

A Complete Atrioventricular Block Revealing Rheumatoid Arthritis: A Case Report

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Abstract

Case Report

We report the case of a 66-year-old patient with cardiovascular risk factors: chronic smoking, diabetes and dyslipidemia. He went to the emergency room for syncope, with a complete atrioventricular block on the electrocardiogram. A transesophageal echocardiography performed as part of the workup shows a hyperechoic nodule located at the level of the interventricular. A transesophageal echocardiogram showed a hyperechoic nodule located at the level of the interventricular septum, which could correspond to a fibrous rheumatoid nodule and explain this atrioventricular block by the invasion of the conductive tissue. The patient was fitted with a definitive dual-chamber pacemaker. Conduction disorders in rheumatoid arthritis should be routinely detected in advanced rheumatoid arthritis. Transthoracic echocardiography is part of its workup. Transesophageal echocardiography may be necessary to detect fibrotic rheumatoid nodules.

Keywords: Rheumatoid Nodule, atrioventricular block, transthoracic echocardiography.

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INTRODUCTION

Rheumatoid arthritis is an inflammatory rheumatic disease causing joint deformities and destruction. It is a systemic disease, leading to extra-articular manifestations that can compromise the vital prognosis: Atherosclerosis, with increased risk of ACS/IDM and stroke, Pericarditis, most often without clinical significance, Myocarditis, rarely associated with active joint disease, Heart failure, common, mostly diastolic (or with preserved systolic function), Valvulopathies: rare, usually without clinical significance, Conduction abnormalities: rare, especially Complete atrioventricular block (AVB) or Right branch block.

CASE REPORT

We report in this article the case of a 66-year-old patient with the following as FRCVX: chronic active smoking, diabetes and dyslipidemia, age and gender. Previous history of OD blindness.

Hospitalized for management of repeated episodes of syncope revealing a complete BAV at FVM 38bpm with junctional escape with several passages in period of RIJA at FVM: 70bpm.

Clinically, the patient presented osteoarticular deformities such as ulnar deviation of the fingers in gale, swan neck deformity, rheumatoid nodule on the extension side of the right elbow with flat valgus feet. On the cardiovascular and pulmonary level, the patient presented a right condensation syndrome.

A transthoracic echocardiography was carried out, showing a nodular formation on the septal verçant of the mitral valve responsible for a moderate mitral insufficiency. The systolic function of the LV was preserved with good segmental and global kinetics. The patient then benefited from a transthoracic echocardiography confirming the septal nodule.

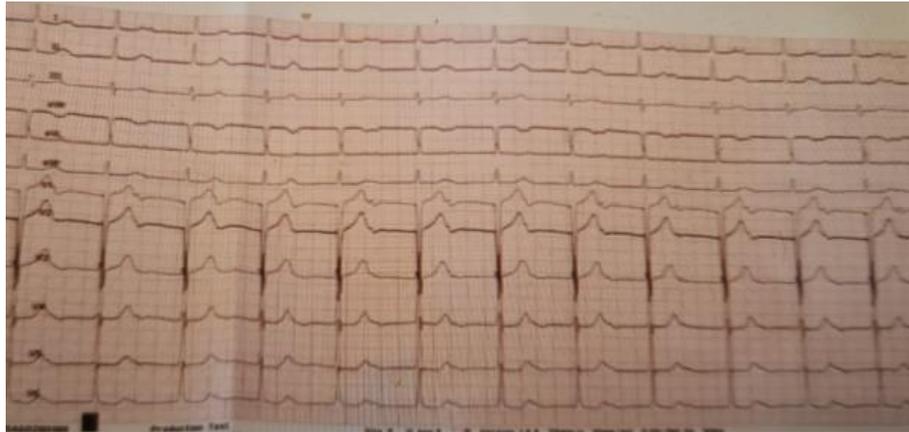


Fig-1: EKG objectifying a BAV with some passages in accelerated idio-functional rhythm



Fig-2: This picture shows the joint deformations in our patient

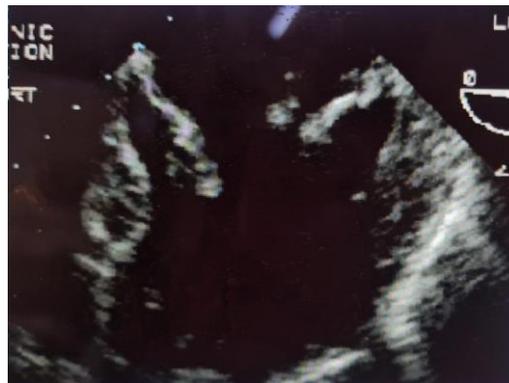


Fig-2: Nodular formation on the septal side of the mitral valve on TEE

- The etiological workup in the context of complete BAV allowed to eliminate any reversible cause, moreover, the immunological workup objectified the presence of rheumatoid factor and anti CCP antibodies confirming rheumatoid polyarthritis.
- The patient was transferred for electrophysiological exploration and placement of a pace make.

DISCUSSION

Rheumatoid arthritis is a disease of the connective tissue disease with synovial predominance, it is on the one hand inflammatory rheumatic disease leading to deformations and destructions of the joints and on the other hand a systemic disease, leading to extra-articular manifestations that can compromise the vital prognosis, such as heart attacks. Among these attacks, the complete atrioventricular block rare evolutionary accident.

Concerning the position of cardiovascular risk scores

In a cohort of 525 American patients aged at least 30 years with RA and no cardiovascular history at baseline and followed for more than 8 years, the risk of a cardiovascular event (fatal or not) was 1.6 to 2 times higher than it would have been with The risk of cardiovascular events (fatal or not) was 1.6 to 2 times higher than it would have been with an assessment based on the Framingham score and even 3 times higher at 75 years of age or older [1]. The 2010 recommendations of the European League Against Rheumatism (EULAR) recommend the use of various national recommendations or, failing that, the European SCORE tables [2].

However, as is proposed for diabetes [3], it is recommended to multiply the standard score by a factor of 1.5 when several risk factors associated with rheumatoid arthritis are present. Complete atrioventricular block (AVB) can be observed especially in old, erosive and nodular polyarthritis.

Several mechanisms can be considered in its pathogenesis, destructive invasion of the conductive tissue by a rheumatoid nodule could be the main cause of conduction disorders, amyloid infiltration of the connective tissue or rheumatoid vasculitis which remains rare [2].

They are the most frequently involved and represent the most frequent extra-articular the most frequent extra-articular manifestation; they are part of the criteria of the American Rheumatism Association. They are most often subcutaneous nodules or more rarely adherent single rounded or polylobed 0.5 to 1 cm in diameter, located mainly on the posterior aspect of the forearm and elbow. Visceral localizations, in particular cardiac, have been described [4].

Rarely present at the beginning of the disease, they most often appear after several years of evolution. These rheumatoid nodules represent the only specific to cardiac involvement during RA.

The presence of these nodules in cardiac structures was first reported in 1944 by Baggenstoss and Rosenberg [5]. These nodules were present in the aortic and mitral valves and the pericardium. The nodules can affect all cardiac tissues with a varying degree of clinical manifestation which depends mostly on their location and the associated non-specific inflammatory lesions [4].

Rheumatoid nodules sometimes visible on macroscopic examination of the heart [7] have been mostly described after histological examination in patients who died of heart failure [8] or after pericardial injury [8], and in those who died of conductive disorders [7]. They consist of a central zone of fibrinoid necrosis surrounded by fibroblasts, macrophages and connective tissue with lymphatic tissue [8].

Infiltration by these nodules of the interventricular septum could be the cause of conductive disorders. Conductive disorders during the course of rheumatoid arthritis should be detected systematically by regular cardiac workup including clinical examination, electrocardiogram, and transthoracic echocardiography; in case of conductive disorders a transesophageal echocardiography may highlight the responsible fibrosed rheumatoid nodule [1].

CONCLUSION

Conductive disorders in Rheumatoid arthritis should be systematically investigated by a regular cardiac work-up that includes clinical examination, electrocardiogram and transthoracic echocardiography; in the presence of conductive disturbances, transesophageal echocardiography can reveal the fibrotic rheumatoid nodule responsible [9].

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