







# A case report of combined tricuspid valve and pulmonary valve repair

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**Introduction:** Congenital tricuspid valve (TV) malformations are very rare entities. The two most common types are Ebstein's anomaly (EA) and tricuspid valve dysplasia (TVD). Although very similar, there are distinct differences between these conditions. EA is hallmarked by apical displacement of the tricuspid valve, failure of leaflet delamination from the underlying myocardium and a variable degree of myocardial dysfunction.<sup>1</sup> These features are absent in TVD, where tricuspid valve leaflets are thickened, chordal apparatus is foreshortened and may be ruptured.<sup>2</sup> Notwithstanding these well-defined differences, distinguishing between these two conditions is often difficult. Herein, we present a young patient who underwent tricuspid and pulmonary valve repair at our institution.

**Case report:** The patient is an 18-year-old female who was misdiagnosed with EA as a neonate. In the neonatal period, she underwent the Rashkind procedure and pulmonary valve balloon dilatation due to the pulmonary stenosis (PS). At the age of 4, atrial septal defect was percutaneously closed with Amplatzer device. At the age of 15, she underwent cardiac magnetic resonance imaging, which revealed severe TV insufficiency with a regurgitation fraction of 50%, severely dilated right ventricle with end-diastolic volume of 210 ml and a mild pulmonary regurgitation. Surgical correction was performed via median sternotomy, on cardiopulmonary bypass and in diastolic cardiac arrest. An aortic homograft leaflet was used to partially neocuspidise the PV. Tricuspid valve repair comprised of ring annuloplasty with Edwards MC3 30mm ring, anteroseptal commissure closure and the modified Sebening stitch, i.e. approximation of the heads of the anterior and septal papillary muscle. Intraoperative transesophageal echocardiography showed excellent surgical results, without TV regurgitation and only a trace of PV regurgitation. The postoperative course went uneventfully.

**Conclusion:** Combined TV and PV regurgitation in young adult patients presents a challenging surgical problem. Valve repair is of immeasurable value to this population as it restores life expectancy comparable to the age- and gender-matched population. In patients with congenital TV insufficiency, multi-modal imaging is crucial for precise diagnosis. Furthermore, this case report highlights the safety and feasibility of multiple combined valve repairs in the valve repair centre of excellence.

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## LITERATURE

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