Case Report

RUPTURE OF SINUS OF VALSALVA PRESENTING WITH ACUTE LEFT VENTRICULAR FAILURE

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Summary:
Rupture sinus of Valsalva is a relatively rare condition. We report a case of ruptured sinus of valsalva presenting as acute left ventricular failure. The patient underwent successful repair of ruptured sinus of valsulva with closure of fistula. During Ventriculotomy the defect was repaired using Teflon butterrressed 5/0 prolene interrupted sutures. After dramatic relief of symptoms patient was discharged on sixth postoperative day.

KEY WORDS: Rupture of Sinus of Valsalva, Ventriculotomy.

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A male, 40 years of age with known systemic hypertension for 10 years was admitted at the National Institute of Cardiovascular Diseases, Karachi with symptoms of shortness of breath, paroxysmal noturnal dysponea and palpitation for one month. He was a non-smoker, non-diabetic and had no significant past history of any major illnesses. There was no family history of coronary artery disease.

Clinical Examination: He was a man of an average built and was markedly breathless at rest, his pulse was regular with large volume at 80 bpm, Blood Pressure was 120/80 mmHg in both arms. He had a 3/6 continuous murmur with maximum intensity in systole at the left sternal border. He also had bilateral basal creptitations upto mid chest with significant expiratory wheeze.

Investigations: Routine Lab test were within normal limit. His Chest X-Ray showed Cardiomegaly with features of left ventricular failure. E.C.G showed Sinus Rhythm with normal axis, bifid P wave in V-1 with significant left ventricular hypertrophy. Transthoracic Echocardiography showed left atrial enlargement, right ventricular enlargement, dilated ruptured right coronary sinus of valsalva, enlarged LV with preserved systolic function. Colour-Flow showed left to right shunt at the level of coronary sinus. C/W showed RV/MPA pressure 50 mmHg.

Management: He was managed as acute Left Ventricular Failure (LVF) with conventional treatment without much relief. His overall condition subsequently detoriated and thus he was referred to the cardiac surgeon for immediate intervention.

The patient underwent a successful and an uneventful course repair of the ruptured sinus of valsalva with closure of the fistula. During surgery right ventriculotomy was done and the defect was repaired using Teflon butterressed 5/0 prolene interrupted sutures. Aortotomy

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Figure-1: Dilated ruptured right coronary sinus of valsalva

Figure-2: Ruptured sinus of valsalva aneurysm in to right ventricle

was done and the defect in the right coronary sinus was repaired using dacron patch .There was dramatic relief of his symptoms and the abnormal auscultatory sounds disappeared after surgery. The patient went home after 6 days free of symptoms and on minimal medications.

DISCUSSION

Rupture of sinus of valsalva is a rare entity and was previously elusive to reliable diagnosis by non-invasive means. The unruptured aneurysm is usually silent and it often remains undiagnosed but may cause symptoms by right ventricular outflow obstruction.[1] The rupture may occur into any cardiac chamber, predominantly the right ventricle[2], the intraventricular septum[3], and the precardial space.[4] The pathology of this condition is thought to be due to a failure of the fusion between the aortic media and the heart at the level of annulus fibrousus of the aortic valve, with subsequent aneurysmal enlargement at this weak point due to the high pressure at the root of the aorta .[5]

Sinus of Valsalva is three localized bulgings in the aortic root opposite the cusps of the aortic root. Aneurysm of the sinus is a rare condition which may be a congenital or acquired cardiac anomaly, having an incidence of 1.09% in the oriental population and 0.2% in the western population[6] Aneurysms of the sinus of valsalva are not usually clinically apparent unless perforation occurs which simulates aortic regurgitation.[7]

The two anterior sinuses are named after their respective coronary ostia. That is right coronary sinus and left coronary sinus and posterior coronary sinus is called the non- coronary sinus.

These sinuses may be affected by conditions like syphilis[7] Marfan's syndrome[8], sub-acute bacterial endocarditis, ankylosing spondylitis[9,10] rheumatoid arthritis[11] or trauma may lead to weakness of media, generalized dilation of the one or more sinuses usually the right coronary sinus and non coronary sinus but may also affect left coronary sinus.

Patients with aneurysm of sinus of valsalva remain asymptomatic clinically unless the aneurysm ruptures. The onset may be sudden or insidious. In our case patient presented with sudden onset of shortness of breath which progressed dramatically.

Traditionally speaking the gold standard for diagnosis of this lesion has been the cardiac catheterization and aortography; however with the advent of newer generation ultrasound machines, echocardiography[12] has become the most widely employed tool for diagnosing the condition. In our case also the surgeon relied on the findings of echocardiography and the patient did not have to go through cardiac catheterization.

Surgery should be done as soon as rupture of sinus of valsalva aneurysm is diagnosed be-

cause without surgery most cases will die of intractable congestive heart failure. Mean survival without surgery is not more then 1-2 years with optimal medical treatment.

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