Venous Thoracic Outlet Syndrome with Paget-Schroetter’s Syndrome in a Male Collegiate Baseball Player

Jang J*, Self C†, Rosen AB*: *University of Nebraska at Omaha, Omaha, NE, †Creighton University, Omaha, NE.

Context
- Venous thoracic outlet syndrome is characterized by significant swelling of the upper extremity.¹
- Paget-Schroetter syndrome, a thrombosis of the subclavian vein is caused by repetitive injury in young, healthy people.¹

Background
- NCAA Division I baseball middle infielder (20-year old male, height=182.1cm, mass=83.5kg).
- No other previous injury to his upper extremity was reported or documented.
- Patient complained of discomfort in his right upper extremity on January 13, 2017.

Signs and Symptoms
- Patient reported to his athletic trainer after weight lifting on January 2017 and sent to ER on the same day.
- No pain or abnormal sensations while exercising, but discomfort in right arm, shoulder and pectoral muscles after.
- Sudden swelling, reddish-purple discoloration, and cold sensations from his right hand up to the right shoulder.
- Decreased radial pulse.
- A thrombosis of the right axillary and subclavian vein with multiple collateral vessels.

Differential Diagnosis
- Neurogenic or arterial thoracic outlet syndrome
- Lymphatic obstruction
- Intramuscular hemorrhage

Treatment
- Prescribed Xarelto (15 mg/day) for three months to promote recanalization of his right subclavian vein.
- An arm sleeve with a gauntlet for 15-20 mmHg compression was prescribed for symptom relief.
- He visited a physical therapist once a week for six weeks and completed internal and external passive range of motion and stretching activities with the arm below 90º.
- Pulsed, non-thermal ultrasound was used on the pec minor and scalene and deep tissue mobilization and stretching.

Uniqueness
- Venous thoracic outlet syndrome is an uncommon condition in baseball players.
- Paget-Schroetter’s syndrome accounts for only 1-2% of reported venous thrombosis.
- After three months of taking anticoagulants and rehabilitation, he was not able to recanalize his right subclavian vein.
- Numerous new collateral capillaries had developed that compensated for the blocked subclavian vein.
- No surgical intervention (e.g. rib resection) was completed as it most likely would be chronically occluded at that time.

Conclusion
- Clinically, venous thoracic outlet syndrome is difficult to evaluate and diagnose and is especially complex in cases of Paget-Schroetter’s syndrome due to its idiopathic nature.
- Paget-Schroetter’s syndrome most commonly occurs in young patients, specifically males, usually after vigorous upper extremity activity or exercise, and more common in the right limb.²
- Sports medicine professionals should be suspicious of these conditions and conduct a thorough initial evaluation in baseball athletes with exercise-induced swelling, discoloration, and bilateral temperature differences.

References