ORTHOSPORTS

QUESTION FOR PHYSIOTHERAPISTS

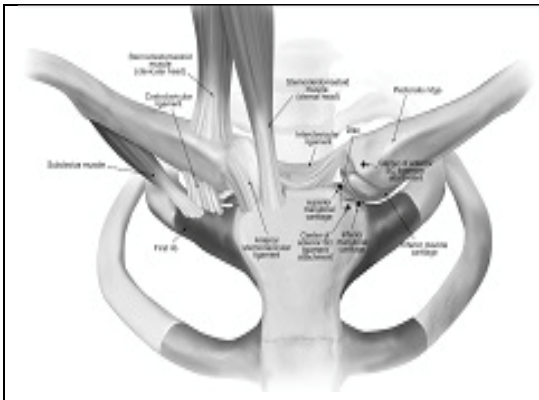
QUESTION | I have a patient who injured his shoulder 4 weeks ago in a motor bike accident. He describes having a hoarse voice initially which has now settled. He was discharged from emergency with the diagnosis of an AC joint sprain but it turns out that he has a posterior sternoclavicular dislocation. He has very few symptoms now. Will this definitely need surgery?

ANSWER | Traumatic sternoclavicular joint injuries are rare. Anterior injuries are far more common than posterior injuries but posterior dislocation is much more serious and can present with difficulty breathing and swallowing, numbness or arm swelling. Life-threatening complications can present at the time of injury but can develop later as well.

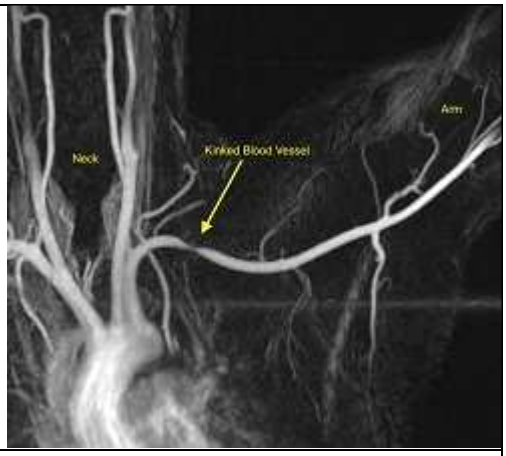
The sternoclavicular joint is very mobile and moves in all planes including rotation. It has very strong ligaments made up of the intra-articular disk, costoclavicular, capsular and interclavicular ligaments.

Car accidents and sporting injuries make up more than 80% of posterior sternoclavicular dislocations. In cases of a sprain, the ligaments remain intact and there will be pain and swelling but no instability. If the ligaments become more stretched, swelling and pain increase and there is subluxation of the joint. There is often pain with movement of the arm and the subluxation will be more obvious with the arm above the head.

Complete dislocations usually present with severe pain and often breathing or swallowing difficulty. Clinical examination to determine the direction of the dislocation is not always easy because of swelling. The medial clavicle is usually very prominent with an anterior sternoclavicular dislocation and this is more easily seen with the patient lying down.

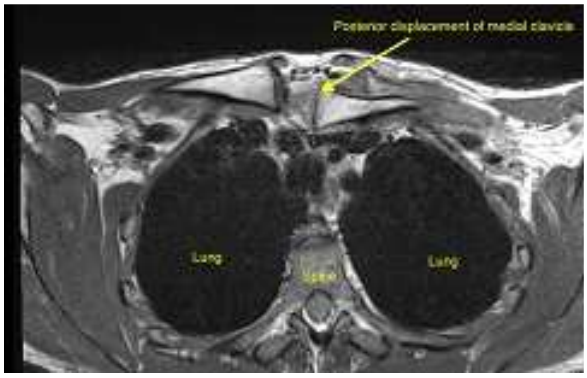


Anatomy of the Sternoclavicular joint from JBJS American 96(19) October 2014 Millet et al

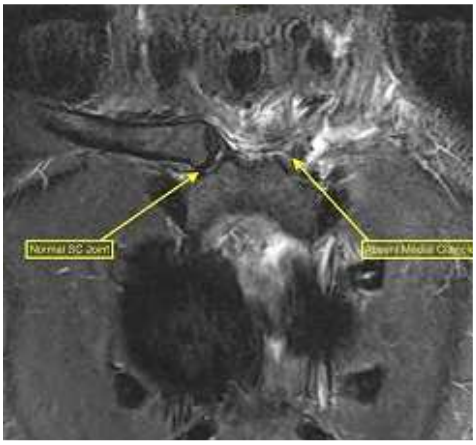


Kinked blood vessel

Imaging - Standard xrays of the sternoclavicular joint are difficult to interpret because the medial clavicle, ribs, sternum and vertebrae overlap. The serendipity view is taken tilted 40°up to reduce this overlap but has been replaced by CT scanning because it is more accurate and these days is readily available and reasonably cheap. If the joint is dislocated posteriorly a CT scan of the chest and/or an MRI will be needed to look at the great vessels, trachea and oesophagus.



Horizontal Slice MRI



MRI showing absent medial clavicle at the sternum

Treatment
Strains of the joint are treated with a sling or figure of 8 strap for up to 6 weeks. It is worth while trying to reduce an anterior dislocation (usually under anaesthetic) but good long-term results have been reported with nonsurgical management as well. Generally open surgery is not used for anterior dislocations acutely.

Posterior Dislocation
These patients are usually managed via the emergency department due to the high energy of the injury and the associated breathing or swallowing complaints. Input from a cardiothoracic surgeon may be needed. Once the diagnosis is made the patient is taken to the operating theatres and a closed reduction performed under general anaesthetic. The joint is usually stable once it has been reduced and open surgery is rarely required.

Unreduced posterior dislocations can lead to thoracic outlet syndrome, vascular compromise and damage to 'vital' structures by the clavicle. These can worsen with time.

Unfortunately your patient will definitely need surgery. This is typically performed by an Orthopaedic surgeon and a Cardiothoracic surgeon together in the cardiothoracic operating suite to make the procedure as safe as possible. There will be scarring which needs to be released around the great vessels and the articular disk will need to be excised. The joint will need to be stabilized by either sutures or a tendon graft and a sling worn for 6 weeks to protect the repair. Typically an abduction pillow is used to externally rotate the arm to neutral during this time.

Most Orthopaedic surgeons will not treat this injury in their careers and unfortunately the diagnosis will be missed if there is not a high index of suspicion on the part of the examining clinician. Early surgery is far simpler than delayed treatment and urgent immediate referral is required if you suspect this diagnosis.

Dr Doron Sher