A Case of Rheumatic Fibrinous Pericarditis

Krishna Kumar Mohanan Nair, MBBS, MD, DM; Sanjay Ganapathi, MBBS, MD, DM; Harikrishnan Sivadasanpillai, MBBS, MD, DM; Sivasankaran Sivasubramanian, MBBS, MD, DM; Ajitkumar Valaparambil, MBBS, MD, DM; Jaganmohan Tharakan, MBBS, MD, DM

A 20-year-old male presented with worsening of shortness of breath of 1-month duration. He provided history of rheumatic fever in the past and was on intramuscular benzathine penicillin prophylaxis, which he discontinued for the last 2 years. There was no history of fever, cough, joint-related symptoms, or involuntary movements. He was moderately built and poorly nourished with bilateral pitting pedal edema. There was no skin lesion or subcutaneous nodules. Patient was afebrile and tachypneic at rest, with resting tachycardia, elevated jugular venous pressure, and blood pressure of 114/56 mm Hg in the right upper limb. Cardiovascular examination revealed cardiomegaly, soft first heart sound, loud second heart sound, grade 3/6 harsh pan systolic murmur at the apex, a soft blowing long early diastolic murmur at the left third intercostal space close to the sternal margin, and a mid-diastolic murmur at apex. Bisbasal fine crackles were heard on auscultating the chest. He had soft tender hepatomegaly as well. Complete blood count revealed polymorphonuclear leucocytosis (total count of 18,400/cm³ [4000–11,000/cm³] with 70% polymorphs and 30% lymphocytes), with raised erythrocyte sedimentation rate of 80 mm/h (0–7 mm/h). Antistreptolysin antibody titer was positive (277 IU/mL). Blood urea nitrogen was 11 mg/dL (7–18 mg/dL), and serum creatinine was 0.64 mg/dL (0.6–1.1 mg/dL). 12-lead surface ECG showed sinus tachycardia, left atrial enlargement, and left ventricular hypertrophy. His transthoracic echocardiogram (Movie I and II in the Data Supplement) revealed moderate circumferential pericardial effusion with strands throughout the pericardial cavity, especially in relation to left ventricle. It also showed dilated left ventricle and left atrium, thickened mitral and aortic valves, noncoapting and flail anterior mitral leaflet, restricted mobility of the posterior mitral leaflet with severe mitral and aortic regurgitation (Movie III in the Data Supplement), and mitral valve area of 1.9 cm² with transmitral gradient of 20/13 mm Hg at 94 bpm. A tuberculosis skin test was performed, which was negative.

With a reliable past history of acute rheumatic fever or established rheumatic heart disease, and in the face of documented group A streptococcal infection, 2 major or 1 major and 2 minor or 3 minor manifestations may be sufficient for a presumptive diagnosis of recurrent rheumatic fever. In patients with preexisting rheumatic heart disease, recurrence of rheumatic fever, especially in high prevalent countries, is almost invariably associated with carditis, manifested as pericarditis; new valvular regurgitation or aggravation of the existing valve lesions; increased cardiac enlargement; and congestive heart failure. Considering the history of previous rheumatic fever and with the echocardiography showing features of bread and butter fibrinous pericarditis, regurgitant valvular lesions, and features of preexisting rheumatic heart disease (restricted mobility of posterior mitral leaflet), along with elevated acute phase reactants and serological evidence of recent streptococcal infection, the patient was diagnosed to have recurrent rheumatic fever. Patient was started on intravenous penicillin and oral steroids after a set of negative blood cultures. He improved clinically over a week. Echocardiogram repeated a week (Movie IV in the Data Supplement) after initiation of steroids showed complete resolution of the fibrinous pericarditis. The transmitial gradient after 1 week of therapy was 19/10 mm Hg at 82 bpm. Complete blood count repeated showed total count of 10,340/cm³ with 60% polymorphs and 40% lymphocytes, with erythrocyte sedimentation rate of 23 mm/h. The index echocardiogram represents classical description of fibrinous pericarditis in rheumatic fever, which is rarely encountered nowadays, and its robust response to steroids.

Disclosures
None.

References

Key Words: cardiomegaly fibrinous pericarditis rheumatic fever streptococcal infections

From the Department of Cardiology, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala, India. The Data Supplement is available at http://circimaging.ahajournals.org/lookup/suppl/doi:10.1161/CIRCIMAGING.116.005399/-/DC1. Correspondence to Sanjay Ganapathi, MBBS, MD, DM, Department of Cardiology, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala, India 695011. E-mail: drsanjayganesh@gmail.com (Circ Cardiovasc Imaging, 2016;9:e005399. DOI: 10.1161/CIRCIMAGING.116.005399.) © 2016 American Heart Association, Inc.

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Supplemental Material

Movie Legends

Movie clip 1 & 2 – echocardiogram in parasternal long axis and short axis views showing moderate circumferential pericardial effusion with strands throughout the pericardial cavity.

Movie clip 3 – echocardiogram with color doppler in parasternal long axis view showing severe mitral and aortic regurgitation.

Movie clip 4 – echocardiogram in parasternal long axis view showing complete resolution of the fibrinous pericarditis after initiation of steroids.