

Intracranial and Bilateral Subclavian Arterial Aneurysms

Associated with True Aortic Coarctation

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A 36-year-old man with a history of hypertension presented with sudden-onset dyspnea and chest pain. He reported no trauma, headache, or transient ischemic attack. His blood pressures were 140/100 mmHg (right arm) and 132/100 mmHg (left arm). A chest radiograph showed bilateral soft-tissue opacities in the superior mediastinum (Fig. 1). A bruit was heard over the right subclavian artery (SCA). The bilateral lower-limb pulses were barely palpable. An electrocardiogram indicated no acute coronary syndrome.

Cross-sectional imaging was performed. Multislice computed tomographic and magnetic resonance angiograms showed large fusiform bilateral SCA aneurysms causing a mass effect upon the trachea, with evidence of a dissection flap in the right SCA (Fig. 2). A left middle cerebral artery aneurysm was seen at the bifurcation (Fig. 3).

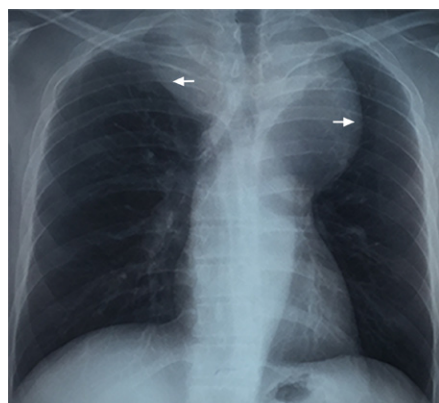


Fig. 1 Chest radiograph shows 2 dense soft-tissue opacities (arrows) causing widening of the superior mediastinum.

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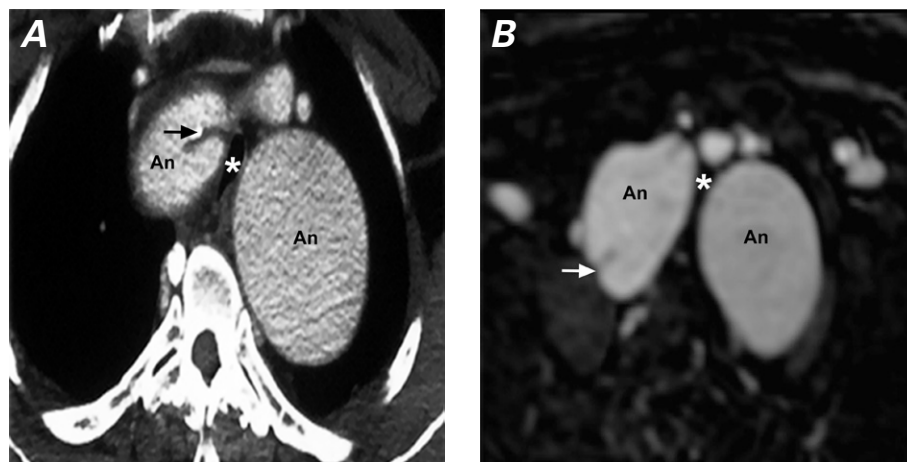


Fig. 2 A) Computed tomographic and **B)** magnetic resonance angiograms show bilateral fusiform subclavian artery aneurysms (An) compressing the trachea (*) with evidence of a dissection flap in the right subclavian artery (arrows).

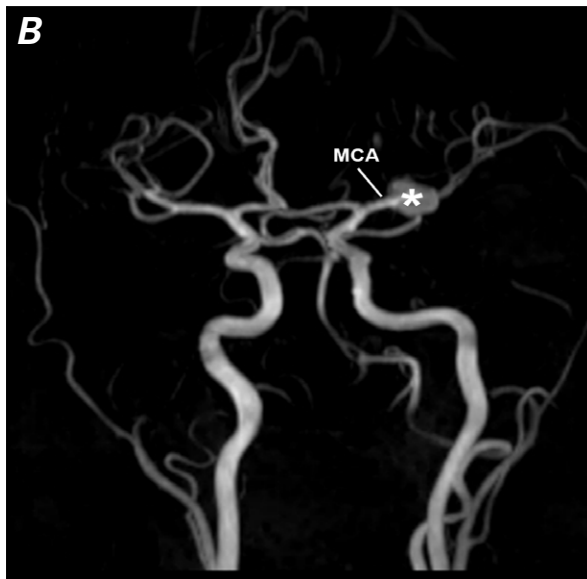
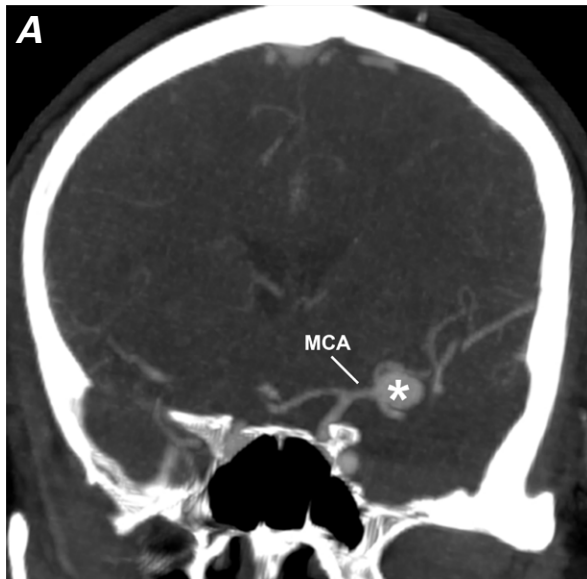


Fig. 3 **A)** Coronal computed tomographic and **B)** magnetic resonance time-of-flight angiograms show a left middle cerebral artery (MCA) aneurysm (*) at the branching point.

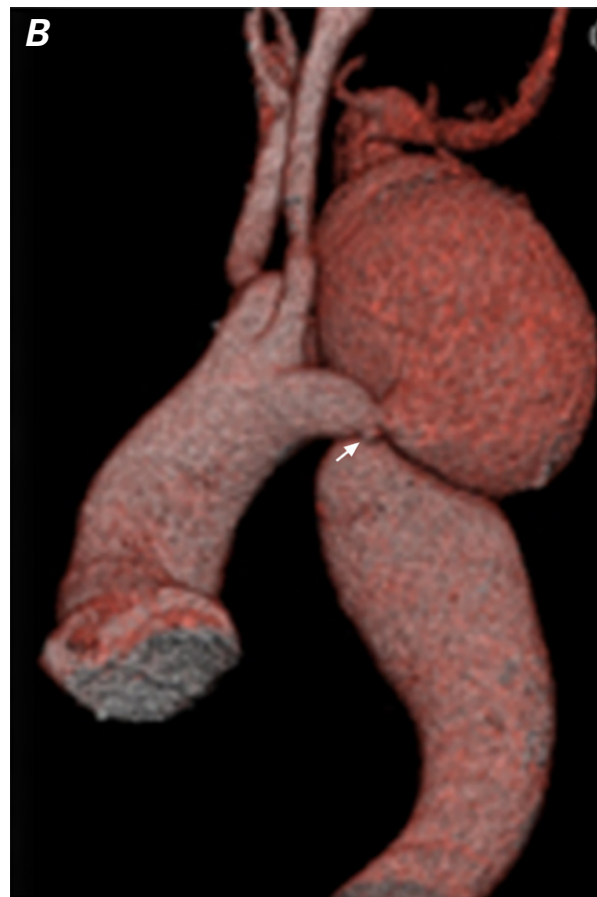
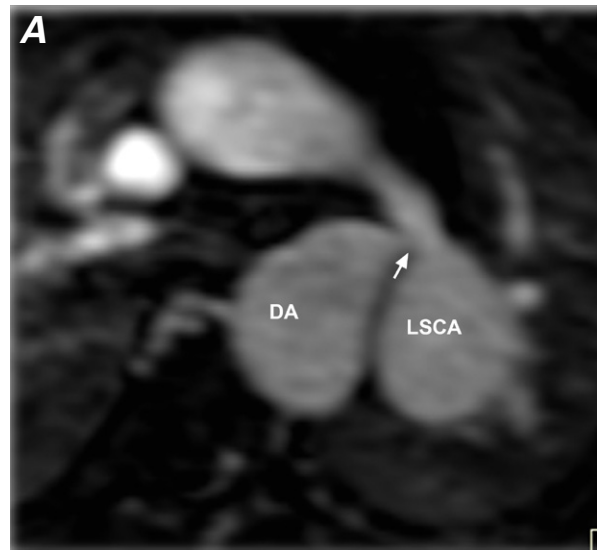


Fig. 4 **A)** Magnetic resonance angiogram and **B)** postoperative volume-rendered computed tomogram show tight juxtaductal coarctation of the aorta (arrows).

DA = descending aorta; LSCA = left subclavian artery

Tight aortic coarctation with mild poststenotic dilation was noted at the origin of the left SCA (Fig. 4).

To relieve the patient's respiratory distress, we resected the right SCA aneurysm and performed graft repair. Further surgery was planned to repair the coarctation and resect the left SCA aneurysm.

Comment

Among patients with peripheral aneurysms, the prevalence of SCA aneurysms is 1%.¹ The chief causes are atherosclerosis¹ and thoracic outlet syndrome²; rarer causes are infection and trauma.³ Extrathoracic aneurysms present as pulsatile masses, whereas intrathoracic

aneurysms cause compressive symptoms. The aneurysms can rupture or cause thromboembolization. Surgery is recommended, especially in patients who present with obstructive symptoms.³ The association between

intracranial aneurysms and aortic coarctation has been described⁴; hypertension and hemodynamic changes in cerebral perfusion are possible causes.⁵

Authors have reported unilateral SCA aneurysm with aortic coarctation,⁶ aneurysms of congenital cause,⁷ and bilateral SCA aneurysms associated with aortic pseudo-coarctation.⁸ To our knowledge, ours is the first report of the triad of bilateral SCA aneurysms, intracranial aneurysm, and true coarctation of the aorta. We suggest that patients who present with SCA aneurysm also be examined for associated aneurysms and aortic coarctation.

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