Pediatric Tips & Tricks: Management of Posterior Sternoclavicular Joint Injuries

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Introduction
Posterolaterally displaced physeal fractures or dislocations at the sternoclavicular joint (SCJ) are rare in the childhood and adolescent populations and require prompt diagnosis and treatment to optimize outcomes and prevent possible life-threatening complications. We prefer open reduction and fixation for injuries with posterior displacement, with cardiothoracic “backup” in the rare event of vascular complication associated with the injury or its treatment. Outcomes are generally successful with pain-free range of motion and return to activity without disability.

Preoperative Evaluation
SCJ injuries are rare and a high index of suspicion, with a careful history and physical examination, are required to make the diagnosis. In addition to pain, up to half of patients present with symptoms such as dyspnea or dysphagia, and up to 25% of injuries are missed initially. Patients typically fall or sustain a blow to the lateral aspect of the shoulder and complain of “shoulder” pain. Asking the patient to place a finger where the site of maximal discomfort is can be helpful. Physical examination must include palpation of the entire shoulder and complain of “shoulder” pain. Asking the patient to place a finger where the site of maximal discomfort is can be helpful. Physical examination must include palpation of the entire shoulder girdle, with assessment of airway, breathing, circulation, and a neurovascular exam. Plain radiographs of the shoulder or clavicle often miss the diagnosis, although a serendipity (40-degree cephalic tilt) view may demonstrate the injury. A CT scan is suggested when there is clinical suspicion, and our cardiothoracic surgeons prefer the study is performed with contrast to assess for extravasation or compression (Figure 1).

Procedure
Our cardiothoracic team is on standby during the procedure, and several units of packed red blood cells are available. A sternotomy tray should be in the room, with the cardiopulmonary bypass machine immediately available.

The patient is positioned supine on a radiolucent table with a bump between the scapulae. The prepping and draping include the upper extremity, chest, and both sides of the

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Figure 1. Posterior sternoclavicular dislocation demonstrating brachiocephalic compression.
Postoperative Protocol
Patients are admitted overnight for monitoring. A shoulder immobilizer is utilized for 4-6 weeks, and physical therapy is considered after 6 weeks. Return to sports is permitted 6 months after surgery if patient is asymptomatic.

Discussion
Posterior sternoclavicular joint injuries can be potentially life threatening and require proper identification and treatment. Although pediatric literature for these injuries is sparse, closed reduction has a high rate of redisplacement, and open reduction and fixation is currently recommended in many treatment centers. Outcomes appear favorable, with Waters et al demonstrating full return to activity in 13/13 patients at an average of 22 months, and other authors reporting full return to function and excellent outcomes in acute and chronic settings.

References


