

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Vascular Diseases Quiz – Case 22

A 57-year-old male patient presented to the emergency department due to acute onset right shoulder pain and transient numbness of his right hand over the past 6 hours. He did not mention any history of trauma, atrial fibrillation or other known cardiovascular disease. His medical comorbidities included hypertension, hyperlipidemia and current smoking (40 pack/years). Clinical examination revealed pulselessness of the right upper extremity with equally pulsative femoral arteries. There was a marked difference in systolic arterial pressure measurements between upper extremities, as documented by hand-held Doppler examination (140 mmHg on the left and 80 mmHg on the right, respectively). There were no pathological findings on ECG exam or during auscultation of the neck and thorax. No neurological deficit was documented, except from transient numbness of the right arm. Further imaging with Color Duplex ultrasound of the neck and right upper extremity arteries, as well as a contrast-enhanced CT scan of the thoracoabdominal aorta was performed (figures 1, 2).

Quiz # 1: What is the most probable diagnosis?

Quiz # 2: What is the optimal treatment for this patient's condition?

Comment

Duplex ultrasound study of the neck and right upper extremity

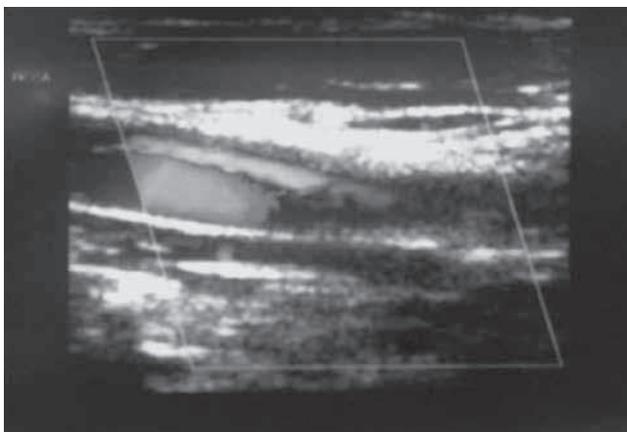


Figure 1

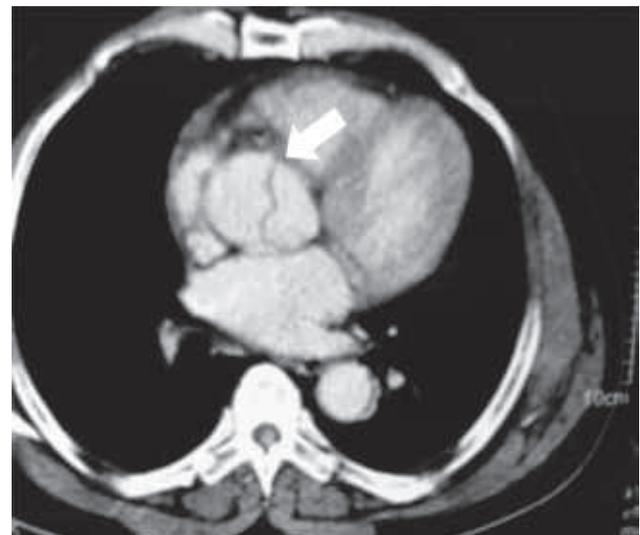


Figure 2

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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2013, 30(1):114–115

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demonstrated an intraluminal intimal flap at the level of the common trunk with distal extension towards the right subclavian (RSA) and right common carotid artery (CCA), characteristic of acute dissection (fig. 1). Further imaging with contrast-enhanced CT scan of the thoracic aorta revealed a 40 mm dissecting aneurysm of the ascending aorta, with the pathognomonic finding of an intraluminal dissecting flap, separating the true and false lumen (fig. 2, blue arrow). The dissection flap seemed to begin from the level of the aortic route, extending distally to the common trunk, RSA and right CCA, while sparing the ostium of left CCA and the left subclavian artery (LSA). Initial treatment included intravenous administration of vasodilator agents (sodium nitroprusside 3–4 µg/kg/min) and beta blockers (hydrochloride esmolol 1–2 mg/min), in order to lower the systemic blood pressure at levels of 110/70 mmHg, and reduce the cardiac force impact on the aortic wall, thus preventing further extension of the dissection. The patient remained

hemodynamically stable and he was transferred to cardiac surgery department for immediate surgical repair. This involved composite graft replacement of the aortic valve, aortic root and ascending aorta, with re-implantation of the coronary arteries into the graft (Bentall procedure).

Acute aortic dissection is a potentially lethal condition, with an incidence of 3 per 100.000 person/year. Hypertension, male gender, smoking and atherosclerosis are the most common predisposing factors, with trauma and other, non-atherosclerotic conditions like Marfan and Ehlers-Danlos syndrome occurring less frequently.

Typically, aortic dissection presents with severe, acute onset chest or back pain, with a sharp or stabbing character, described by the patient as the “worst ever”.

Complications include rupture in the pericardium or within the thoracic cavity and ischemic complications due to extension of the dissection (acute myocardial infarction, stroke and critical ischemia of the extremities or terminal organs). However, non-specific signs, such as spinal cord ischemia or shoulder pain, like in our case, may be the only manifestation of this condition. CT angiography is the “gold standard” of diagnosis. The Stanford classification distinguishes two types of acute aortic dissection, based on the localization of the intimal tear. Localized dissection involving the ascending aorta and

aortic arch is categorized as Stanford type A, while dissection of the thoracic aorta distally to the LSA is, by definition, type B. Stanford type A aortic dissection mandates urgent surgery, due to the high mortality related with non-surgical treatment. On the other hand, acute uncomplicated type B dissection can be treated medically in the majority of cases.

References

1. KRÜGER T, CONZELMANN LO, BONSER RS, BORGER MA, CZERNY M, WILDHIRT S ET AL. Acute aortic dissection type A. *Br J Surg* 2012, 99:1331–1344
2. CRIADO FJ. Aortic dissection: A 250-year perspective. *Tex Heart Inst J* 2011, 38:694–700

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