Transient neurapraxia

Athletes who sustain cervical spine injuries often manifest a syndrome termed transient neurapraxia.

Symptoms usually resolve in 15 to 20 minutes, but may last for 36 to 48 hours and include bilateral sensory impairment such as paresthesias, dysesthesias, and/or numbness as well as motor weakness ranging from mild paraparesis to complete quadriplegia.

Neck pain may be present, but is often absent. Historically, the term neurapraxia refers to a transient peripheral nerve injury after complete recovery. For the purposes of this study, the term neurapraxia refers to spinal cord injury as originally described by Torg et al.8 Neurapraxia from direct spinal cord injury shares some features with other injury patterns and may be misdiagnosed as a burner/stinger or brachial plexus injury, both of which are more prevalent. These injuries are caused by excessive distraction between the neck and shoulder or hyperextension with foraminal compression causing injury to the nerve root or plexus.

After sustaining a neurapraxic injury, many athletes deny any neck pain and are able to walk off of the field under their own power depending on the time course of improvement in neurologic function. Severe neurapraxic injuries associated with lingering profound neurologic deficits may warrant immobiliza- tion with a rigid orthosis.

After a complete neurological examination, the athlete is subjected to neuroimaging. This will often consist of plain radiographs and a computed tomographic (CT) scan to rule out a cervical spine fracture and magnetic resonance imaging (MRI) to assess the integrity of the discs, the posterior ligamentous complex, and persistent neural element compression of the spinal cord itself.

In a study of 5 elite athletes with transient neurapraxia injuries, Maroon et al observed that the injuries sustained in all 5 athletes occurred in the setting of multilevel degenerative disc disease and/or a congenitally small spinal canal with concomitant anterior compression from disc herniation or osteophyte forma- tion. Importantly, MRI studies demonstrated normal signal intensity in all 5 athletes.