Isolated major aortopulmonary collateral artery in an infant presenting with recurrent lower respiratory tract infection

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DESCRIPTION

A 5-month-old baby, weighing 4 kg presented with a 3-month history of failure to thrive and recurrent lower respiratory tract infection (RTI). She was delivered at term weighing 2.8 kg and the perinatal period was uneventful. Saturation and clinical examination was normal and there were no abnormal auscultation findings or murmur. Chest x-ray had normal cardiac and pulmonary contours while previous x-rays had evidence of lower RTI involving the right lung. An echocardiogram showed no evidence of congenital heart disease (CHD) with no shunts and there was no evidence of left ventricular volume overload (figure 1A, B) but a colour Doppler examination showed the presence of major aortopulmonary collateral arteries (MAPCA; figure 2A, B). Aortic angiogram revealed an abnormal vessel arising from the descending aorta coursing towards right lung. Other findings of the pulmonary angiogram were normal with normal pulmonary arteries (figure 3A, B) and normal systemic and pulmonary venous drainage. The MAPCA was incriminated as the cause of recurrent lower respiratory tract infection as there was no other obvious explanation.

Despite an initial dilemma regarding whether to take the child for a procedure it was decided to manage her conservatively with diuretics, which is the therapy of choice in all cases of large left to right shunts after having controlled the infection with parenteral antibiotics with coil embolisation later, if required. The child improved with antibiotic therapy and was continued on medical management and close follow-up.

MAPCA are seen in cyanotic CHDs (CCHDs) which decreases pulmonary blood flow and serves as an additive or the only source of blood supply. These are commonly seen in tetralogy of Fallot and

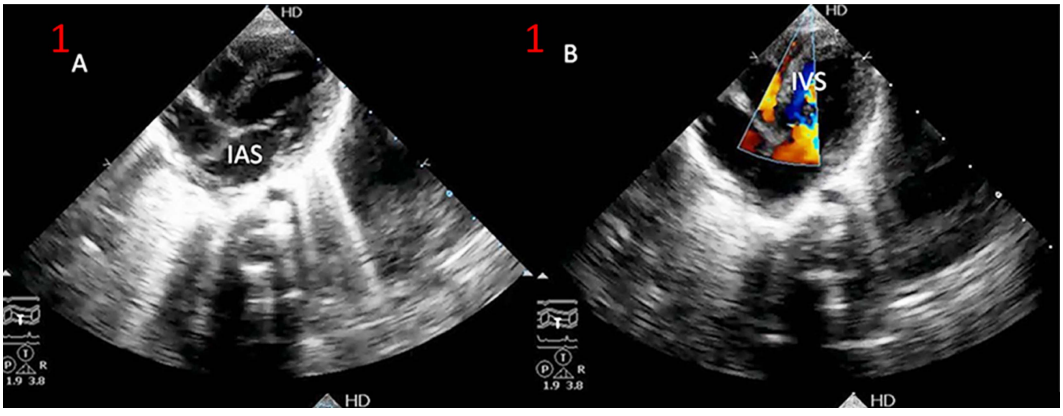

Figure 1 (A and B) Subcostal echocardiography revealing intact inter-atrial septum and inter-ventricular septum.

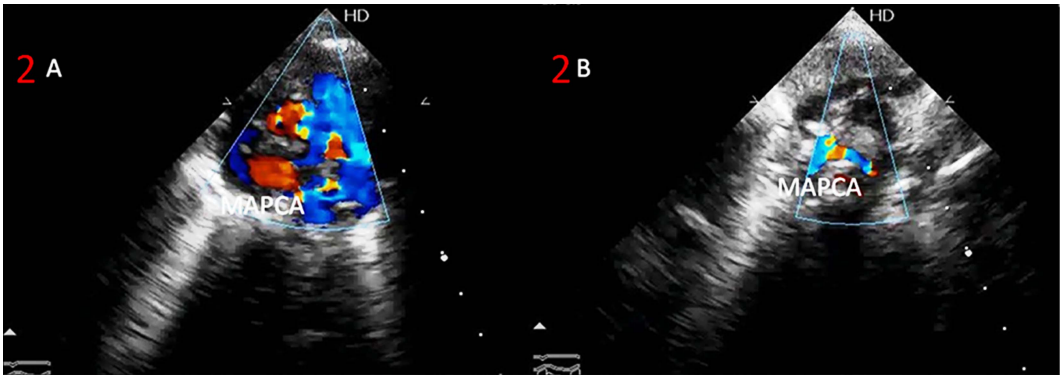

Figure 2 (A) Parasternal short axis and (B) suprasternal view demonstrating major aortopulmonary collateral arteries.

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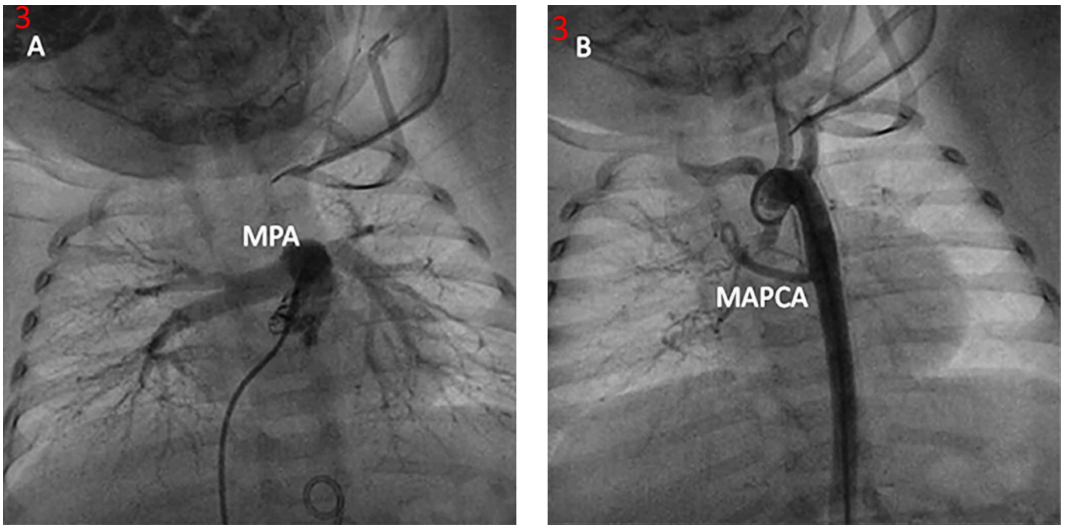

Figure 3 (A) Pulmonary angiogram revealing normal distribution of pulmonary arteries with the presence of major aortopulmonary collateral arteries (MAPCA) arising from descending aorta towards right lung. (B) Aortic angiogram revealing the origin and course of MAPCA.

similar physiology with or without pulmonary atresia. Sometimes, MAPCAs are also seen in premature neonates having bronchopulmonary disorder, though these are usually small and are rarely symptomatic. MAPCAs in the absence of CCHD usually regress spontaneously rarely requiring intervention.[1–3] In our case, the baby had an isolated MAPCA which caused symptoms of recurrent chest infection.

Learning points

- Isolated major aortopulmonary collateral arteries are sometimes seen in premature neonates with bronchopulmonary disorder, but they are rare in healthy term neonates without congenital heart disease.
- Sometimes they may present with complications due to increased pulmonary blood flow.
- Symptoms if not controlled by conservative treatment with diuretics may be managed by elective coil embolisation and rarely might require surgical intervention.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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