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# 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).

## 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 2/100,000 people per year), accounting for only 1 to 4% of all cases of DVT.<sup>1</sup>

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.<sup>4</sup>

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.<sup>2,3</sup>

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



**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).

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