

# Hyperabduction Syndrome of the Upper Extremities and Associated Conservative Treatment

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Upon extensive hyperabduction of the upper extremities, the neurovascular structures located beneath the coracoid are compressed. Commonly, the structures involved are those located in the subcoracoid space and the costoclavicular space. The vessels and brachial plexus which are involved are subject to the effects of stretching and compression at two points. The first is where they pass beneath the coracoid process posterior to the pectoralis minor. The second is between the clavicle and the first rib, in which case it is referred to as the costoclavicular syndrome.

The symptoms usually occur in relationship to the anatomical position of the patient during sleep. Numbness and paresthesias present centripetally with the fingers first and then the hands and arms. Pain is commonly not significant. Absence of the radial and ulnar pulses by full abduction of the arm is not diagnostic, since over 80% of normal individuals present with this finding.

The Allen test and the Wright test may contribute to the diagnosis but should also not be considered diagnostic of themselves. Range-of-motion serial arteriography will demonstrate obstruction to the flow of dye in the respective vessels. Occasionally, a hypersensitive vessel may remain in spasm several minutes after adduction of the arm.

Usually, avoiding the symptom-inducing position eliminates the episodes. Hyperabduction must be avoided during sleep. In graduate school, patients were instructed to wear a belt to bed and tie a cord from each wrist to the belt at the proper length to prevent elevation of the arm above the level of the shoulder. The occupational duties which require use of the extremities over the head are forbidden. Occasionally, short wave diathermy may be applied to the area of symptoms to enhance the recovery from symptoms. However, this is usually not necessary. In the unlikely event that systems persist, referral for resection of the first thoracic rib and pectoralis minor tendinous attachments is necessary.

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