Progressive Shortness of Breath and Hypoxia in an Adolescent Female Athlete: A case report

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History of Presenting Illness

Patient:
Previously healthy 16 year-old female

Chief Complaint:
2 months of progressive shortness of breath

History:
• First noticed symptoms at basketball practice after period of inactivity due to COVID
• Patient reports dyspnea with minimal exertion
• SpO2 in 80s on home pulse oximeter following exertion
• 40 lb unintentional weight loss over same time period

Physical Exam and Case Details

Physical Exam:
• Vital signs significant for SpO2 87-88% with exertion, SpO2 90-91% with rest
• Cardiovascular: RRR, no murmurs or rubs, strong radial pulses
• Respiratory: normal work of breathing, clear to auscultation, no wheezes or crackles
• Extremities: warm and well perfused, no edema

Case Details:
• Initial laboratory work up reveals elevated D-dimer. CT scan confirms bilateral pulmonary embolus with right middle lobe strain confirmed on echocardiogram. Ultrasound of extremities reveals a non-occlusive VTE in her left arm consistent with Paget-Schroetter Syndrome.
• Elevated cardiolipin IgG and elevated PTT raise concern for anti-phospholipid syndrome (APS).
• The patient is started on anticoagulation with plan to taper dose at home

6 weeks later:
• Patient presents with worsening dyspnea following reduction of anticoagulant dose
• CT angiogram initially described as bilateral ground glass opacification with improvement in thromboembolic clot burden.
• Over read of CT scan, cardiac catheterization and V/Q scan reveal underlying diagnosis

Diagnostic Evaluation:

Initial Presentation

• D-dimer: 3.8 (ref range <0.5)
• Cardiolipin Antibody IgG: 27 (ref range 0-14)
• PTT: 44.1 (ref range 28-37)
• Histone antibody IgG: 2.4 (ref range <0.9)
• Labs within normal limits: Cardiolipin Antibody IgM, Anti thrombophilic III: 116, Protein C antigen, Protein S antigen, PT/PTT Lupus anticoagulant, ANA, Factor V Leiden, Fibrinogen A2

6 weeks later:
• Cardiolipin AB IgM 14 (ref range <13)
• Labs within normal limits: D-dimer, BNP, CRP, ESR, SARS-COV-2 AB IgG, ANA, ANCA, Von Willebrand antigen, M. Pneumonia AB IgG

CT Scan (above): Chronic pulmonary embolism with persistent clot in the posterior right and lateral basal segments compatible with areas of known chronic pulmonary embolism

V/Q Scan: mismatched ventilation/perfusion in posterior and lateral basal segments compatible with areas of known chronic pulmonary embolism

Cardiac Catheterization(below): Moderate pulmonary hypertension (57/26) that responds slightly to nitric oxide (43/20)

V Leiden, Fibrinogen AG
PT/PTT Lupus anticoagulant, ANA, Factor V Leiden, Fibrinogen A2
Histone AB IgG: 2.4 (ref range <0.9)

ADDITIONAL KEY INFORMATION


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