Post-traumatic aortic pseudoaneurysm causing acquired pulmonary artery stenosis

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DESCRIPTION

A 43-year-old man with a diagnosis of severe pulmonary stenosis was referred to us for pulmonary valve balloon dilatation. We reviewed the case and found that the patient was complaining of progressively increasing dyspnoea over the past one year. He did not complain of chest pain, syncope, limb swelling or cyanosis. History was unremarkable except for a motorbike accident which he suffered 10 years back and sustained injuries over his face, chest and limbs. He made full functional recovery within 2 months after the accident and remained free from any symptoms for the next 9 years.

We reviewed his echocardiogram and found that he had dilated right atrium and right ventricle. Left-sided chambers and valves were normal. The pulmonary valve was normal. Instead, he had supra-valvular pulmonary stenosis caused by compression of the pulmonary artery by an extrinsic mass (figures 1 and 2). CT aortic and pulmonary angiography performed on 128-slice scanner

Figure 1 Transthoracic echocardiogram parasternal short-axis view, showing severe compression of the pulmonary artery (PA) by an extrinsic mass.

Figure 2 Gradients across the compressed pulmonary artery segment.

Figure 3 Volume rendered CT image of the heart and aortic arch showing large pseudoaneurysm from ascending aorta compressing the pulmonary artery (PA).

Figure 4 Pseudoaneurysm severely compressing the main pulmonary artery (PA).

Figure 5 Coronal CT angiography image showing large peripherally thrombosed aneurysm of ascending aorta compressing the pulmonary artery (PA) with resultant severe compression and decreased contrast enhancement of pulmonary artery.

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Learning points

- ▶ Most of the cases of traumatic aortic transections are fatal.
- ▶ Approximately 2% survive long enough to develop chronic pseudoaneurysm.
- ▶ The most common site of post-traumatic pseudoaneurysm is aortic isthmus (between the left subclavian and the third intercostal artery).
- ▶ However, other aortic sites including ascending aorta have also been reported.
- ▶ If left untreated, chronic pseudoaneurysm typically expands progressively and causes compression of surrounding structures (may lead to dysphagia, hoarseness, etc).
- ▶ Compression of the pulmonary artery by chronic post-traumatic aortic pseudoaneurysm is rarely reported.
- ▶ Differential diagnosis includes infected mycotic saccular aneurysm, penetrating atherosclerotic ulcers and vasculitis.

revealed large peripherally thrombosed pseudoaneurysm of the ascending aorta, which was compressing the pulmonary artery resulting in marked narrowing and decreased contrast enhancement of the pulmonary artery (figures 3–5). Rest of the aorta was free of any signs of inflammation, atheromatous

plaquing and dilatation, ruling out vasculitis, infected aneurysms and atherosclerosis as the aetiology of the pseudoaneurysm. Detailed work-up for connective tissue disorders, infective pathologies, vasculitis and hypertension was negative. The pseudoaneurysm was therefore assumed to be post-traumatic in origin. The latter usually involves the aortic isthmus; however, other aortic sites including ascending aorta have also been reported.¹ The patient was advised surgical repair, for which he declined and was lost to follow-up.

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REFERENCE

- 1 Zamani J, Aghasadeghi K, Zarrabi K, et al. Pulmonary artery stenosis caused by a large aortic arch pseudoaneurysm detected 10 years after a minor trauma. *J Cardiovasc Thorac Res* 2016;8:46–8.

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