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Acute Aortic Dissection Presenting with Massive Hemoptysis and History of TAVR

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Case Abstract

Aortic dissection is a rare and life-threatening condition that often mimics more common causes of chest pain. This often leads to a missed or delayed diagnosis which can have disastrous consequences for the patient. It is imperative that physicians recognize the variable presentations and risk factors of this life-threatening illness as early diagnosis and treatment are crucial to the outcome of the patient. This report describes a 77 year-old female with a medical history of aortic stenosis and Transcatheter Aortic Valve Replacement (TAVR) who presented to the ED with chest pain and massive hemoptysis. CT PE was diagnostic for ascending aortic dissection originating from the site of the patient's TAVR.

Case Presentation

The patient is a 77-year-old female with a past medical history of hypertension and aortic stenosis status post TAVR who presented to the ED with chest pain and massive hemoptysis. The patient reported that she was sitting in her recliner when she experienced sudden onset left-sided chest pain and then proceeded to cough up copious amounts of bright red blood.

Upon arrival to the ED the patient was noted to be hypertensive and tachycardic. Her physical exam revealed a diaphoretic female in acute respiratory distress with no neurological deficits. PE was suspected and a CT scan was performed which revealed an aortic dissection involving the ascending aorta originating from the site of the TAVR with mediastinal hemorrhage and blood compressing the right main pulmonary artery.

Esmolol and nicardipine infusions were initiated and the patient was placed on empiric antibiotics. Ultimately the patient was transferred to a tertiary care facility where cardiothoracic surgery deemed her inoperable due to her TAVR. She was medically stabilized and eventually discharged with palliative care.

Clinical Images

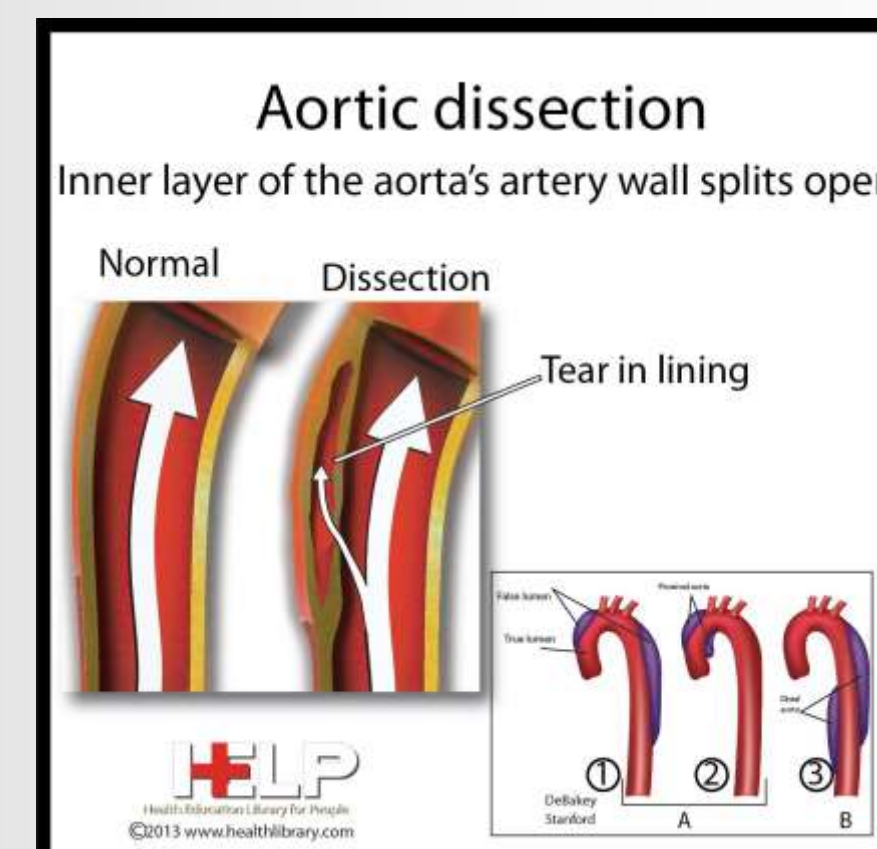
CT Demonstrating False Lumen of Aortic Dissection



Aortic Dissection Originating At Site of TAVR



Aortic Dissection and TAVR Pathophysiology

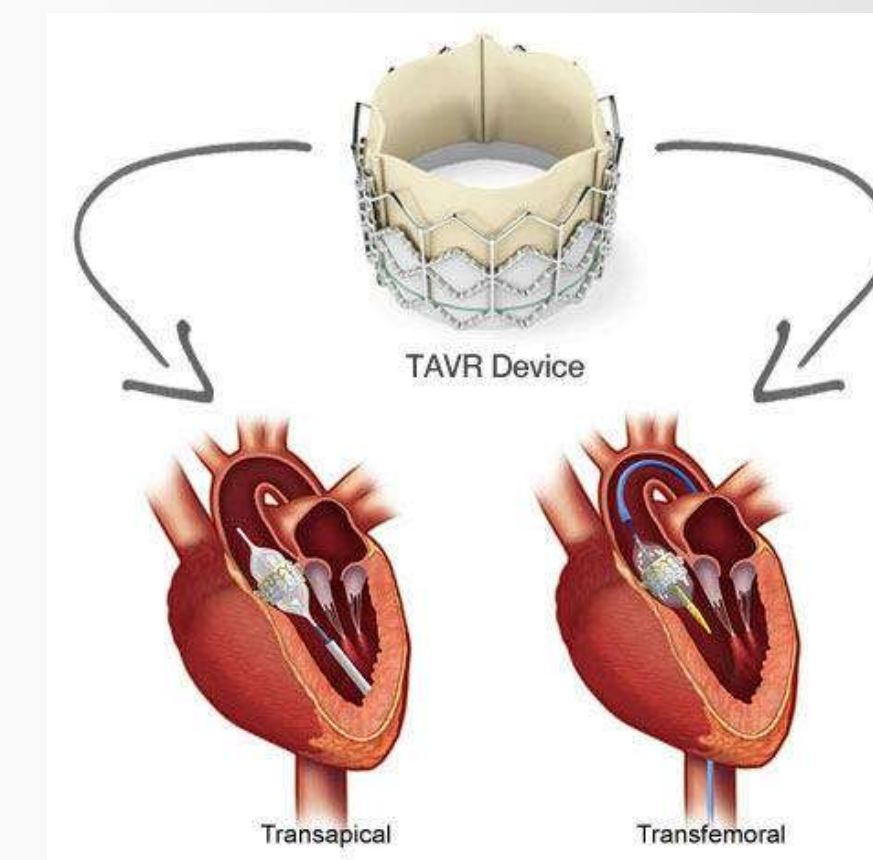


•Surgical repair is the definitive treatment for ascending aortic dissection.

•If left untreated, acute type A aortic dissection carries a mortality of approximately 50% within the first 48 hours and 80% at the two week mark.



•This minimally invasive surgical procedure repairs the valve without removing the old, damaged valve. Instead, it wedges a replacement valve into the aortic valve's place.



•Similar to a stent placed in an artery, the TAVR approach delivers a fully collapsible replacement valve to the valve site through a catheter.

•Once the new valve is expanded, it pushes the old valve leaflets out of the way and takes over the job of regulating blood flow.

Discussion

•This case demonstrates the variable presentation of aortic dissection as well as a rare but known complication of Transcatheter Aortic Valve Replacement (TAVR).

•This case illustrates the utility and diagnostic ability of CT PE Protocol in the diagnosis of aortic dissection.

•Aortic Dissection presenting with hemoptysis is a rare condition, but should be considered in the differential diagnosis of massive hemoptysis as several cases have been documented in the current medical literature.

•Aortic dissection and PE are both life threatening illnesses requiring urgent diagnosis and management, and their presentations can be similar. While CTA for dissection is rarely diagnostic for PE, CTA for PE has a sensitivity of approximately 87% in detecting acute type A aortic dissection.

•TAVR is a known risk factor for aortic dissection with some studies reporting an incidence of up to 2%, and this patient's known history of TAVR prohibited her from undergoing definitive surgical repair of her aortic dissection.

•As TAVR is a relatively new surgical procedure, there is limited data on potential long-term complications. Future studies should continue to investigate the potential long-term complications of this procedure.

References

- Endovascular Repair for Type A Aortic Dissection After Transcatheter Aortic Valve Replacement With a Medtronic CoreValve Berfield, Kathleen K.S. et al. *The Annals of Thoracic Surgery* , Volume 100 , Issue 4 , 1444 – 1446
- Criado FJ. Aortic dissection: a 250-year perspective. *Tex Heart Inst J*. 2011;38(6):694–700.
- Vardhanabhuti V, Nicol E, Morgan-Hughes G, et al. Recommendations for accurate CT diagnosis of suspected acute aortic syndrome (AAS)--on behalf of the British Society of Cardiovascular Imaging (BSCI)/British Society of Cardiovascular CT (BSCCT). *Br J Radiol*. 2016;89(1061):20150705. doi:10.1259/bjr.20150705
- Clinical outcomes at 1 year following transcatheter aortic valve replacement. David R. Holmes, Jr, J. Matthew Brennan, John S. Rumsfeld, David Dai, Sean M. O'Brien, Sreekanth Vemulapalli, Fred H. Edwards, John Carroll, David Shahian, Fred Grover, et al. *JAMA*. 2015 Mar 10; 313(10): 1019–1028. doi: 10.1001/jama.2015.1474