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Right Arm Pain, Color Change and Swelling in a 17-Year-Old Male Baseball Pitcher

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Describe role of Submitting/Presenting Trainee in this project: The submitting trainee performed the chart review, literature search, and writing of the entire case report.

Background, Objectives/Goal, Methods/Design, Results, Conclusions

Case History: A 17-year-old right-hand dominant male baseball pitcher presented to the sports medicine clinic for evaluation of right arm pain, color change, and swelling. The patient described cramp-like pain in his biceps and forearm and intermittent tingling along the dorsum of his 2nd through 5th fingers. Sixteen days prior to presentation, he was playing catch when he felt a sudden sharp pain in his medial elbow. He rested his throwing arm, but 4 days later his arm became swollen and blue. By the time he presented to an urgent care 4 days later, his elbow had changed from blue to red. 3-view x-ray of his elbow and Doppler ultrasound (DUS) of his right upper extremity (RUE) were obtained and results were reportedly normal. He was placed in a sling and told to rest for 3 weeks. Over the next several days, the swelling worsened and spread down to his fingers which led him to be seen at the clinic

Physical Exam:
The patient was nontoxic appearing with vital signs within normal limits. His RUE had 2+ pulses but with delayed capillary refill. The RUE had a slight purple hue, non-pitting edema from his deltoid down to his hand, and venous congestion in his pectoralis and biceps region when his arm was overhead. He had mild tenderness to palpation (TTP) at the medial epicondyle, humerus, and flexor-pronator complex but denied TTP elsewhere. RUE range of motion was normal but with pain at end-range, and RUE strength was 4 out of 5 with elbow flexion/extension, pronation/supination, and grip. The remainder of his physical examination, including his head, neck, heart, lung, and neuro exam, was normal.

Tests and Results:
Twenty-four hours after discharge from the sports medicine clinic, the patient reported worsening RUE pain and swelling, and he was sent to the emergency room. MRA and MRV chest with arms abducted and adducted were obtained. Adduction views showed high-grade narrowing of the medial right subclavian vein, and abduction views showed complete occlusion of the vessel. RUE DUS was repeated and demonstrated a non-occlusive thrombus in the medial right subclavian vein that was not seen on prior DUS.

Final Diagnosis: right subclavian venous thrombus secondary to Paget-Schroetter syndrome.

Discussion

Paget-Schroetter syndrome (PSS) is a primary thrombosis of the axillary-subclavian venous system and is associated with strenuous and repetitive activity of the upper extremities. Although our patient's physical exam findings were classic for PSS, prompt recognition and referral did not occur, highlighting the rarity of this diagnosis and the need for further education on PSS among healthcare providers for athletes. Compression ultrasonography with Doppler remains the recommended initial imaging, but our patient had an initially normal ultrasound, highlighting the limitations of ultrasonography and the importance of obtaining venography when there is a high index of suspicion for PSS.

Outcome:

The patient was admitted to the hematology service and treated with rivaroxaban 15mg q12hr. After discharge, he was referred to a thoracic outlet syndrome specialty center where he underwent 1st rib resection and scalenectomy.