

## P1491

**Aneurysm of the membranous septum after spontaneous closure of ventricular septal defect combined with bicuspid aortic valve**Drakopoulou M.<sup>1</sup>; Nyktari E.<sup>2</sup>; Soulaidopoulos S.<sup>1</sup>; Oikonomou G.<sup>1</sup>; Toutouzas K.<sup>1</sup>; Tousoulis D.<sup>1</sup><sup>1</sup>Hippokraton General Hospital, Athens, Greece<sup>2</sup>University Hospital of Heraklion, Heraklion, Greece

An 18-year-old asymptomatic patient with a cardiac background of ventricular septal defect (VSD) and bicuspid aortic valve diagnosed in early childhood, was referred to our Adult Congenital Heart Disease (ACHD) outpatient clinic for routine assessment. Imaging by transthoracic echocardiography and Cardiac Magnetic Resonance (CMR) showed a well-developed multilobulated appendiform saccular formation (34x20mm) arising from the right ventricular side of the membranous septum inferior to the anterior aortic cusp and just beneath the septal leaflet of the tricuspid valve, protruding into the right ventricular outflow tract and the body of right ventricle. The fibrous quality and the absence of myocardium in this structure led to the formation of an aneurysm of the membranous septum (AMS) with the characteristic out-pouching or 'windsock' appearance from its distention during ventricular systole (Figure). There was no shunt between the ventricles. The aortic valve was true bicuspid with severe aortic regurgitation and an eccentric jet towards the anterior leaflet of the mitral valve. The left ventricle was dilated with preserved systolic function. On the basis of the above information the Heart Team decided for surgical management. Both the presence of a true bicuspid valve (embryologically linked to VSD) as well as the pre-existing left-to-right shunting (until the spontaneous VSD closure) seem to have contributed to aortic valve dysfunction in this case. An interesting physical phenomenon concerning fluid dynamics, known as the 'Venturi effect', occurs in patients with 'aneurysmal transformation' of the ventricular septum, where the VSD becomes smaller creating thus a low-pressure zone that affects the adjacent aortic valve cusp, causing prolapse and, hence, aortic valve regurgitation.

Non-invasive imaging evaluation of patients with AMS is required for optimal diagnosis and treatment as well as for follow-up examinations. Echocardiography is an effective tool for diagnosing AMS, mainly as an incidental finding in asymptomatic subjects whereas CMR is capable of three-dimensional anatomical assessment and provides functional data about the blood flow into the aneurysm and integrity of the ventricular membranous septum.

Abstract P1491 Figure

