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Case Reports

Bovine aortic arch with supravalvular aortic stenosis



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ABSTRACT

A 5-year-old boy was diagnosed to have supravalvular aortic stenosis (SVAS). On evaluation of CT angiogram, there was associated bovine aortic arch (BAA). Association of BAA with SVAS has not been previously reported in literature, and to best of our knowledge, this is the first case report of SVAS with BAA. Recent studies show BAA as a marker for aortopathy. SVAS is also an arteriopathy. In light of this, SVAS can also possibly be a manifestation of aortopathy associated with BAA.

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1. Case

A 5-year-old male child was referred to our institute with the diagnosis of supravalvular aortic stenosis (SVAS). Echocardiogram showed a peak stenotic gradient of 86 mm Hg across the SVAS 1.2 cm above the annulus with trivial aortic regurgitation and good biventricular function. CT angiography showed a SVAS with bovine arch pattern (Fig. 1). The child underwent a Doty's aortoplasty using PTFE patch with an uneventful postoperative period.

2. Discussion

Recently, Dimitrios C. Angouras discussed the bovine aortic arch (BAA) as a marker of aortopathy.¹ The association of BAA with thoracic aorta has been postulated by Hornick and Malone.^{2,3} Both of them observed the increased association of the aneurysm and increased growth rate in patients with BAA as compared to controls. The diffuse arteriopathy of SVAS is well documented and is evidenced by the existence of pulmonary artery stenosis, diffuse systemic, and aortic stenosis.⁴

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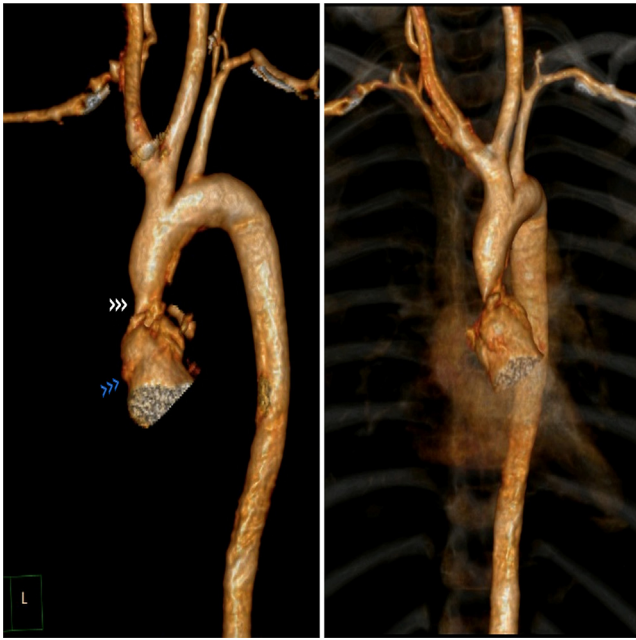


Fig. 1 – CT angiogram with 3D reconstruction showing the supravalvular aortic stenosis (white arrow heads) and aortic annulus (blue arrow heads). Left aortic arch with the first arch as a common trunk for innominate and left carotid artery (BAA) following which the arising of the left subclavian artery can also be appreciated.

Coexistence of SVAS and bovine arch has not been reported previously in literature. In the light of the observation of Hornick and Malone, can SVAS also be a manifestation of aortopathy associated with BAA? The increased rate of aortic aneurysm was due probably to the different flow dynamics in BAA. Can this ascending aortic pathology also be related to the same? This needs further study among the cases of SVAS.

Conflicts of interest

The authors have none to declare.

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