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Letters to the Editor

Percutaneous treatment of ventricular tachycardia, perimembranous ventricular septal defect and patent foramen ovale: A case report

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Perimembranous ventricular septal defect in adulthood can be complicated by episodes of sustained ventricular tachycardia [1,2]. The treatment algorithm of both the arrhythmia and congenital cardiac defect can raise some issues, namely medical versus interventional therapies.

We report the case of a 40 years old man, admitted for slow ventricular tachycardia with left bundle branch block morphology at 120 bpm, the sinus rhythm was restored with a DC shock cardioversion. During the hospital stay the patient experienced a cryptogenic transient ischemic attack. The transesophageal echocardiogram showed a perimembranous ventricular septal defect, the maximal diameter measured was 12 mm, with left to right shunt, moderate biventricular enlargement, mild left ventricular systolic dysfunction with ejection fraction around 50%, and a patent foramen ovale with right to left shunt during Valsalva manoeuvre with echocontrast (Fig. 1). The electro-physiological study, performed in another institution, identified the anterior rim of the ventricular septal defect as the site of re-entry; the focus was efficaciously treated with radiofrequency ablation [3]. The patient was treated with amiodarone and beta-blocker for three months, then percutaneous closure of both the perimembranous ventricular septal defect and the patent foramen ovale were performed in standard fashion [4,5]; because of the morphology and the position, a 16 mm muscular Amplatzer VSD occluder (AGA Medical Corporation, Golden Valley, MN, USA) was chosen for the defect

closure, while the PFO was closed with an Amplatzer 25 mm PFO occluder (AGA Medical Corporation, Golden Valley, MN, USA), with an optimal final result (Fig. 2). The postoperative course was uneventful and the patient was discharged the day after. At 12 months of follow up the patient is doing well, in NYHA class 1, on beta-blocker therapy. The transesophageal echocardiogram showed the correct position of both the devices and the left ventricle end-diastolic diameter reduction within the normal range. No recurrences of ventricular tachycardia have been recorded.



Fig. 1. Left ventriculogram, LAO-Cr view: Perimembranous ventricular septal defect is visualized by left to right shunt of the contrast.

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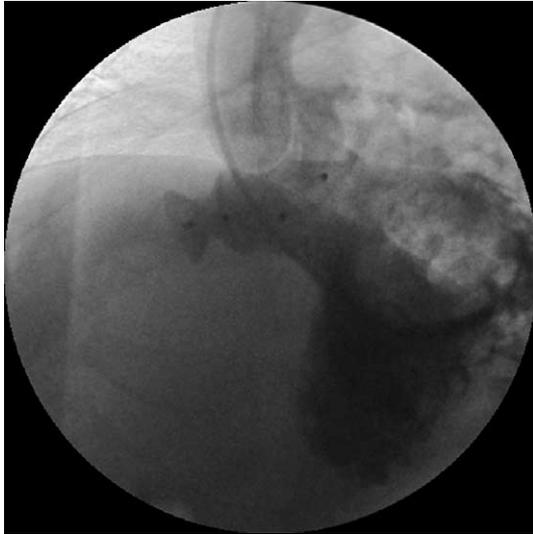


Fig. 2. Left ventriculogram, LAO-Cr view, after ventricular septal defect and patent foramen ovale closure with Amplatzer devices. Some contrast is still shunting into the right ventricle through the ventricular septal defect device; it will completely disappear in the next 24 h.

51 The peculiarities of this case are the onset of sympto-
 52 matic ventricular tachycardia in adult age, the coexistence of
 53 an aneurismatic perimembranous ventricular septal defect
 54 which was shown to be the anatomic arrhythmogenic

substrate of the ventricular tachycardia focus, and caused 55
 the hemodynamic impairment by chronic left to right shunt 56
 and biventricular overload. To our knowledge this is the first 57
 case reported in literature of consecutive percutaneous 58
 treatment of ventricular tachycardia, perimembranous ven- 59
 tricular septal defect and patent foramen ovale. The 60
 therapeutic strategy adopted and the correct timing of the 61
 procedures allowed us to treat the patient, efficaciously and 62
 safely, only with transcatheter interventional cardiology 63
 techniques. 64

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