Asian Pac. J. Health Sci., 2014; 1(4): 500-501 e-ISSN: 2349-0659, p-ISSN: 2350-0964

Isolated tricuspid valve prolapse with rheumatoid arthritis: an unusual association

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ABSTRACT

Although cardiac involvement is uncommon in rheumatoid arthritis, it occurs in a variety of forms. Tricuspid valve involvement is very rare and when it exists it is usually in association with mitral valve or aortic valve involvement. A case of isolated tricuspid valve prolapse in rheumatoid arthritis is reported here.

Key words: Echocardiography, Mitral valve prolapse, Rheumatoid arthritis, Tricuspid valve prolapse.

Introduction

Rheumatoid arthritis (RA) is a systemic disease with a variety of extraarticular manifestations. Cardiac manifestations of RA are pericardial effusion, valvular involvement, cardiomyopathy, atrioventricular conduction abnormalities and coronary artery disease. Among valvular involvement aortic valve and mitral valve abnormalities are common. Tricuspid valve prolapse(TVP) is not commonly seen in RA. TVP has been frequently noted in association with mitral valve prolapse and other cardiac disorders like Ebstein anomaly, Marfan's syndrome. We report a case of isolated TVP in RA.

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Case report:

A 40 year old woman diagnosed as RA and on treatment for four years was admitted to the medical ward for exacerbation of joint symptoms. There were no cardiopulmonary symptoms, no history of diabetes mellitus, hypertension, ischemic heart disease or rheumatic heart disease. Physical examination revealed typical deformities of RA in both hands and feet. Cardiac examination revealed systolic click at left 5th intercostal space near sternal border. Other systemic examination was unremarkable. Laboratory investigation revealed raised erythrocyte sedimentation rate and positive C- reactive protein. Other blood parameters, electrocardiogram, chest x-ray were normal. In apical four chamber view, 2D echo showed prolapse of anterior leaflet of tricuspid valve (Figure 1). There was no tricuspid regurgitation and mitral valve was normal. Patient was treated with hydroxy chloroquine(400mg) and diclofenac sodium(50mg) with other supportive measures. Joint symptoms were relived and patient was discharged after two weeks with above medications.

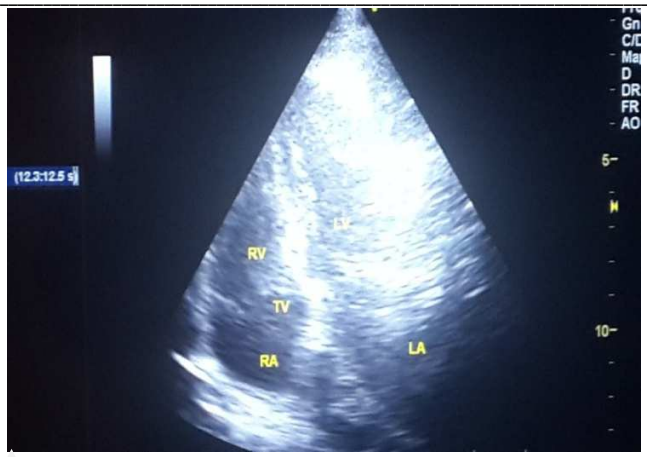

Figure 1: Two-dimensional echocardiogram from the apical four chamber window. Prolapse of the anterior leaflet (arrow) of the tricuspid valve is present.

Discussion

In 1981 Charcot described cardiac involvement in RA in the form of endocarditis and pericarditis. The commonest cardiac manifestation of RA is pericarditis. The frequency of valve involvement in RA is as follows with decreasing order: mitral, aortic, tricuspid and pulmonary [1]. Conditions associated with TVP were classified in to three categories. First category includes left ventricular abnormalities like dilated cardiomyopathy, systemic hypertension and mitral regurgitation. Second category includes those conditions with a pressure load on the right heart chamber like pulmonary hypertension, atrial septal defect, mitral stenosis and pericardial effusion. Third category consists of direct injury to the valvular apparatus [2].

Prolapse of both atrioventricular valves has been noted with Marfan's syndrome, idiopathic hypertrophic sub aortic stenosis , Ebstein's anomaly, atrial septal defect and mitral regurgitation with chordal rupture. Mitral valve prolapse is associated with TVP in 5-52% [2]. Theories which explain the pathologic changes in TVP includes congenital anomaly, underlying stress or haemodynamic turbulence , myocardial ischemia or infarction, degeneration of the right ventricle as part of an aging process or systolic dysfunction [2].

Most cases of TVP are asymptomatic and there are no distinctive physical signs. Our patient was asymptomatic and had systolic click.Echocardiography is a reliable method of diagnosing TVP [3]. Apical four chamber and right ventricular inflow views are used to detect TVP [2].Medical management of TVP includes symptomatic therapy for chest pain and other symptoms. TVP requires long term follow up due to its complications like endocarditis and pulmonary emboli (2).Our patient was asymptomatic, so we advised her regular follow up for echocardiographic monitoring.

In conclusion isolated TVP is a rare disorder associated with RA. Since patients with TVP may develop clinically significant tricuspid regurgitation or bacterial endocarditis, regular echocardiographic follow up is essential.

Source of Support: NIL
Conflict of Interest: None

Acknowledgement
The patient consent was received for this case report to be published

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