Thoracic Outlet Syndrome with Secondary Paget Schröetter Syndrome: A Rare Case of Effort-Induced Thrombosis of the Upper Extremity

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CASE

A 19-year-old man presented to the emergency department complaining of two days of right arm pain and swelling. The pain started while lifting weights. He did not experience a pop or pulling sensation. He stated his arm felt a little cold but otherwise denied numbness or tingling. He denied chest pain, neck pain or shortness of breath.

Examination demonstrated a diffusely edematous right upper extremity. Distal pulses were strong and regular. His fingers had a dusky appearance and the entire arm was cool to touch. Range of motion, motor and sensory exam were normal. Heart and lung exam were normal. A computed tomography (CT) angiogram of the chest and upper extremity were performed. The chest CT revealed an axillo-subclavian thrombosis (Figure).

Figure. Computed tomography angiogram chest reveals a thrombosis of the right subclavian and axillary veins with subtle filling defect at the junction of the right subclavian, jugular and brachiocephalic veins (red arrow).

DIAGNOSIS

Thoracic outlet syndrome (TOS) with secondary Paget Schröetter Syndrome (Effort Thrombosis of the upper extremity)

Upper extremity deep vein thrombosis (DVT) is extremely rare (approximately 2/100,00 people per year), accounting for only 1 to 4% of all cases of DVT.[1]

Thoracic outlet syndrome is a compression of the neurovascular structures in the area superior to the first rib and posterior to the clavicle. Brachial plexus (95%), subclavian vein (4%), and subclavian artery (1%) are affected. Women more frequently have neurologic thoracic outlet syndrome (TOS) while men more frequently have venous TOS.[4]

Paget Schröetter Syndrome is an effort-induced thrombosis of upper extremity. First defined in 1884, it was described as a thrombosis of the axillary and subclavian veins. It is the leading vascular disorder in athletes, and males experience it more commonly than females.[2,3]

Diagnosis and treatment consists of a venous duplex and a confirmatory venogram.[2,3] Catheter directed thrombolysis with subsequent first rib removal is recommended to produce the best results.[2,3] Oral anticoagulation is generally recommended for 3 to 6 months.

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