Case report

Parachute tricuspid valve in an asymptomatic adult

Jagdish C. Mohan¹, Chandra Shekhar², Vipul Mohan³, Bimalpreet Kaur³, Shivesh Kumar Singh³¹Chairman, ²Consultant, ³Resident, Department of Cardiology, Ridge Heart Centre, Sunder Lal Jain Hospital, Ashok Vihar-III, New Delhi – 110016.

KEY WORDS

Parachute tricuspid valve
Trans-oesophageal echocardiography
(TEE)

A B S T R A C T

Parachute tricuspid valve is a rare anomaly usually reported in small children. This report describes transthoracic and trans-oesophageal echocardiographic (TEE) features of parachute mitral valve in an adult patient.

Copyright © 2012, Cardiological Society of India. All rights reserved.

Introduction

The malformation of an atrioventricular valve in which the tension apparatus springs from a single papillary muscle or muscle group has been labelled as the parachute valve. It may or may not have any haemodynamic significance.

Parachute tricuspid valve is a rare anomaly with <10 cases reported in the literature since 1972 when it was first described at necropsy in a patient with cor triatriatum.¹ The initial three cases were described at necropsy.^{1–3} The first clinical description of the anomaly without right-sided obstructive lesions was made in 2006.⁴

Case report

This report describes a relatively asymptomatic 30-year-old individual who was incidentally found to have a systolic murmur. A complete transthoracic and trans-oesophageal echocardiographic examination revealed a 12 mm secundum atrial septal defect with a large left-to-right shunt, pulmonary artery pressures of 45/20 mmHg and a typical parachute tricuspid valve with a single short papillary muscle (Figures 1 and 2) which was attached to all the three tricuspid leaflets showing

Figure 1 Transthoracic apical four chamber view in end-diastole showing septal and anterior tricuspid leaflets attached to a single short papillary muscle (arrow). LA: left atrial, LV: left ventricle, RA: right atrial; RV: right ventricle.

leaflet crowding during diastole and doming although with no significant obstruction (Figure 3).

Discussion

In our case, there was a single papillary muscle group giving rise to all the shortened and thickened chordae tendineae

*Corresponding author.
E-mail address: jcmohan@vsnl.com

Figure 2 Zoomed picture of Figure 1. RA: right atrial, RV: right ventricle.

supporting the tricuspid valve. Previously, a single case with associated atrial septal defect and parachute tricuspid valve has been reported.⁴

Sometimes, the normal number of papillary muscles is seen, but one muscle is much larger than its peers and shows some characteristic features. This is known as a parachute-like asymmetric valve.⁵ Detailed echocardiographic examination in this case did not reveal the presence of any other papillary muscle.

Figure 3 Trans-oesophageal echocardiographic view at 98°. Anterior and posterior tricuspid leaflets are attached to a single short papillary muscle (arrow). Note a small secundum atrial septal defect. RA: right atrial.

References

1. Maitre Azcarate MJ. Parachute deformity of the tricuspid valve. *Thorax* 1980;35:240.
2. Milo S, Stark J, Macartney FJ, Anderson RH. Parachute deformity of the tricuspid valve. *Thorax* 1979;34:543–6.
3. Ariza S, Cintado C, Castillo JA, et al. Parachute tricuspid valve associated with Fallot's tetralogy. *Arch Mal Coeur Vaiss* 1979;72:317–20.
4. Marwah A, Suresh PV, Shah S, Misri A, Maheshwari S. Parachute tricuspid valve. *Eur J Echocardiogr* 2006;7:226–7.
5. Purvis JA, Barr SH. Parachute-like asymmetric tricuspid valve in an asymptomatic adult. *Eur J Echocardiogr* 2010;11:E23.