

Incidental diagnosis of pseudoaneurysm of the thoracic aorta: An unusual late presentation

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Özet

Geç bir dönemde torasik aort psödoanevrizmasının rastlantsal tespit edildiği ilginç bir olgu

Onaltı yıl önce traktör kazası yapan bir hastada tespit edilen bir kronik torasik aort psödoanevrizmasını sunuyoruz. Üst solunum yolu infeksiyonu nedeni ile hastaneye müracaat etmesine rağmen akciğer grafisinde geniş ve kalsifik aort topuzunun görülmesi üzerine yapılan MR anjiyografi ve aortografide istmus düzeyindeki aortik psödoanevrizma tespit edildi. Hastanın öyküsü göz önüne alındığında psödoanevrizmanın en muhtemel sebebinin trafik kazası olduğuna karar verildi. Hasta cerrahi olarak başarılı bir şekilde tedavi edildi.

Anahtar kelimeler: aorta, travma, psödoanevrizma

Abstract

A chronic pseudoaneurysm of the thoracic aorta in a 36-year-old man who had been involved in a tractor related traffic accident 16 year earlier is reported. While he was admitted to the hospital for sore throat, routine chest reutgenogram showed a calcified, enlarged aortic knob. Aortography and MRI angiography revealed a pseudoaneurysm of the thoracic aorta at the isthmus level. Depending on his past medical history, the most probable cause of the pseudoaneurysm was the traffic accident. He was treated surgically with success.

Key words: aorta, trauma, pseudoaneurysm.

Introduction

Pseudoaneurysm or false aneurysm of the aorta is the collection of blood between layers of the aortic wall (1). Blunt thoracic trauma is one of the most common causes of the aortic pseudoaneurysm formation (2). If the trauma causing aortic injury is severe, tear involves all layers of the aorta and generally the patient die. However if the trauma is not very severe, it only causes an intimal tear, which may result in pseudoaneurysm formation. Traumatic aortic injury is a very symptomatic condition with a high mortality rate. Rarely, some patients with trauma-related aortic injury have no signs or symptoms and a chronic false aortic aneurysm may be discovered years after the blunt trauma (3).

We report a case with chronic pseudoaneurysm of the thoracic aorta diagnosed while he was admitted to the hospital for tonsillitis after 16 years of the blunt trauma.

Case Report

A 36-year-old man was admitted to the hospital for sore throat, fever and cough. His blood pressure was 120/80 mmHg, heart rate was 80/bpm and his temperature was 36.5C. Physical examination was normal except for a severe tonsillitis. Whole blood count and biochemical parameters were normal. A routine chest reutgenogram showed a calcified and dilated aortic knob. Echocardiography revealed a pseudoaneurysm of the thoracic aorta which was connected to the aorta with a narrow neck and had a diameter of 50 mm. Aortography and MRI angiography (Figure 1) confirmed the diagnosis of pseudoaneurysm of the thoracic aorta at just distal to the origin of left subclavian artery. Coronary arteries were normal on selective coronary angiography. On detailed questioning, he reported that he had been involved in a traffic accident while had been driving a tractor 16 years ago and his left leg was broken, however, he has been having no symptoms referable to the aortic injury since then. Given the history of the traffic accident without any other etiologic factor,

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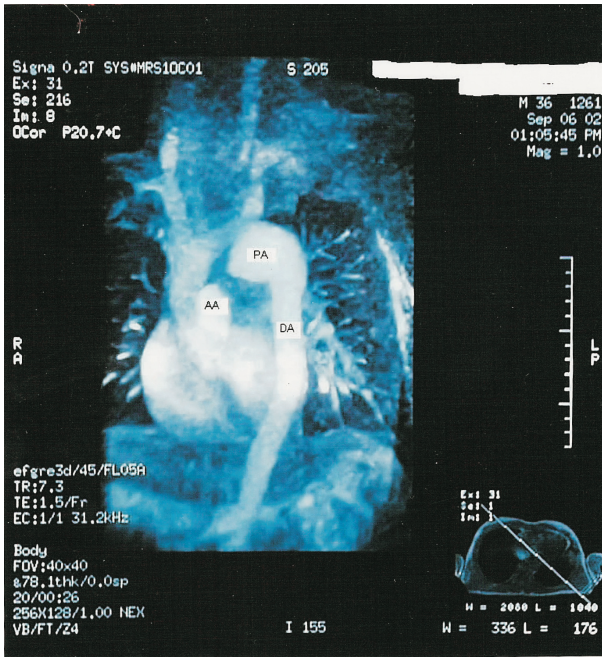


Figure 1. MR angiography of the patient showing the pseudoaneurysm located at the level of the aortic isthmus. Asc Ao: Ascending aorta, Desc Ao: Descending aorta, Pseu AnE: Pseudoaneurysm.

trauma was the most probable cause of the pseudoaneurysm in this patient.

He was treated surgically; after the thoracotomy, the pseudoaneurysm was localized to the aortic isthmus. Resection of the aneurysm and patch-plasty was performed successfully.

Discussion

Aortic-related surgery, placement of intra-aortic balloon counter pulsation, catheter based percutaneous procedures and serious thoracic trauma can cause aortic pseudoaneurysm formation (2, 4). In the presence of some medical conditions such as cystic medial degeneration, advanced age, bicuspid aorta, cocaine abuse, aortitis and pregnancy, aortic wall layers are susceptible for tear which can cause acute dissection or pseudoaneurysm formation (1, 2). Depending upon his medical history, blunt trauma was the most probable cause of the aneurysm in our case. Although spontaneous dilatation and rupture of the aorta has been reported, however it is very rare (5, 6) and given the fact that the patient had a history of a traffic accident, we speculate that trauma might have resulted in the pseudoaneurysm formation in our patient.

The junction between aortic arc and descending aorta is called as aortic isthmus. The aortic arc is movable but the descending aorta is fixed. During an accident,

generally the mobile aortic arc displace caudally which place the isthmus under tension and leading to rupture. Therefore, traumatic aortic injury (blunt traumatic aortic rupture, BTAR) is most often occur at the descending aorta just distal to the origin of left subclavian artery which was the case in our patient, another evidence supporting the hypothesis that trauma was the cause of pseudoaneurysm in our patient.

Scene mortality rate of BTAR is about 80 to 90 percent. In severe cases, the tear can extend into the adventitial layer, causing transection of the aorta. Following a complete transection the victim usually dies (7). In mild trauma, the tear only involves the intima, and sometimes the media, but the adventitia is not affected. If the intact adventitia strong enough, the blood is collected within the aorta and the individual survives. When arterial blood pressure force blood between the layers of the aortic wall a false aneurysm or pseudoaneurysm ensues. The most common manifestations of BTAR are chest and/or midscapular pain, a new murmur, increased pulse amplitude, and hypertension of the upper extremities (8). Interestingly, although it seems that traumatic rupture and pseudoaneurysm formation occurred 16 years ago in our patient, it was diagnosed incidentally while he was admitted to the hospital for other reason.

The pseudoaneurysm may rupture any time, severely threatening the life of the patient. Peripheral embolization, endoaortitis or chronic pseudocoarctation may occur as a complication. Because of relative instability of these aneurysms and the potential complications, prompt treatment should be initiated as soon as they are diagnosed. Elective surgery which has a low morbidity and mortality should be the treatment of choice (3, 9). We treated our patient surgically with success. Endovascular stent grafts are alternative to open-chest surgery for the treatment of traumatic abdominal and thoracic aortic injury with less morbidity and mortality in patients with high operative risk (10).

Conclusion

We report a case with chronic pseudoaneurysm of the thoracic aorta diagnosed while he was admitted to the hospital for tonsillitis after 16 years of the blunt trauma. Patients involved in severe traffic accidents should undergo diagnostic testing for possible aortic injury.

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