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Case Report

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Mobitz Type 2 AV Block Dissolved With Contrast Injection

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Abstract

There are many cases in the literature concerning the occurence of atrioventricular block in acute myocardial infarction. The prevelance and management of AV block in the setting of chronic myocardial ischemia remains unclear. Our case presented with stable angina pectoris. Treadmill test revealed Mobitz Type 2 AV block which disappeared with contrast injection and re-occured after injection during PCI.

Introduction

Coronary artery disease (CAD) is the underlying mechanism of high degree atrioventricular (AV) block in 40% of patients.[1] However, the prevalence and management of AV block in the setting of chronic myocardial ischemia remains unclear. Here, we report a Mobitz type 2 AV block patient due to chronic ischemic heart disease which was successfully treated by percutaneous coronary intervention (PCI).

Case

A fifty-five years old male admitted to our hospital with stable angina pectoris. There are hypertension, diabetes mellitus and PCI of obtuse marginal branch of left circumflex coronary artery (LCx OM) on his background. Electrocardiogram (ECG) showed sinus ryhthm with incomplete right bundle branch block (RBBB) and rate of 65/min. A transthoracic echocardiography (TTE) revealed hypokinesia of inferolateral wall of left ventricle and ejection fraction was 50% .Treadmill test was normal in means of ischaemic changes but Mobitz Type II block occured during exercise and disappeared in recovery period. Mobitz Type II block was also occurred transiently after treadmill exercise test and the rhythm was Mobitz Type II block when the patient was taken to catheterization lab. Coronary angiography (CAG) revealed 80% restenosis of Cx OM stent. Mobitz type 2 AV block disappeared with contrast injection to left coronary system and re-occurred after contrast injection (Figure 1). So, we thought block was associated with ischemia related to CX OM stent restenosis and restenosis was treated by balloon angioplasty (Figure 2). After balloon angioplasty the rhythm was totally normal. After three days of intervention, the electrophysiological study was normal and after ten weeks AV block was not found on the surface ECG, exercise test or 24 hours holter ECG. After 1years the patient was hospitalized due to syncope and the ECG revealed Mobitz type II block again. We performed CAG and Cx stent restenosis was revealed. After it was treated with drug eluting balloon angioplasty the rhythm was normal sinus rhythm.

Discussion

Although ischaemic ECG changes are well established risk factors for long term cardiovascular end points, occurrence of AV block during treadmill test is an area of uncertainty. In our patient, Mobitz Type II AV Block (occurred during treadmill test and disappeared with contrast injection) dissolved after PCI. This may be related to ischemia of AV node which is supplied by the RCA in 90% of general population, and by the LCx in 10% of population.[2] Dissolving of AV block with contrast injection and occurring again after contrast injection in LCx may indicate that AV node is supplied by LCx in this patient.

Yildiz et al[3] examined four patients presenting with second or third degree AV block not related to acute or previous myocardial infarction and vasovagal syncope. Angiography revealed single vessel coronary artery disease with a critical stenosis in the proximal segment of the RCA, which was the dominant artery. They have performed stent implantation to RCA and AV block was reversed to sinus rhythm.

Arterial supply to the AV nodal territory is usually abundant.[3] Even in the presence of lesion in the RCA or LCx, from which AV nodal artery originates, there was alternate anatomical supply to the AV node, ischemia induced AV block was rarely seen.

In our case during CAG, AV block was disappeared with contrast injection. According to our hypotheses the blood flow in the stenotic vascular bed was restored with the compressive contrast injection. Because of the sufficient blood flow to ischemic myocardium was

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Disclosures:
None.

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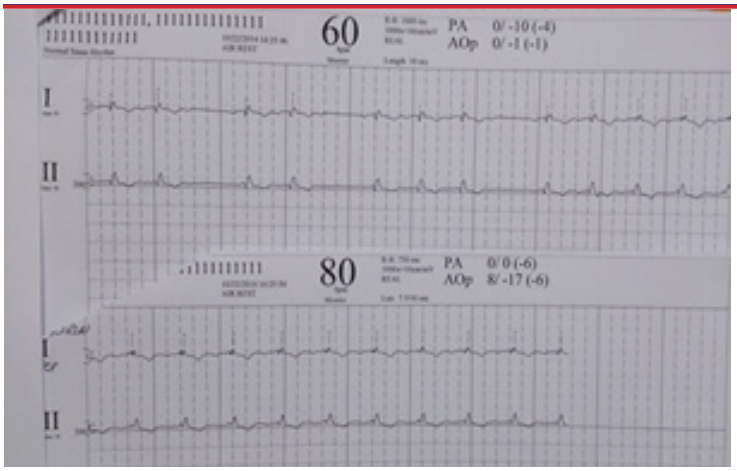

Figure 1: **Mobitz type 2 AV block disapperaed with contrast injection to left coronary system and reoccured after contrast injection**

supplied with contrast injection, AV block was disappeared. After contrast injection stenotic coronary artery was not able to supply enough blood to territory of Cx artery, the rhythm was again Mobitz Type II AV block.

Conclusions

In the light of our case and previous case reports; patients with intermittan AV block should undergo an evaluation of ischemia and permanent pacemaker implantaion may be deferred until the results of coronary angiography.

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