Double-chambered right ventricle
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Citation

Abstract
We describe a case of a double-chambered right ventricle with an intact ventricular septum.

CASE REPORT
A 21-year-old male was admitted to our hospital with dyspnea. Transthoracic echocardiography and cardiac catheterization revealed a infundibular pulmonary stenosis with a pressure gradient of 80 mm Hg. Cardiac catheterization pointed out no additional pathology(Figure 1).

Figure 1
He was operated under endotracheal general anesthesia and in supine position. Perioperatively, it was revealed that infundibular region and pulmonary valve were completely normal; whereas inflow region of the right ventricle showed stenosis. (Figures 2 and 3).
Double-chambered right ventricle

Figure 3
Figure 3

Hypertrophied muscle bundles at the stenotic region of the pulmonary inflow were resected (Figure 4).

Figure 4
Figure 4

21 mm Hegar dilator could be passed easily through resected area which indicated that adequate dilation was obtained (Figure 5).

Figure 5
Figure 5

Incisions of right ventriculotomy and pulmonary artery were closed primarily (Figure 6).

Figure 6
Figure 6

The post-operative course was uneventful. Histologic examination revealed cardiac muscle cell hypertrophy and disorganization. Postoperative echocardiographic data confirmed complete correction of the lesion.
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COMMENTS

Double-chambered right ventricle is a rare congenital heart disease. The presence of anomalous muscle bundles may produce a pressure gradient between the inflow and outflow portions of the right ventricle, thus resulting in double-chambered right ventricle bearing troublesome clinically in its diagnosis.

Accurate determination of the severity of the stenosis and the anatomy of the obstructing lesion are important in devising a treatment strategy. Multiplane transesophageal echocardiography provides excellent views of an anomalous muscle bundle in the right ventricle, which differed from a moderator band by its insertion site on the right ventricle.

Radical correction for two-chambered right ventricle in Shimizu et al study was classified into 3 groups according to the method used for releasing the stenosis in the right ventricle; Group A: resection of thickened fibrous tissue; Group B: resection of the fibrous tissue and abnormal muscular bundles; and Group C: resection of the fibrous tissue and abnormal muscular bundles with patch-enlargement of the right ventricular outflow tract. Generally, resection of the hypertrophic muscle bundles practically eliminated the obstruction.

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References

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