Tricuspid valve tissue in the left ventricular outflow tract following ventricular septal defect repair

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DESCRIPTION

We present a case of a 28-year-old woman who was born with a ventricular septal defect (VSD) and who was initially treated by pulmonary artery (PA) banding at the age of 5 months, followed by PA band removal and VSD repair at the age of 17 months. She was referred by her local cardiology team to the adult congenital cardiology team due to the appearance of tissue in the left ventricular outflow tract (LVOT). This was not causing any symptoms, but due to thromboembolic concerns, she was started on aspirin.

The operation note documents: "it was necessary to use quite a lot of the tricuspid leaflet to completely close the defect superiorly". Owing to poor transthoracic windows, we arranged for the patient to undergo a three-dimensional transoesophageal echocardiogram to help to delineate the lesion.

The TOE demonstrates two folds of tissue in the posterior LVOT, 14 mm below the aortic valve. Using 3D multiplane reformatting, it was possible to see the anatomical relationship of this tissue to the septal tricuspid valve leaflet, and the area where it was used to patch over the VSD (figure 1). This

was not causing obstruction at rest or on isoprenaline infusion, and is being treated conservatively. The 3D volume reconstruction allows visualisation of the entirety of the LVOT, aiding assessment and understanding of anatomical relationships (videos 1 and 2).

Figure 1 Multi-plane reformatting of the left ventricular outflow tract (LVOT) from a three-dimensional transoesophageal echocardiogram volume. (A) inter-atrial septum, (B) aneurysmal tissue in the LVOT, (C) original hinge point of the septal tricuspid valve leaflet, (D) portion of the septal tricuspid valve leaflet used to close the ventricular septal defect (D), (E) small remaining portion of the septal tricuspid valve leaflet coapting with the anteriosuperior leaflet.

Video 1 Three-dimensional transoesophageal echocardiogram volume rendering of the left ventricular outflow tract demonstrating a long axis view.

Video 2 Three-dimensional transoesophageal echocardiogram volume rendering of the left ventricular outflow tract demonstrating a short axis view.

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Learning points

- ▶ There are many causes of subaortic obstruction, including previous surgical intervention on the ventricular septum.
- ▶ Transoesophageal echocardiography with three-dimensional reconstruction allows much easier and more accurate assessment of anatomically complex lesions.
- ▶ Using multi-plane reformatting allows the generation of optimum imaging planes, which is not possible using conventional two-dimensional echocardiography.

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