BACKGROUND

- Pleural effusion in type B thoracic aortic dissection (TAD) can be a serious complication and signals an aortic rupture with blood leaking into the pleural space, usually on the left.
- This is a case which initially presented with a small left hemothorax which worsened and caused respiratory decompensation after thoracic endovascular aortic repair (TEVAR).

CASE DESCRIPTION

- A 91-year-old Caucasian female with no hematological disorders presented with chest pain and left scapular pain.
- Computed tomography angiography (CTA) chest showed type B aortic dissection, likely ruptured, with a small left sided pleural effusion (33.67 HU).
- She underwent urgent TEVAR with no intra-op complications.
- Admission hemoglobin of 10.2 mg/dL dropped to 7.1 mg/dL following surgery.
- Albumin was 3.33 mg/dL and CRP was 68.3 mg/dL.
- She was noted to be oliguric post-operatively and a CTA abdomen was obtained to ensure adequate renal perfusion.
- CTA showed moderate left sided effusion (40.22 HU) and small right sided effusion (-13.67 HU).
- Pulmonary team was consulted for bilateral effusions and worsening hypoxemia.
- Ultrasound-guided left-sided thoracentesis was performed with drainage of 750 ml of sanguineous fluid.
- Fluid hematocrit was 53.3% of serum hematocrit.
- Cultures and cytology were unrevealing.
- Her hypoxemia resolved and she was eventually discharged to a rehab facility.

DISCUSSION

- This case highlights the importance of distinguishing reactive and hemorrhagic pleural effusions in non-traumatic TAD.
- Pleural effusions in aortic dissections are not uncommon and are usually an inflammatory response to the acute aortic process.
- Hypoalbuminemia, anemia and increased CRP are associated with higher propensity to form pleural effusions.
- These are mostly left sided, peak volume is reached around 6-7 days after symptom onset and self-resolve in most cases.
- It is important to note that transudative effusions have CT attenuation values <15 HU compared to 35-70 HU for hemorrhagic effusions.
- In our case, the increase in left-sided effusion was likely due to a continuing leak till the TEVAR was completed and given the worsening symptoms, drainage was the appropriate therapy.
- Studies have shown higher rates of respiratory failure with delayed or no hemothorax decompression in TAD.
- On the other hand, we believe that the right-sided effusion was likely reactive given the low CT attenuation.
- The fluid volume was too small to be drained and previous literature has shown that such effusions usually self-resolve without residual complications.
- Our case highlights the importance of distinguishing hemorrhagic from reactive effusions in TAD to guide management.