Unique subaortic course of anomalous left circumflex artery associated with double chamber right ventricle

Mumun Sinha, Niraj Nirmal Pandey, Arun Sharma

DESCRIPTION

Cardiac computed tomography angiography in a 47-year-old woman, presenting with features of right heart failure, revealed a hypertrophied muscle band in the lower right ventricular outflow tract (RVOT) (figure 1) with resultant dilatation of the right atrium (RA), right ventricular inlet and the RVOT with right ventricular hypertrophy. A small perimembranous ventricular septal defect was also seen.

Incidentally, an anomalous left circumflex (LCx) artery arising from the right coronary artery (RCA) was also present. However, the aberrant vessel was seen to follow an exceedingly rare subaortic course, between the aortic root and dilated RA, to the reach the left atrioventricular groove, instead of the usual retroaortic course (figure 2).

Double chamber right ventricle (DCRV), where the right ventricle is separated into a high-pressure proximal and low-pressure distal chamber, is seen in around 0.5%–2.0% of all cases of congenital heart disease, most commonly encountered in infants and children. An exceptionally rare association of DCRV present in this patient is an anomalous LCx arising from the RCA, more so with a unique subaortic course. The said association may be clinically important as the anomalous vessel precariously courses between the dilated RA and aortic root where it can get compressed between the two structures. It, therefore, may need either additional correction or close follow-up for resolution of RA dilatation postresection of the hypertrophied muscle band.

Learning points

- Double chamber right ventricle (DCRV) is rare and seen in around 0.5%–2.0% of all cases of congenital heart disease, most commonly presenting in infancy or childhood.
- An anomalous origin of left circumflex artery arising from the right coronary artery with a subaortic course is an exceedingly rare association of DCRV.
- Preoperative recognition of the pattern of coronary involvement may be clinically significant as the anomalous vessel precariously courses between the dilated right atrium and aortic root where it can get compressed between the two structures.

Contributors

All authors have participated sufficiently in the conception of the idea, development of the intellectual content, design, writing and final approval of the manuscript.

Funding

The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests

None declared.

Patient consent for publication

Obtained.

Provenance and peer review

Not commissioned; externally peer reviewed.
REFERENCES