

CLINICAL IMAGE

Intraoperative diagnosis of retroaortic left innominate vein in a patient with congenital heart disease

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Abstract

Diagnosis of retroaortic left innominate vein is usually made by echocardiography, computed tomography, and magnetic resonance imaging, but in several cases, diagnosis is made in the theater.

KEYWORDS

diagnosis, retroaortic left innominate vein, tetralogy of Fallot

An 11-month-old girl underwent a surgical operation for correction of a double-chambered right ventricle with a perimembranous ventricular septal defect and right-sided aortic arch. After midline sternotomy, a left innominate vein with a retroaortic route was identified. The patient underwent a surgical correction, and she had an uneventful course.

An 11-month-old girl underwent a surgical operation for correction of a double-chambered right ventricle with a perimembranous ventricular septal defect and right-sided aortic arch. Chest X-ray was without pathological findings (Figure 1). After midline sternotomy and subsequent removal of the thymus, a left innominate vein with a retroaortic route was identified (Figure 2). The patient underwent a surgical correction, and she had an uneventful course. Diagnosis is usually made by echocardiography, computed tomography, and magnetic resonance imaging, but in several cases, diagnosis is made in the operation theater.

Retroaortic left innominate vein incidence in patients with congenital heart defect was found to be 0.55%–0.57% and the associated anomalies were tetralogy of Fallot (TOF),

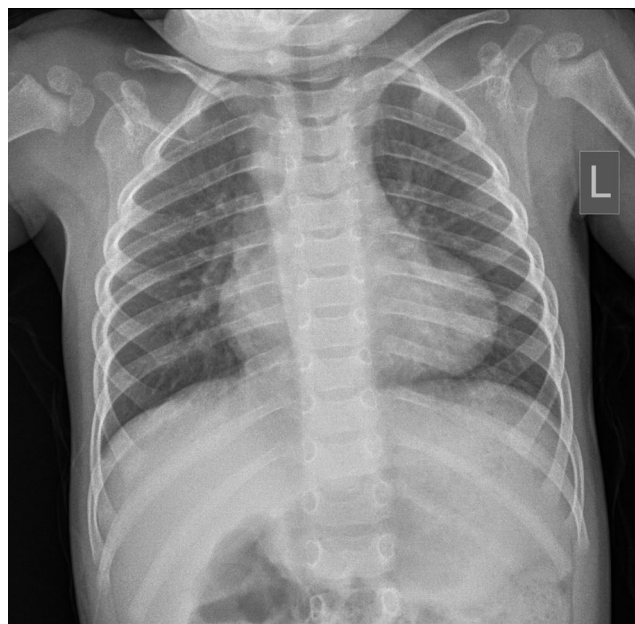


FIGURE 1 Preoperative chest X-ray

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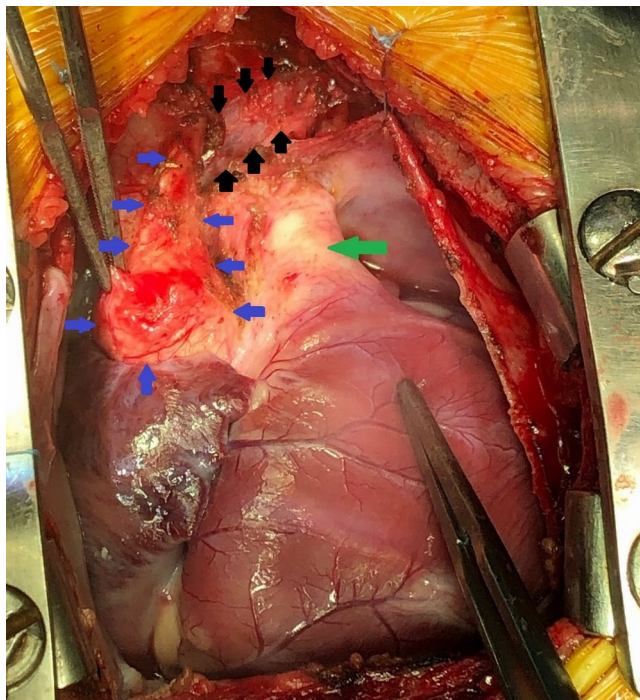


FIGURE 2 Intraoperative view. Retroaortic left innominate vein (black arrow), ascending aorta (blue arrow), pulmonary trunk (green arrow)

ventricular septal defect, right ventricular outflow tract obstruction, pulmonary atresia, and interrupted aortic arch.^{1,2} Embryologically, abnormal development of pulmonary arteries induces the sparing of the inferior transverse plexus, possibly leading to formation of an anomalous course of the innominate vein, thus explaining the frequent association of the retroaortic innominate vein with TOF and right aortic arch.

Presence of retroaortic innominate vein by itself is with no clinical significance, but surgeons and interventionalists should be aware of this malformation as it may have implications for surgical planning and endovascular procedures.

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Published with written consent of the patient.

CONFLICT OF INTEREST

None declared.

AUTHOR CONTRIBUTIONS

All authors contributed equally in carrying out the medical literature and writing the manuscript.

ETHICAL STATEMENT

Informed consent was obtained from the parents of patient.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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