Dynamic Chiropractic

X-RAY / IMAGING / MRI

Post-traumatic Osteolysis

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There is an uncommon entity which is often missed initially or misdiagnosed as a Type I strain/sprain of the acromioclavicular joint: term post-traumatic osteolysis of the distal clavicle. Generally, the joint space between the acromion and clavicle is .3 to .8 cm. After an injury to the shoulder, such as sprain of the acromioclavicular joint, resorption of the distal clavicle may occur. The osteolytic process which occurs is associated with mild to moderate pain in the shoulder, usually being within two months following initial injury.

The typical history is direct trauma to the acromioclavicular joint associated with acromioclavicular joint dislocation or separation, clavicular fracture, and glenohumeral dislocation. The resorption of the distal clavicle generally is not visualized on plain films until three to four weeks following the onset of symptoms. These patients are typically between the ages of 20 and 40 and the dominant shoulder is usually the one affected. Other instances when this entity will occur is with chronic microtrauma to the acromioclavicular joint, usually associated with certain occupations and sports activities. The most common occupation associated with resorption of the clavicle is pneumatic drilling. The most common sporting activities associated with this lesion are weightlifting, pitching, gymnastics, and judo.

If post-traumatic osteolysis of the clavicle is suspected, additional views of the A-C joint can be performed to better demonstrate the distal clavicle. A 15 degree cephalad angulated viewed of the A-C joint can be performed. Generally, the distal clavicle will have distinct and smooth margins. There should be no more than 3 mm of difference between both A-C joints. The 5 mm joint should be evaluated with suspicion.

There are four phases of post-traumatic osteolysis: latent, early, resorption, late resorption, and repair. In the latent phase, which lasts from three to four weeks from the onset of symptoms, there are no radiographic findings. The films appear normal. If a bone scan is performed, there will be a localized increase uptake in the distal clavicle which indicates the increased metabolic activity. The early resorption phase will progress over a variable time period, usually 12 to 18 months. The radiographic findings include: loss of articular cortex, fraying, and cuplike deformity of the articular surface. Commonly there will be subchondrial cyst formation and widened joint space. Later in the resorption phase, the distal clavicle will be resorbed, sometimes as much as 3 cm. In the repair phase, which takes four to six months, radiographic findings will be indistinct and incomplete. Usually there is evidence of progressive reconstitution of the normal bone density and sclerosis within the rarefied bone. If the resorption is minimal, complete return to a normal-appearing clavicle will occur. If there is incomplete healing, there will be a residual widening of the A-C joint and smooth tapering of the distal clavicle.

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