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Case Report

Syphilitic Bilateral Coronary Artery Ostial Stenosis Presenting as Acute Coronary Syndrome

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ABSTRACT

Syphilis is an infectious disease which occurs through a series of frequently overlapping stages. It can impair the cardiovascular and neurological systems. In approximately 30% of non-treated patients, syphilis develops its tertiary form. We report a case of a 41-year male patient admitted due to acute coronary syndrome presented as unstable angina. Coronary angiography showed a 100% ostial lesion of left main coronary artery and 90% occlusion of the right coronary artery ostium. Subsequent Computed Tomography Angiography (CTA) scan showed prominent thickening of the aortic wall. The Venereal Disease Research Laboratory (VDRL) test was titrated to 1/16. The patient was referred for coronary artery bypass graft (CABG).

Key words: Syphilis, Acute Coronary Syndrome, unstable angina, Coronary Angiography, Left Main Coronary Artery, Right Coronary Artery, Coronary ostial stenosis, Computed Tomography Angiography

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INTRODUCTION

Syphilis is an acute infectious disease transmitted mainly by direct contact, usually through sexual intercourse. It can have many clinical manifestations in its various phases.[1] Well-known cardiovascular manifestations of tertiary syphilitic infections usually include aortitis, aortic root dilation, aneurysm formation, aortic regurgitation, and coronary ostial stenosis.[2] Coronary ostial lesions have been detected in as many as 26% of patients with syphilitic aortitis,[3] however, bilateral coronary ostial stenosis is rare.[4]

CASE REPORT

We report a case of a 41-year male patient admitted with a clinical picture of acute coronary syndrome (unstable angina). The patient, a former smoker, denied other pathological personal antecedents.

On physical examination at admission, the patient presented with blood pressure of 130/70 mmHg, heart rate of 88 beats per minute, respiratory rate of 18 breaths per minute, with an oxygen saturation measured through pulse oxymetry of 97 %. The electrocardiogram of the patient showed ST depression in inferolateral leads as shown in [Figure 1 & 2]. Laboratory tests on admission showed a normal level of troponin I (0.01 ng/mL; Reference Value 0.02-0.04 ng/mL) and CK-MB (Creatine Kinase MB fraction) (21 IU/L; Reference Value 24-194 IU/L) suggesting unstable angina. Results of routine biochemistry tests and a fasting lipid profile were within normal ranges. A rapid plasma reagin (RPR) was reactive with a titre of 1:16 and *Treponema pallidum* hemagglutination test was strongly positive suggesting a syphilitic infection.

Two-dimensional echocardiogram showed hypokinesia of distal intraventricular septum (IVS) with near normal systolic function of LV (left ventricle) with normal cardiac chamber dimensions and color flow [Figure 3].

During coronary angiography while engaging the left coronary system there pressure damping and ventriculization was noted. Aortic root injection showed critical ostial stenosis of the left main coronary artery (LMCA) [Figure 4] and the right coronary artery (RCA) showed critical stenosis at the ostium [Figure 5]. Aortic root angiograms showed trivial aortic regurgitation with no evident root dilation or ascending aortic aneurysm.

The coronary angiogram made us to think of a different etiology other than atherosclerotic CAD (coronary artery disease). We did CT angiography of aorta and coronary vessels which showed aortic wall thickening with involvement of bilateral coronary ostia [Figure 6] The patient was referred to cardiac surgeon for CABG (Coronary Artery Bypass Graft). However, the patient had an unfavourable outcome following post operative complications.

DISCUSSION

Syphilitic cardiovascular disease occurs more frequently than is recognized clinically. Heggtveit[3] described that an accurate clinical diagnosis was established in only 17% of a large group of cases of syphilitic aortitis reviewed in a clinico-pathological necropsy study. This manifestation should always be suspected especially in the context of an ostial lesion on coronary angiography in a patient with no major risk factors for atherosclerotic coronary artery disease.[5] In our case, the diagnosis of syphilitic aortitis with involvement of bilateral coronary ostia was made due to high titers of VDRL test (Venereal Disease Research Laboratory), reflecting no treatment or re-infection, positive FTA-ABS (fluorescent treponemal antibody absorption test), and angiographic findings including aortic regurgitation compatible with the disease.

The cardiovascular manifestations of syphilis usually compromise asymptomatic aortitis, aortic regurgitation, coronary ostial stenosis, aortic aneurysm, and gummatous myocarditis.[6] Mostly, the syphilitic ostial stenosis is a disorder of the aorta rather than the coronary artery. The pathology involves endarteritis obliterans of the vasa vasorum which leads to medial necrosis with destruction of elastic tissue. Then, the syphilitic process extends to the ascending aorta, involving the orifices of the coronary arteries and producing ostial stenosis.[7]

Coronary ostial stenosis can be seen in approximately 26% of the patients with syphilitic aortitis,[8] although it is uncommon for ostial lesion to lead to acute myocardial infarction.[5,8,9] The clinical presentation and the electrocardiographic findings in patients with syphilitic aortitis can

Figure 1: Electrocardiogram showing ST segment depression in Lead I, II, III, aVL and aVF

Figure 2: Electrocardiogram showing ST segment depression in Lead V4, V5, V6

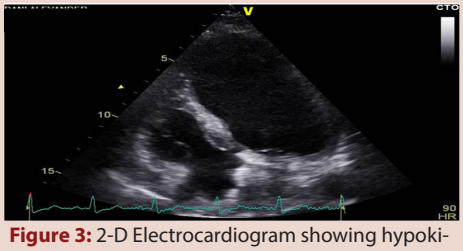

Figure 3: 2-D Electrocardiogram showing hypokinesia of distal intraventricular septum

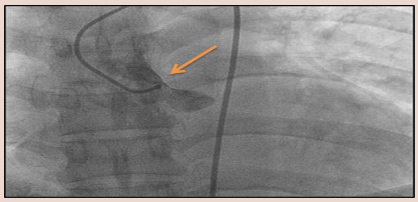

Figure 4: Coronary angiogram showing critical ostial stenosis of the left main coronary artery

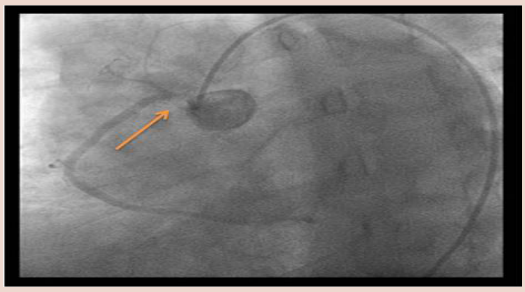

Figure 5: Coronary angiogram showing critical ostial stenosis of the right coronary artery

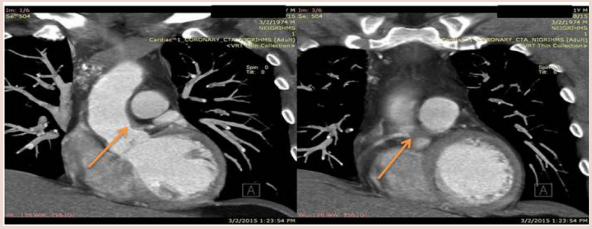

Figure 6: CT angiography showing aortic wall thickening with involvement of bilateral coronary ostia

be similar to individuals with atherosclerotic coronary artery disease.[5] However, while the treatment including revascularization is palliative in the second condition in patients with syphilitic coronary ostial stenosis it is healing.[8] In the present case, it is important to emphasize the etiology for inflammatory diseases including syphilis in the differential diagnoses for patients with bilateral coronary ostial lesion and normal distal bed, when the cure can be obtained through percutaneous coronary intervention and stenting or CABG.[10] This also emphasizes the importance of noninvasive test like coronary computed tomography angiography in diagnosis of such cases.

CONCLUSION

Syphilis may be considered as a rare cause of Acute Coronary Syndrome with involvement of Coronary Ostia where Computed Coronary Angiography(CTA) can help as an important noninvasive tool for its diagnosis.

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None

CONFLICT OF INTEREST

Nil

ABBREVIATIONS USED

CAD: Coronary Artery Disease; CTA: Computed Coronary Angiography; VDRL: Venereal Disease Research Laboratory; CABG: Coronary Artery Bypass Graft; RPR: Rapid Plasma Reagin; LMCA: Left Main Coronary Artery; RCA: Right Coronary Artery.

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