



POSNA

The Core Curriculum

Sternoclavicular dislocation

Objectives

1. Describe the anatomy of the sternoclavicular joint
2. Describe the age when ossification of the medial clavicular epiphysis occurs, and when fusion of the epiphysis occurs
3. Describe the anatomical features of sternoclavicular dislocation
4. Discuss imaging of the sternoclavicular joint
5. Discuss treatment of an anterior and a posterior dislocation of the sternoclavicular joint

Discussion

The sternoclavicular joint is unique in several ways. It is the only direct attachment of the upper limb to the axial skeleton. The joint is diarthrodial, but is bisected to a variable degree by a fibrocartilaginous meniscus, which is firmly attached to the first rib, with anterior and posterior attachments to the capsular ligaments. The anterior ligament is stronger. The ligaments attach to the medial clavicular epiphysis, so the physis is extraarticular. The medial clavicular epiphysis is the last in the body to ossify, at about age 18-20, and the last to fuse to the metaphysis, at about age 23-25. Most sternoclavicular dislocations are thus actually physeal fractures. The anterior dislocation is more common, usually secondary to indirect forces, from medial compression of the clavicle couple with a posteriorly directed force on the lateral clavicle. This type of injury can occur in sports, the posterior dislocation is more often a result of direct injury.

A tangentially directed radiograph, aimed 40 degrees cephalad, can demonstrate displacement of the medial sternoclavicular joint (or, more correctly, physis). CT scanning is also helpful. Anteriorly displacement of the lateral fragment can be reduced under local anesthesia, with traction on the abducted shoulder and gentle posterior pressure on the medial clavicle. In general, however, unless the displacement is severe, reduction is not mandatory. The shoulders are immobilized in a figure 8 splint. Redisplacement is common, and with the remodeling potential of the medial clavicle, further attempts at reduction are generally not worth the effort. Immobilization can be discontinued as symptoms permit. Posterior dislocations are more tricky. The brachiocephalic vein lies directly behind the clavicle, which can impinge on that structure. Significantly displaced posterior dislocations are reduced under general anesthesia, with traction on the shoulder and (usually) a towel clip on the medial clavicle to anteriorly reduce the clavicle. Some residual displacement is acceptable. Other than a recent report of subclavian artery pressure from a chronically posteriorly displaced medial clavicle, complications of instability or symptomatic malunions after sternoclavicular injuries are not present, except after the use of fixation pins. Recent publications on the subject absolutely decry any attempt at pin fixation of the medial clavicle, as death has resulted from migrating pins. A wire loop has been reported for fixation.

References

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