ANEURYSM OF SINUS OF VALSALVA DISSECTING INTO THE INTERVENTRICULAR SEPTUM - ECHOCARDIOGRAPHIC DIAGNOSIS (A Case Report)

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ABSTRACT

Aneurysm of sinus of Valsalva dissecting into interventricular septum is a rare entity. We report one such case who was incidentally diagnosed by echocardiography to have this abnormality during evaluation of a clinically suspected isolated aortic regurgitation.

MJAFI 1994; 50 : 149-150

KEY WORDS : Aneurysm - dissecting - sinus of Valsalva; Echocardiography

Introduction

Dissection into inter ventricular septum (IVS) is a very rare and uncommon complication of the aneurysm of sinus of Valsalva. It may present as a clinical enigma with uncertain differential diagnosis. The only means of recognition of this rarity are incidental echocardiography, angiography and surgical intervention, or, after death, by an enforced post-mortem examination.

CASE REPORT

A 20 year old male was admitted with symptoms of viral hepatitis of two months duration, along with progressively increasing exertional dyspnoea and swelling of feet of 15 days duration. Past history revealed a prolonged febrile illness with arthralgia in childhood. Clinically there was mild icterus, low grade fever, pallor and minimal pitting oedema feet. Pulse was 96/min regular and collapsing. BP was 130/50 mm Hg. JVP was raised by 8 cm and the jugular venous pulsations were normal. Chest was clear. There was no hepatomegaly or ascites, but spleen was palpable by 1 cm. Heart showed no enlargement. Sounds were normal. An early diastolic murmur was audible along the left lower parasternal border and a grade II/VI ejection systolic murmur was heard in aortic area conducted to carotids. Investigations revealed Hb 6.0 g/dl, ESR = 25 mm 1st hr. TLC, DLC - normal. Peripheral smear showed dimorphic anaemia. Serum bilirubin was 3.0 mg/dl with SGOT and SGPT

values of 82 IU/L and 154 IU/L respectively. HBsAg was positive. A 12 lead ECG and skiagram of heart and chest did not reveal any abnormality. Blood for VDRL was negative.

He was diagnosed to have Hepatitis B virus infection with anaemia and treated accordingly. CVS findings led to clinical diagnosis of RHD, aortic regurgitation with CCF and infective endocarditis. However, 2-D echocardiography showed aneurysm of sinus of Valsalva dissecting into IVS, with classical diastolic expansion of echoluscent space within the IVS communicating with the right sinus of Valsalva (Fig. 1). There were no vegetations to suggest bacterial endocarditis. The recovery from viral hepatitis, anaemia and CCF was satisfactory. The patient, however, refused further invasive cardiac investigations and has been lost to follow-up.

Discussion

Aneurysm of sinus of Valsalva is an uncommon entity found more often in males [1,2]. It is considered to be congenital in origin, though syphilis and infective endocarditis have also been blamed. The commonest site is the right coronary sinus, but occasionally the non-coronary sinus may also be involved. Pathologically, the media of the adjacent aortic wall is either congenitally deficient or fails to fuse with the annulus fibrosus of the aortic valve [3] resulting in relative weakness of this part and consequent

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Fig. 1: 2-D Echocardiogram (long axis parasternal view) showing echo-free space within the inter-ventricular septum (marked O) due to blood flow from ruptured aneurysm of sinus of Valsalva (arrow). IVS = inter-ventricular septum, AC = aorta, LV = left ventricle, LA = left atrium.

aneurysmal dilatation of the underlying sinus [3,4]. Uncomplicated aneurysm of sinus of Valsalva may not produce any symptoms in life to remain undetected. Rarely it presses on the bundle of His or any of its distal branches resulting in conduction anomalies [5]. The aneurysm may enlarge and displace the aortic valve resulting in aortic regurgitation. Pressure of the aneurysm on the coronary arteries especially the right branch may produce coronary artery disease and sometimes acute myocardial infarction [2].

The aneurysm may further enlarge and finally may rupture into right atrium or right ventricle, producing symptoms of sudden severe precordial pain and dyspnea. A continuous murmur occasionally associated with a thrill may be audible in the left sternal border. The haemodynamic load may produce biventricular dilatation and congestive cardiac failure. ECG may show tachycardia, conduction defects and right ventricular hy-

pertrophy and strain, while X-ray chest may either be normal or show marked cardiomegaly and pulmonary plethora.

Dissection of the aneurysm of sinus of Valsalva into the IVS is the most uncommon and one of the rarest complications [1]. Unlike other ruptures, this condition may remain undiagnosed because of absence of any significant symptoms or signs. It is more often associated with conduction disturbances like incomplete or complete A-V block or fascicular blocks [1]. 2-D echo is diagnostic with demonstration of an echo free space in the IVS with diastolic expansion [6].

The case reported by us was diagnosed echocardiographically during investigation of suspected rheumatic heart disease. The aortic regurgitation noted clinically was apparently secondary to the aneurysm. We could not proceed further with cardiac catheterisation, angiography and subsequent surgical repair because of the patient's unwillingness.

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