More Than a Panic Attack:

A Rare Cause of Dyspnea in a Patient with Hydrocephalus

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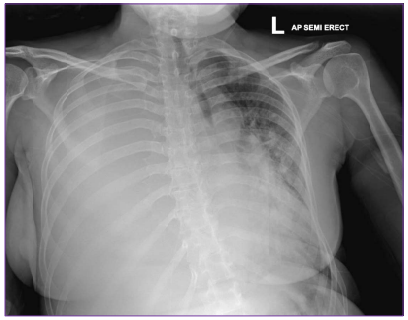
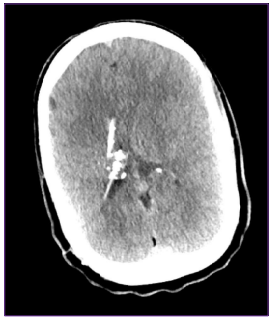
INTRODUCTION

In patients with hydrocephalus and cerebrospinal fluid (CSF) shunts, rare complications such as CSF hydrothorax must be considered.

Dyspnea is a common ED complaint, typically cardiopulmonary in origin.

This case highlights an unusual, clinically silent tension hydrothorax from a ventriculopleural (VPL) shunt.





DISCUSSION

- VPL shunts: used when peritoneum unsuitable for CSF diversion; higher complication rates vs VP shunts
- Complications include: pleural effusion, infection, hydrothorax, overdrainage
- Clinically significant tension hydrothorax is rare— most reported cases discovered postmortem
- Patient's stable appearance delayed diagnosis of a life-threatening process

PATIENT PRESENTATION

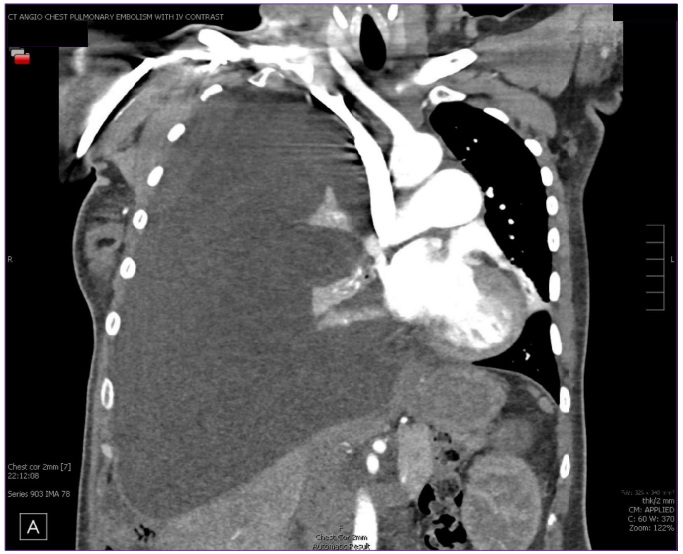
Patient Information
40-year-old female with Chiari I malformation, hydrocephalus (VP shunt in childhood, later revised to VPL).

Chief Complaint
Shortness of breath described as a "panic attack" and 2 weeks of bilateral leg swelling.

Past Medical History
"Many surgeries" for hydrocephalus, vague thyroid history, OCP use. No chest pain, cough, URI symptoms.

Vital Signs
HR 117 BP 156/80
RR 20 T 36.9
SpO_2 98%
(initially read as 65%).

Physical Exam
NAD, Mild tachypnea, diminished breath sounds bilaterally, bilateral pitting edema, mild proptosis, anxious



Medical Decision Making

In stable patients with concern for pleural drainage siphoning CSF from the brain → consider deferring thoracentesis may be until shunt type confirmed

Monitored on continuous cardiac/oximetry; patient remained stable despite critical imaging, suggests slow pleural fluid accumulation

Transferred to original neurosurgical center for definitive management without acute intervention required in ED

WORKUP

Labs, EKG, DVT Study
unremarkable except elevated D-dimer

Chest XR
Opacification of right thorax, mediastinal shift

CT Angio - Chest
➡ Findings consistent with CSF tension hydrothorax

CT Brain
Intraventricular shunt catheter. Slit-like appearance of ventricles

DIFFERENTIAL DIAGNOSIS

- Pulmonary Embolism, DVT
- Pneumonia & Infection
- Cardiac Etiology ACS, Heart Failure)
- Thyroid Dysfunction; Psychiatric
- Shunt Complication

LEARNING POINTS

- Maintain high suspicion for shunt-related complications for hydrocephalus patients with undifferentiated dyspnea.
- Always elicit a detailed surgical shunt history in hydrocephalus patients.
- Thoracentesis may be dangerous in shunted patients until shunt type is confirmed.
- Clinical stability does not exclude life-threatening pathology.

References

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