutes of a quad contusion decreased return to play as compared to later intervention.

Data were collected over a period of 18 years from August 1987 to December 2005 in midshipmen playing sports at the USNA (United States Naval Academy). Athletes in this study reported immediately to the athletic trainer when a quadriceps contusion was sustained. Athletes were included in the study if they were unable to participate and if they could not sustain an isometric contraction of the quad in combination with a straight leg raise. The athlete was then immobilized in 120 degrees of flexion first with an elastic wrap while out at practice, and then with an adjustable brace that locked the knee in the same range. The brace was worn continuously for the next 24 hours while the athlete used crutches. After 24 hours the athlete was allowed to remove the brace and quad-stretching was instituted as well as isometric quad sets if there was no pain present. The athlete was allowed to play after strength was equal bilaterally and the athlete was pain free.

The results of the study show that the athletes treated returned to play pain-free in an average of 3.5 days following injury. Radiographs were administered 3-6 months after the injury and 1 out of the 23 with radiographs had myositis ossificans.

The category of grading was for therapy and the level of evidence according to the AAOS scale was a Level IV. It was graded as such because it was a case series.

The bottom line is that, according to this study, immobilizing the athlete in 120 degrees of flexion for 24 hours following the onset of the injury, is advantageous in returning the athlete to play.

This information can be useful to the athletic trainer because when working with the athletic population, quad contusions are often seen in practice. As always, we search for the most efficient and safe ways to treat injuries. The results of this study return the athlete to play rather quickly with no pain, full strength and range of motion. This particular practice may not be applicable, in terms of placing each athlete with a quad contusion in a brace because one may not have that available. The athlete also may not comply with continuously keeping his/her leg in a flexed position for 24 hours straight. This study also required that the athlete report his/her injury immediately and in athletic training, injuries are not always reported as soon as they occur.

The ATC would have to explain the rationale behind keeping the leg in a flexed position for that amount of time. One could give the background of the current study to the athlete and explain the goals of the treatment are to reduce pain and then, after the brace is removed, to regain strength and overall function. The patient should always know what to expect from the treatment given to them.