AN INTERESTING CASE OF CONTINUOUS MURMUR

VIJAYASARATHY
Department of General Medicine,
MADRAS MEDICAL COLLEGE AND GOVERNMENT GENERAL HOSPITAL

Abstract:
A 25yr old female presented to us with features of congestive cardiac failure. She had features of hyperdynamic circulation with pulmonary hypertension and a loud continuous murmur. Echocardiogram showed a communication from right coronary sinus into the right atrium, suggestive of rupture of aneurysm of sinus of Valsalva.

Keyword: Coronary Sinuses of Valsalva, Continuous murmur, Hyperdynamic Circulation, Pulmonary Hypertension, Congestive Cardiac Failure, Echocardiogram

A 25 year old female patient presented with progressively increasing breathlessness, giddiness, intermittent palpitations. She also had history of pedal edema and abdominal distension with a reduced urine output. History of Paroxysmal nocturnal dyspnea was present. She had no cough with expectoration, chest pain, hemoptyis, fever, jaundice, joint pain or loss of weight/appetite. She had no comorbid illness like diabetes, systemic hypertension, tuberculosis or epilepsy. She had no history of rheumatic fever in the past. She was taking mixed diet, had regular menstrual cycles and was unmarried. No other family members were suffering from similar illness. She had been taking some indigenous medications for her symptoms. On examination, she had pallor and bilateral pitting pedal edema. She was short statured, with high arched palate, low set ears, polydactyly and kyphoscoliosis. Pulse was 80/mt, with intermittent tachycardia, large volume collapsing pulse. Pulsus alternans during tachycardia. BP was 140/60mmHg in upperlimbs and 160/80 in lower limbs. Cardiovascular system examination showed elevated JVP, down and out displaced hyperdynamic apical impulse, parasternal heave and a continuous thrill over the left parasternal area. On auscultation a grade5/6 continuous murmur of machinery quality which diminished.
around 2nd heart sound and again increases in diastole. The murmur was well heard in left parasternal region. Basic investigations revealed a normal renal & liver function tests. Her haemoglobin was 8g% with other counts being normal. Her Chest X-ray showed mild cardiomegaly. Her ECG taken during the tachycardia episode revealed Ventricular Bigeminy.

Echocardiogram revealed the rupture of aneurysm of Sinus of Valsalva from non-coronary cusp in to the right atrium. The interatrial septum bulging towards left atrium; mild Tricuspid and Pulmonary regurgitation and a mild pericardial effusion. So our final diagnosis was rupture of aneurysm of Sinus of Valsalva with congestive cardiac failure. After controlling her cardiac failure with anti-failure medications and packed red cell transfusion, she had been taken up for surgical ligation of the aneurysm. Post operative period was uneventful and patient is doing well after surgery.

DISCUSSION:
RUPTURE OF SINUS OF VALSALVA:
Coronary sinuses are three small outpouchings in the wall of the aorta. They extend from the base of the aortic valve leaflets to the sinotubular ridge. Their purpose is to create a hollow space to prevent occlusion of the coronary artery orifices. The three coronary sinuses are right, left and non-coronary sinuses.1 When there is a weak point in the aortic wall, due to localized interruption of the media, aneurysm is formed which extends like a finger like projection. When it arises from right coronary sinus, it extends in to the right atrium or right ventricle. When it arises from the non coronary sinus, it extends in to the right atrium. Aneurysm from left coronary sinus is uncommon.1,3

John Thunman first described aneurysm of sinus of valsalva. The aneurysms can be congenital or may arise secondary to aortic regurgitation, syphilis, cystic medial necrosis, chest injury or infective
RUPTURE OF SINUS OF VALSALVA: Coronary sinuses are three small outpouchings in the wall of the aorta. They extend from the base of the aortic valve leaflets to the sinotubular ridge. Their purpose is to create a hollow space to prevent occlusion of the coronary artery orifices. The three coronary sinuses are right, left and non-coronary sinuses.1 When there is a weak point in the aortic wall, due to localized interruption of the media, aneurysm is formed which extends like a finger like
projection. When it arises from right coronary sinus, it extends into the right atrium or right ventricle. When it arises from the non coronary sinus, it extends in to the right atrium. Aneurysm from left coronary sinus is uncommon.\(^1,3\) John Thunman first described aneurysm of sinus of valsalva. The aneurysms can be congenital or may arise secondary to aortic regurgitation, syphilis, cystic medial necrosis, chest injury or infective projection. When it arises from right coronary sinus, it extends in to the right atrium or right ventricle. When it arises from the non coronary sinus, it extends in to the right atrium. Aneurysm from left coronary sinus is uncommon.\(^1,3\)

Endocarditis. It can be associated with some structural defects like ventricular septal defect, bicuspid aortic valve, aortic regurgitation or coarctation of aorta.\(^4\) Unruptured aneurysms may be asymptomatic or may cause local obstruction to right ventricular outflow tract, tricuspid stenosis or regurgitation, conduction abnormalities or coronary artery compression.\(^1,5,8\) Rupture usually occurs from puberty to 30yrs of age. It may be spontaneous or precipitated by exertion, trauma or catheterization.\(^1,10\) When it ruptures in to the right atrium or ventricle, it produces pulmonary hypertension with hyperdynamic circulation.\(^9\) When it ruptures in to left ventricles, it presents with features of aortic regurgitation. It may also rupture in to pericardial space producing a tamponade.\(^1,6\) ECG usually reveals tachycardia or conduction defects and chamber enlargements. X-ray chest may show enlarged heart with prominent pulmonary artery shadows. Transthoracic echo can detect 75% of cases; sometimes transesophageal echo may be required to confirm the diagnosis or for preoperative assessment.\(^1,7\) Patients have to be managed for their heart failure and taken up for surgery. Surgical modalities available are transcatheter closure, aortic root reconstruction, primary suture closure, Bental procedure.\(^1,2\)

CONCLUSION: There are numerous causes of continuous murmurs and the loudest continuous murmur is caused by rupture of sinus of valsalva. Other causes like patent ductus arteriosus, aortopulmonary window should be considered. Management of failure and aggressive surgical correction, even of unruptured aneurysm is of utmost importance.

References:


6. Alteras H, Bjork VO, Cullhed I, Intonti F: Ruptured congenital aneurysm of sinus of Valsalva


