What is a sternoclavicular joint injury?

Sternoclavicular (SC) joint injury consists of ligament trauma to the joint connecting the breastbone [sternum] and the collarbone [clavicle]). It is an uncommon injury.

When a ligament is subjected to acute strain, it may either stretch or tear, partially or completely. Such tearing of a ligament is known as a sprain and ranges from microscopic injury to complete disruption. This injury can occur either at its insertion on either bone, but most commonly occurs in its mid-substance. The sprain may result in partial joint displacement ("subluxation") or complete separation of the joint surfaces ("dislocation"). Displacement can occur either anteriorly (collarbone translates towards the front) or posteriorly (collarbone displaces towards the back).

How our shoulder experts can help

Our shoulder experts will diagnose and treat your condition using the latest advances in orthopaedic technology. To request an appointment with our physicians, please call 202-787-5601.

How does sternoclavicular joint injury occur?

There are two common mechanisms of injury. In the first, a direct blow or landing on the side of the body can indirectly load the SC joint, leading to disruption of the ligaments around the SC joint. Examples include a side-blow in a car accident or a pile-on in a football game.

Less commonly, a direct force to the collarbone (clavicle) near the joint or the sternum (breast bone) can also cause joint disruption.

Risk of injury also increases with contact sports such as football, soccer or hockey.

What are the symptoms of sternoclavicular joint injury?

- At the time of injury, severe pain at the SC joint
- Occasionally symptoms may be severe due to posterior displacement of the medial clavicle, and can include hoarseness, difficulty swallowing, difficulty breathing, a sense of fullness about the neck or a choking sensation
- More chronic symptoms include pain around the SC joint, crepitus (crackling noise) and complaints of instability (clavicle feels like it “moves” anteriorly or posteriorly during activities)
- Some patients will experience pain over the SC joint when reaching across their body

How is sternoclavicular joint injury diagnosed?

History and physical exam are sufficient to establish a diagnosis in most cases. Acute SC joint pain accompanied by complaints of difficulty swallowing or breathing is a good indication of this condition. Other common signs include swelling, bruising and, occasionally, prominence of the medial (near midline) clavicle.

X-rays are often difficult to interpret due to the multiple overlying structures and the complex 3-D anatomy of the normal chest. However, a “serendipity” view, in which the X-ray view is angled superiorly (at an angle upward towards the head), may yield some indication of the integrity of the sternoclavciular joint. Definitive evaluation requires 3-D imaging, such as a CT (Computerized Tomography) or MRI (Magnetic Resonance Imaging) scan.

Are there any special tests?

Occasionally patients with chronic symptoms may have a positive bone scan. This test involves administration of an IV contrast agent with detectable radio-isotope markers, followed by X-ray like scanning to see if there is increased uptake over the SC joint. Increased uptake suggests joint involvement, such as seen in acute injury or chronic arthritis.

How is SC joint injury treated?

Most SC joint injuries are subluxations (in which the joint is partially separated) rather than dislocations (in which the joint surfaces are completely displaced and remain unopposed). Treatment is influenced by this difference.

Non-operative treatment is indicated for most patients, who are usually able to eventually resume pre-injury activities. Subluxations and anterior (towards the front) dislocations are usually treated non-operatively. Initial treatment consists of ice, pain medication and sling immobilization. Non-operative treatment is usually successful, with full return to activity and return of normal strength for most SC joint sprains. Return to activity is based on type of sport and the position played, the arm injured (dominant versus non-dominant), and the severity of the sprain.

Residual deformity (prominence or relative loss of normal contour) of the medial end of the clavicle can be expected following SC joint injury, but in and of itself doesn't require treatment.

Operative treatment is uncommon and reserved for the few patients with respiratory distress due to posterior displacement of the medial clavicle, painful prominence of the medial clavicle, or those who develop painful post-traumatic arthritis of the SC joint.

What are the complications of treatment?

Possible complications of non-operative treatment:

- Persistent pain or post-traumatic arthritis following SC joint injury are uncommon.
- In acute posterior dislocation, the biggest risk is to the surrounding vital structures near the injury, e.g, the trachea (windpipe), esophagus (tube from mouth to stomach), and important vessels immediately behind the medial border of the clavicle. Failure to recognize compression of vital structures due to posterior displacement of the medial end of the clavicle can be life-threatening.

Possible complications of operative treatment:

Surgical intervention is uncommon. If a patient continues to have pain and/or dysfunction after appropriate non-operative treatment, surgery to resect (surgically remove) the medial end of the clavicle may be warranted. Surgical resection of the medial clavicle in cases of chronic post-traumatic pain following SC Joint injury has few surgical complications, although care must be taken to avoid overly-generous resection (and inadvertent de-stabilization of the SC joint). Operative complications not specifically related to the SC joint include pain, bleeding (uncommon), infection (<1percent), nerve injury (rare), stiffness, problems with anesthesia, and inability to return to previous level of pre-injury activity.

When can you return to your sport/activity?

Over time, symptoms typically will resolve. The exact healing time varies with the severity of the injury (mild sprain, subluxation or dislocation), which arm was injured (dominant versus nondominant), and type of sport and position played. Surgical treatment requires a period of convalescence to permit tissue healing.

How can a sternoclavicular separation be prevented?

Injury to this joint can be anticipated and, to some degree, be prevented through use of appropriate and properly-fitted protective equipment (such as chest and shoulder pads) Proper

technique may avoid injury, such as instruction in how to fall and/or land. Most injuries to this joint, however, are not preventable and due to traumatic injury.