

Title page

Contained Aortic Annulus Rupture With Spontaneous Ventricular Septum Dissection

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Abstract

Dissection of the interventricular septum (IVS) is an extremely rare entity. The patients with ventricular septum dissection have been reported before. Most cases were diagnosed with coronary artery disease, Bechet's disease or injury. However, we will report the case not linked to them and treated by aortic valve repair. It may be the first case of spontaneous contained aortic annulus rupture with dissection of IVS, which was successfully treated by surgery.

Contained Aortic Annulus Rupture With Spontaneous Ventricular Septum Dissection

Dissection of the interventricular septum (IVS) is an extremely rare entity^[1]. This may be the first case of spontaneous contained aortic annulus rupture with dissection of IVS, which was successfully treated by surgery.

An 54-year-old man with no history of cardiac surgery or thoracic trauma presented to hospital with exertional dyspnea. He has suffered from recurrent oral, genital ulcers and skin lesions many years. Transthoracic echocardiograph revealed contained aortic annulus rupture from the annulus of right sinus of Valsalva to the ventricular septum, right aortic cusp prolapsing with aortic regurgitation, and a pouch-like structure on the left ventricular outflow tract (3.4*2.8cm) (Fig 1:A and B). Computed tomography demonstrated abnormal IVS cavities and confirmed the diagnosis (Fig 2).

The procedure was performed with cardiopulmonary bypass. During the procedure, an contained avulsion was identified external to aortic annulus about 12 mm in length along right coronary cusp, extending downward into interventricular septum forming a pouch-like structure (Fig 3: A). The pouch-like structure was partially resected and reimplanted to aortic annulus with running 5/0 Prolene suture. A patch of fresh pericardium was tailored to reconstruct right coronary cusp for the shortened and diminished cusp (Fig 3: B). Aortic valve was normal without regurgitation with post-operative TEE (Fig 4). During follow-up, echocardiography showed a normal aortic valvular function. Contained aortic annulus rupture with ventricular septum dissection is a rare entity and its diagnosis poses a challenge even when the best imaging techniques are applied. Surgical exploration may clarify the reason for the partial aortic annulus avulsion.

Reference.

[1] Dong Lili, Pan Cuizhen, Zhao Weipeng, et al. A Traumatic Rupture of Valsalva Sinus With Dissection Into the Interventricular Septum. *J Am Coll Cardiol*, 2011, 57(23): e373 .

Fig 1:A and B: Transthoracic echocardiograph revealed contained aortic annulus rupture from the annulus of right sinus of Valsalva to the ventricular septum, right

aortic cusp prolapsing with aortic regurgitation, and a pouch-like structure on the left ventricular outflow tract(3.4*2.8cm).

Fig 2: Computed tomography demonstrated abnormal IVS cavities and confirmed the diagnosis.

Fig3: A. During the procedure, an contained avulsion was identified external to aortic annulus about 12 mm in length along right coronary cusp, extending downward into interventricular septum forming a pouch-like structure.

Fig 3:B. A patch of fresh pericardium was tailored to reconstruct right coronary cusp for the shortened and diminished cusp.

Fig 4: Aortic valve was normal without regurgitation with post-operative TEE.