EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER
DEPARTMENT OF EMERGENCY MEDICINE

BROWARD HEALTH
Care Warriors

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Aortic Dissection

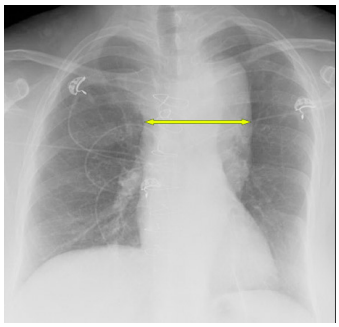
A 60-year-old male is brought to the ED complaining of severe onset of chest pain and interscapular pain. The patient states that the pain feels as though "something is ripping and tearing". The patient appears toxic; the skin is cool and clammy. The patient has an impaired consciousness. Physical examination reveals a loud diastolic murmur and variation in blood pressure between the right and left arm. Based on this presentation what is the most likely diagnosis?

A. Aortic dissection

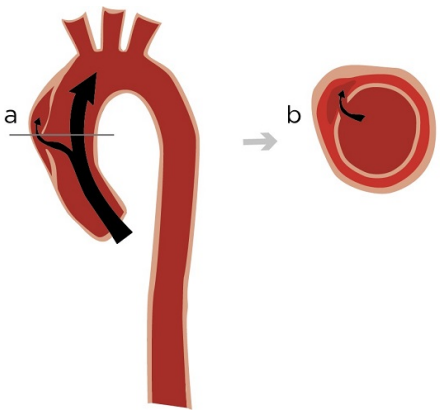
B. Acute myocardial infarction

C. Cardiac tamponade

D. Pulmonary embolism



A widened mediastinum is often noted on plain radiographs of the chest in patients with aortic dissection. The increased width is caused by expansion of the aorta due to creation of a false lumen between the intima and the media of the vessel [2]



EM Case of the Week is a weekly "pop quiz" for ED staff.

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

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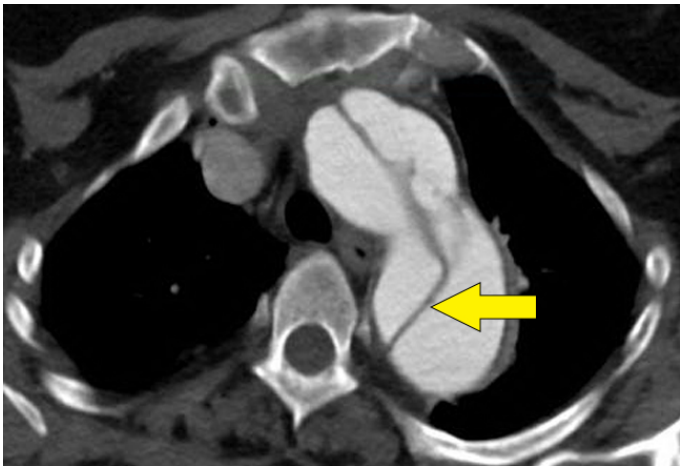
The correct answer is A, aortic dissection. While all answer choices will present with pain, a key differentiating factor is the difference in blood pressure between the upper extremities. The character of the pain (a tearing sensation) and sudden onset also help to differentiate aortic dissection from other causes of acute chest pain.

The characteristic clinical feature of acute aortic dissection is the sudden onset of excruciating, tearing chest pain with radiation to the back. Patients may rapidly deteriorate, becoming hemodynamically unstable if the condition is not promptly recognized. [1]



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Discussion

Acute dissection of the aorta is a relatively rare condition (2.5-3.5 per 100,000). Risk factors for aortic dissection include: hypertension, atherosclerosis, prior cardiac or aortic surgery, connective tissue disorders (ex. Marfan syndrome), and bicuspid aortic valve, with HTN being the most significant risk factor (72% of patients). Acute dissection has also been associated with substances known to acutely elevate blood pressure, such as cocaine and methamphetamines. [1]

If untreated, the mortality rate for ascending dissections increases by approximately 1% per hour for the first 72 hours, and the 3-month mortality rate is approximately 90% [1]

Diagnosis and Treatment

Due to the high mortality and rapid progression of acute aortic dissections, a high index of suspicion is crucial. Patients with suggestive symptoms should be immediately be sent for CT angiogram, which allows for rapid diagnosis, as well as differentiating Type A from Type B lesions. Imaging will reveal two lumens within the aorta, with a “false lumen” forming between the intima and the media of the vessel. [1]

Treatment decisions are largely based on the type of lesion identified. Type A dissections require urgent surgical intervention, while Type B lesions are often medically managed with β-blockers. [1]

For a list of educational lectures, grand rounds, workshops, and didactics please visit ***BrowardER.com*** and **click** on the ***“Conference”*** **link**.

All are welcome to attend!

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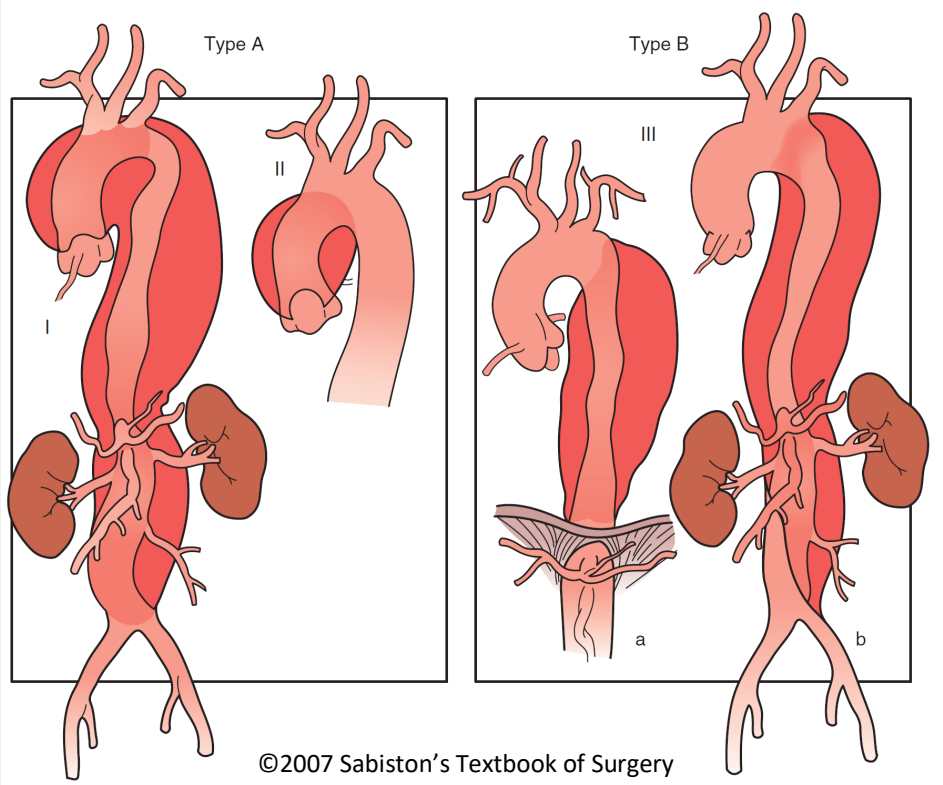

Aortic dissections are categorized using the Stanford system into types A and B. Type A dissections are those with any involvement of the ascending aorta (proximal to the origin of the left subclavian artery). Type B dissections are those without involvement of the ascending aorta. [3]

Take Home Points

- Aortic dissection is an immediately life-threatening condition that requires a high index of suspicion and prompt recognition
- The diagnosis of Aortic dissection is based on the radiologic finding of a second ("false") lumen on imaging, with those in the ascending aorta being Stanford Type A lesions, and all those without ascending involvement being Type B.
- Urgent surgical consultation is warranted for all patients with confirmed or strongly suspected dissection.

ABOUT THE AUTHOR

This month's case was written by Alex Tarr. Alex is a 4th year medical student from NSU-COM. She did her emergency medicine rotation at BHMC in January 2020. Alex plans on pursuing a career in General Surgery after graduation.

REFERENCES

1. "Clinical Features and Diagnosis of Acute Aortic Dissection." *UpToDate*, www.uptodate.com/contents/clinical-features-and-diagnosis-of-acute-aortic-dissection
2. Townsend, Courtney M. *Sabistons Textbook of Surgery*. Elsevier Saunders, 2007.
3. "Aortic Dissection." *Practice Essentials, Background, Anatomy*, 18 Nov. 2019, emedicine.medscape.com/article/2062452-overview.