Patient: This athlete is a 22 year old professional minor league baseball pitcher. His past medical and surgical history involves a high school (approximately five years ago), an orbital fracture with posterior wall and orbital floor involvement. Despite successful surgical reconstruction, and surgical ulnar collateral ligament reconstruction of the elbow, the athlete complained of posterior elbow pain and discomfort was present. This pain was decreased postoperatively and he continues to pitch successfully.

Case Report

Introduction

Thoracic Outlet Syndrome (TOS) involves a variety of symptoms and complications regarding anatomical structures in the shoulder and neck. The diagnosis can be rooted from an anatomical or functional underlying cause. Due to its generalized terminology, TOS has been subcategorized into three different types of TOS. These categories are defined as anatomical, venous, and arterial. Arterial abnormalities and arterial complaints related to the diagnosis of thoracic outlet syndrome prior to escalated and irreversible damage. Arterial complaints caused by internal thoracic embarrassment need to be discovered and treated as there is no direct method to successfully treat thoracic outlet syndrome.

Anatomy

The thoracic outlet comprises of the region between the clavicle and the clavicular notch of the shoulder and neck. The anatomical borders of the thoracic outlet are located at the clavicle, costoclavicular ligament, subclavian, and anterior scalene anteriorly; the first rib posteriorly; and the scalene muscles observed with overhead motion. Narrow anatomical frame and specific narrow rib angle noted.

Rehabilitation and Results

Initial evaluations diagnosis involved shoulder impingement. After two months of unsuccessful conservative treatment, the athlete was seen for a follow up with a physician for a subacromial space steroid injection to alleviate impingement pain. Continued monitored therapeutic exercises and manual therapy was prescribed. Pain relief was noted to be decreased for 2-3 weeks before reoccurring. Two more months of conservative treatment were unsuccessful. Further imaging research suggests that conservative treatment tends to be the most commonly prescribed when TOS is present. This method intends to focus on decreasing vascular and nerve compression through the thoracic outlet, crowded blood vessels, nerves, and muscles are found. There are three different potential spaces of this area that can cause the result of the pathology, the interscalene triangle, costoclavicular space, and subclavicular minimal proximal. The proximal aspect of the outlet involves the interscalene triangle and costoclavicular. Both involve the greatest clinical relevance in the role of TOS on the neurovascular bundle. The interscalene triangle is bordered by the anterior scalene, middle scalene, and clavicle. Enclosed in interscalene triangle are the ventral rami of the 3rd to 5th cervical nerve roots, the superior, middle, inferior trunks of the brachial plexus, and the subclavian artery. The costoclavicular space is bordered by the medial aspect of the clavicle, the first rib, and upper border of the scapula. The pectoralis minor space originates from the muscles base of the third to fifth ribs and attachment at the apex of the medial border and superior surface of the clavicular process (Boseaart, et al. 2010).

Discussion and Summary

There are many variations of deeper paths to the diagnosis involved in the simple term of TOS. As the diagnostic name suggests, it is important to address the patient’s presenting complaints. Variations of subcategorized diagnosis are needed to determine a proper treatment method. As symptoms affect several different locations in the body, the local distinction of the thoracic outlet is essential. From this research, there is overlap in representations involved in other pathologically conditions. For example, signs and symptoms of TOS may commonly be mistaken for scapular impingement, cervical radiculopathy, cervical spondylosis, DeQuervain’s tenosynovitis, or lateral epicondylitis. It is important to have proper differential recognition to treat the diagnosis of TOS to provide the greatest opportunity for optimal recovery. Unfortunately, the multitude of nonspecific symptoms and challenges in the diagnosis can delay treatment and increase the rate of complications. This method intends to focus on decreasing vascular and nerve compression through the thoracic outlet, crowded blood vessels, nerves, and muscles are found. There are three different potential spaces of this area that can cause the result of the pathology, the interscalene triangle, costoclavicular space, and subclavicular minimal proximal. The proximal aspect of the outlet involves the interscalene triangle and costoclavicular. Both involve the greatest clinical relevance in the role of TOS on the neurovascular bundle. The interscalene triangle is bordered by the anterior scalene, middle scalene, and clavicle. Enclosed in interscalene triangle are the ventral rami of the 3rd to 5th cervical nerve roots, the superior, middle, inferior trunks of the brachial plexus, and the subclavian artery. The costoclavicular space is bordered by the medial aspect of the clavicle, the first rib, and upper border of the scapula. The pectoralis minor space originates from the muscles base of the third to fifth ribs and attachment at the apex of the medial border and superior surface of the clavicular process (Boseaart, et al. 2010).

References


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