A healthy 23-year-old man presented at an emergency room with a 6-week history of palpitations. An early systolic murmur was heard over the pulmonary area. EKG showed junctional tachycardia without evidence of pre-excitation syndrome (Panel A). Transthoracic echocardiography displayed a large mobile echo dense mass attached to the tricuspid valve. The mass prolapsed in systole into the right ventricular outflow tract (Panel B a and b; Supplementary data online, Videos S1 and S2). Cardiac Magnetic Resonance Imaging (MRI) revealed a circumscribed mass suggesting cardiac myxoma (Panel C a and b). The surgical removal of the tumour was successfully performed with a macroscopic feature suggesting cardiac myxoma and a pedicle implanted on the right side of the interventricular septum (Panel D a and b). Unexpectedly, cardiac rhabdomyoma was diagnosed with pathognomonic spider cells and immunohistochemical reaction to desmin on histological findings (Panel E). The patient is doing well at the 2-year follow-up. Of note cardiac rhabdomyoma and myxoma, both show similar echocardiography, CT scan, and MRI characteristics; this likely explains the pre-operative misdiagnosis in our case.

Panel A 12-lead EKG showing junctional tachycardia.
Panel B (a) Parasternal short-axis view shows an echo dense mass in the right ventricular outflow tract. (b) Parasternal long-axis view shows the same mass in the right ventricle.
Panel C (a) MRI images, two-chamber view, fast gradient echo sequence with T2/T1 weighting and short-acquisition time [balanced turbo field echo (BTFE)] shows an iso intense mass in a dilated right ventricle. (b) MRI images, four-chamber view, BTFE sequences show the mass in the right ventricle. The right atrium is dilated.
Panel D (a) Per-operative view of the tumour located on the right ventricle behind the septal leaflet of the tricuspid valve. (b) The macroscopic view of the excised tumour.
Panel E Histological section of the mass shows a well-circumscribed tumour with tightly packed spindle cells focally vacuolated cytoplasm with round or oval nucleus (haematoxylin and eosin staining, magnification ×200).

Supplementary data are available at *European Heart Journal – Cardiovascular Imaging* online.