

## **Posterior Dislocation of the Sternoclavicular Joint: A Case Report and Review of Anatomy and Management**

Fleming JA: Boulder Center for Sports Medicine, Boulder, Colorado, USA.

**Background:** Injuries to the sternoclavicular joint are very rare, accounting for only 3% of injuries to the shoulder girdle. Dislocations of the sternoclavicular joint make up less than 1% of all joint dislocations, and the ratio of anterior to posterior dislocations of the sternoclavicular joint have been reported at 20:1. Although an extremely infrequent injury, practitioners need to be able to recognize and appropriately manage posterior sternoclavicular joint dislocations in order to avoid potential injury to structures of the mediastinum, which could result in death.

**Purpose:** The purpose of this case study is to highlight the potential complications associated with posterior sternoclavicular joint dislocations and review the regional anatomy and management of these injuries. In addition, a case of an athlete who sustained a posterior sternoclavicular joint dislocation and was referred for physical therapy will be presented. To date, there have been no published scientific medical research articles involving rehabilitation following closed reduction of a posterior sternoclavicular joint dislocation.

**Case Description:** A 32-year-old female mountain bike racer suffered a posterior sternoclavicular joint dislocation during competition. At the emergency room, the injury was misdiagnosed as a shoulder contusion and neck strain. Five days later, the patient followed up with a local orthopedist secondary to continued severe pain, and the accurate diagnosis was made. Closed reduction under anesthesia was performed. The patient was referred to physical therapy following removal of her sling due to continued pain, limited range of motion, and weakness. Manual therapies directed to her shoulder girdle along with strengthening and stabilization exercises were performed. A home exercise program for strengthening and stabilization was given.

**Outcomes:** The patient was seen a total of eight visits over seven weeks. On the first treatment, seven weeks post-op, pain-free active forward elevation improved from 90 degrees pre-treatment to 120 degrees post-treatment. A home exercise program along with continued mobilization gradually improved pain-free active forward elevation to 155 degrees at discharge. Passive forward elevation improved from 135 degrees at initial evaluation to 175 degrees at discharge. QuickDASH scores improved from 38.6% at initial evaluation to 31.8% at the fifth visit and 20.5% at discharge. QuickDASH sports module score at initial evaluation was 75% and improved to 37.5% at discharge. The patient was able to return to competition 14 weeks post-op without complaints of pain. Subjective complaints at discharge included crepitus over the sternoclavicular joint with active forward elevation. At 2.5 year follow-up, QuickDASH score was 11.4% with the sports module scored at 18.8%.

**Discussion:** Posterior sternoclavicular joint dislocations are an infrequent injury and commonly misdiagnosed on routine examination. Proper recognition of this injury is crucial to the safety of the patient as vital structures may be compromised if left untreated. Physical therapy following closed reduction of a posterior sternoclavicular joint dislocation is not common practice, and this case presents an example of an athlete who was appropriately referred for rehabilitation to address impairments limiting her ability to return to competition.