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Images in Congenital Cardiac Disease

Collateral channels from the superior caval vein to the cardiac veins after atrial repair for transposition

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A 12 YEAR OLD BOY WITH CONGENITALLY corrected transposition, ventricular septal defect, and pulmonary atresia, underwent, at the age of 7, a Senning procedure, closure of the ventricular septal defect so that the morphologically left ventricle exited to the aorta, and interposition of a homograft between the morophologically right ventricle and the pulmonary trunk. After a period of 5 years subsequent to the surgery, the patient complained of diurnal oedema of the eyelids.

Trans-thoracic echocardiography showed mild dilation of the morphologically right ventricle, with mild obstruction of its outflow tract. It was not possible to analyse the atrial venous pathways. Computed tomography showed, in lateral view, the persistence of contrast medium in the superior caval vein (Fig. 1a), and a mild stenosis of the superior atrial channel (Fig. 1b). At cardiac catheterisation, the mean pressure in the superior caval vein was 20 mmHg. Angiography, performed in lateral (Fig. 2a) and antero-posterior views (Fig. 2b) showed a tight stenosis at the junction of the superior caval vein with the right atrium. An abundant collateral venous circulation was noted between the superior caval vein and the cardiac veins, which drained into the coronary sinus (arrow). Implantation of a bare stent produced relief at the site of stenosis.

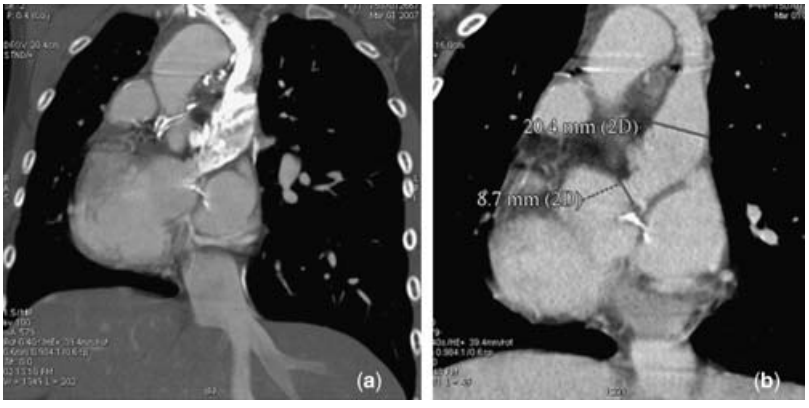

Figure 1.

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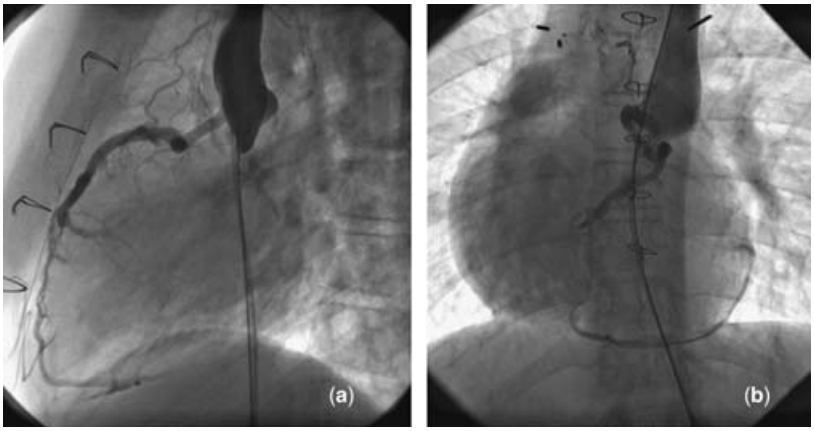

Figure 2.

Although the development of supradiaphragmatic and infradiaphragmatic decompressing venous collateral channels is a well known phenomenon subsequent to development of superior caval venous obstruction,[1] to be best of our knowledge connections between the superior caval vein and the cardiac veins have not previously been described. We speculate that the leftward position of the aorta, typical of the underlying anomaly, the proximity with the atrial anastomoses and the associated surgery on the right ventricular outflow tract, facilitated the formation of anastomoses between the two venous systems.

Reference

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