



Visual Case Discussion

Right primary upper extremity deep vein thrombosis, Paget Schroetter syndrome, in a 55-year-old man

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A 55-year-old man arrived to the emergency department for two days of right upper extremity swelling. The swelling encompassed the entire right arm from the shoulder to the fingertips and has been progressively increasing. He has never had this before and his wife got concerned when she noticed the right side of his face was swollen with intermittent slurred speech. He denied any pain. He never had this type of swelling before. Classically, Paget Schroetter syndrome also known as effort thrombosis occurs due to first rib dysfunction with repetitive hand use in younger individuals.¹ His presentation was not typical for Paget Schroetter syndrome

as he denied any repetitive motion of the right upper extremity, denied trauma, and he is right hand dominant. He denied any headache, chest pain, shortness of breath, parasthesias, numbness, tingling, or weakness of the right arm. He denied any family history of hypercoagulable diseases. He denied tobacco, alcohol, or recreational drugs. His only medical history included sleep apnea and hypertension. His vital signs upon presentation were: Temp 36.9 Celsius, heart rate 109 beats per minute, blood pressure 122/82 mmHg, respiratory rate 18, SpO₂ 95% on room air. Physical examination pertinent for swelling to the right lower mandible, cranial nerves

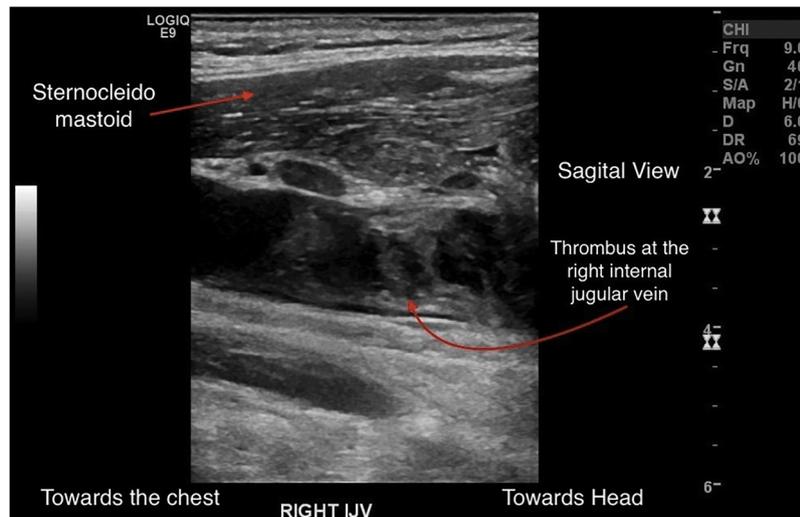


Fig. 1. Ultrasound of the right upper extremity showing a large clot at the right internal jugular vein.

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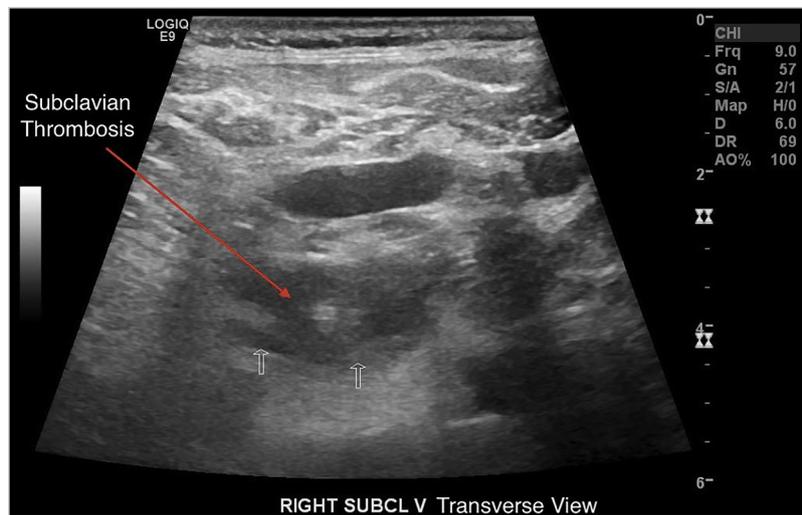


Fig. 2. Ultrasound of the right upper extremity showing non-compressible right subclavian vein.

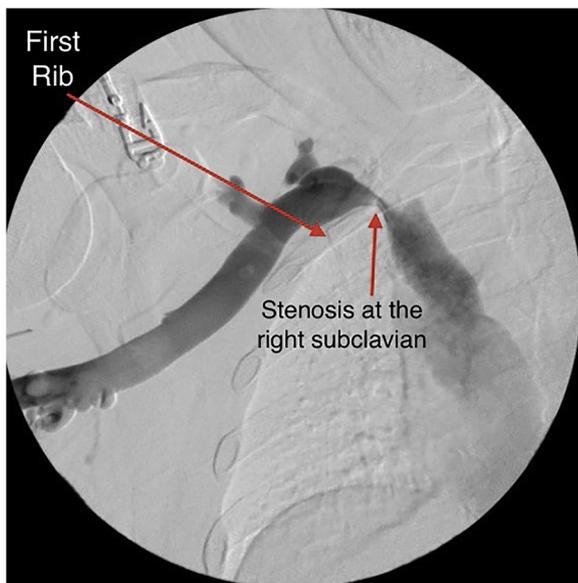


Fig. 3. XR Venography showing stenosis at the right subclavian vein just distal to the right first rib with distal enlargement showing extensive clot burden.

2–12 intact, normal speech, motor strength 5/5 at the bilateral upper and lower extremities, intact motor and light touch sensation to radial, medial, and ulnar nerves bilaterally. Normal finger to nose bilaterally. Circumferential non-pitting edema of the right upper extremity from the shoulder to the fingers. 2+ radial pulses bilaterally. Full range of motion of the neck. There were no signs of acute respiratory distress, his lungs were clear to auscultation bilaterally, and his heart was a regular rate and rhythm. Laboratory work was non-contributory with a normal PT/INR, PTT, no anemia, or electrolyte abnormalities. An ultrasound of the right upper extremity was performed showing a thrombus at the right internal jugular vein, which extended into the right subclavian vein, Figs. 1 and 2. He was admitted to the hospital and a XR Venography, the gold standard of treatment,¹ was performed on both upper extremities that found a large thrombus at the right subclavian vein with a high grade stenosis, Fig. 3. 4 mg of tissue plasminogen activator was given through a microsheath. He subsequently had a partial right first rib resection, which is an essential part of management.² Along with a right brachial plexus neurolysis, and right anterior scalenectomy with resolution of the stenosis seen at the right subclavian vein. He was started on apixaban, discharged, and had continued resolution of the thrombus a month later upon repeat ultrasound.

Supplementary material

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.visj.2018.12.005.

References

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Questions

- What is the incidence of Paget Schroetter's syndrome?
 - 1-2 cases in 100,000
 - 1-2 cases in 1,000,000
 - 1-2 cases in 10,000
- What is diagnostic and therapeutic in Paget Schroetter's syndrome?
 - Ultrasound of the upper extremity
 - Venography
 - Computer topography (CT)
 - MRI
- What treatment modality is essential towards resolution of Paget Schroetter's syndrome?
 - Anticoagulation
 - First rib resection
 - Antibiotics
 - Supportive Care

Answers

- 1-2 cases in 100,000. Explanation: A Sweden study showed that there were roughly 1-2 cases out of 100,000 people per year.¹
- Venography. Explanation: Venography is the only modality that can be both diagnostic and therapeutic. Ultrasound can make the diagnosis itself depending on the quality of the images, but only Venography can also be therapeutic.¹
- First rib resection. Explanation: A partial first rib resection is necessary to remove the obstruction causing the stenosis that resulted in the deep vein thrombosis. Anticoagulation by itself does not remove the stenosis and thrombi will reoccur.²