

Syphilitic Aortitis Causing Bilateral Coronary Ostial Stenosis

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ABSTRACT

Coronary ostial stenosis in otherwise normal coronary vessels is a rare complication of syphilitic aortitis. A 47-year-old man with no coronary risk factors developed severe isolated ostial stenosis in the left main coronary artery and right coronary artery. He underwent coronary artery bypass grafting using the bilateral internal thoracic arteries and gastroepiploic artery and recovered uneventfully.

INTRODUCTION

Cardiovascular disease is a well-known complication of tertiary syphilis. The common manifestations of tertiary cardiovascular syphilis are dilation of the aortic root, aortic aneurysm, and aortic regurgitation. Coronary ostial stenosis is also one of the cardiac manifestations of tertiary syphilis [Heggveit 1964]. Coronary artery bypass grafting and reconstruction of the ostium have been carried out for the treatment of syphilitic ostial stenosis.

In this case, a patient presenting with both right and left coronary artery stenosis was treated surgically with aortic non-touch off-pump coronary artery bypass grafting (OPCAB) using all-arterial graft.

CASE REPORT

A 47-year-old Asian man with a 2-month history of typical effort angina developed retrosternal oppression with dyspnea. He was admitted to our hospital with the diagnosis of unstable angina pectoris. The patient had been well until 2 months earlier, when he began to have episodes of anterior and posterior chest pain and dyspnea on light exertion, which were relieved by rest. Over a number of days, the symptoms grew worse and led the patient to consult a doctor. Initial electrocardiogram (EKG) showed precordial ST depression. Echocardiography showed global hypokinetic wall motion without valvar malfunction. Chest radiograph demonstrated a cardiothoracic ratio of 0.44 and a small amount of pleural effusion. Cardiac enzymes were not elevated. After treatment for heart failure,

a coronary angiography was performed. Both coronary ostia were tightly stenotic, with approximately 99% stenosis. The coronary vessels were otherwise normal (Figure 1). The patient was referred to our surgical team as a case of aortitis. The results of routine laboratory tests were normal with the exception of the treponema pallidum latex agglutination test (TPLA). Laboratory results for syphilis from tests such as rapid plasma reagin (RPR) and fluorescent treponemal antibody-absorption test (FTA-ABS) also showed extremely high levels. Syphilitic aortitis was considered a possible diagnosis.

The patient underwent an emergent OPCAB. Following medial sternotomy, the bilateral internal mammary arteries (IMA) and right gastroepiploic artery (GEA) were harvested in a skeletonized fashion using electrocautery and an ultrasound scalpel. The coronary artery bypasses placed the left anterior descending (LAD) with the right IMA, the obtuse marginal branch (OM) with the left IMA, and the posterior descending artery (PDA) with the GEA. The graft flows determined by transit time flow measurement were 30 mL/min in the right IMA, 54 mL/min in the left IMA, and 57 mL/min in the right GEA.

The patient tolerated surgery very well and had an uneventful postoperative recovery. A postoperative computed tomography examination was performed. Reconstructions of the 3-dimensional volume-rendered images revealed unchanged stenosis at both coronary ostia and the patent bypass grafts (Figure 2). Antibiotic therapy was given after neurosyphilis had been excluded by cerebro-spinal fluid examination. The patient was discharged 21 days after the operation and remains symptom-free at 3 months postoperatively.

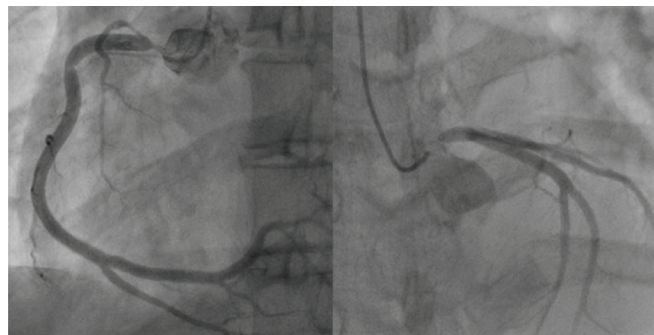


Figure 1. Coronary angiography showed isolated severe stenoses of both coronary artery ostia.

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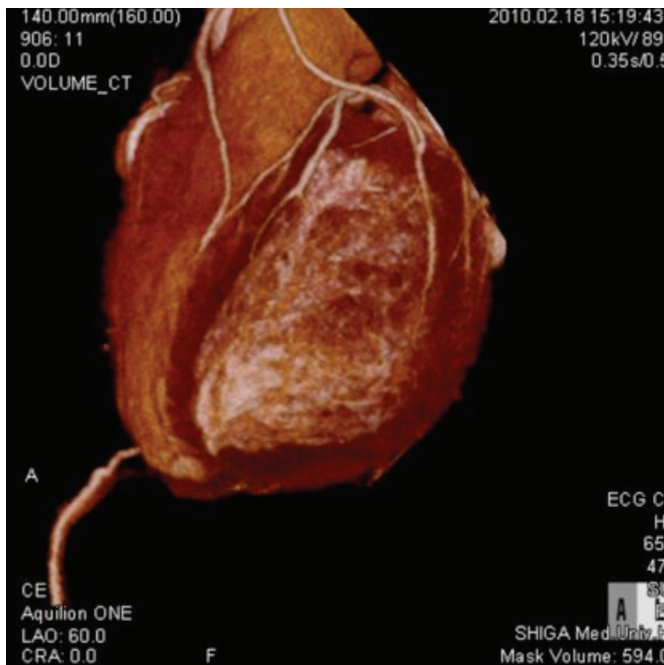


Figure 2. Postoperative coronary computed tomography demonstrated good patency of the all-arterial grafts. The right internal mammary artery was anastomosed to the left anterior descending, the left internal mammary artery to the obtuse marginal branch, and the right gastroepiploic artery to the posterior descending artery.

DISCUSSION

Clinical manifestations of syphilitic aortitis usually appear 20 to 40 years after the primary infection. In a study of 100 patients with aortic syphilis by Heggteit [1964], coronary ostial stenosis was detected in 26% of patients with syphilitic aortitis.

Ostial reconstructive surgery was first reconsidered after 1983 when Hitchcock et al obtained favorable results by

approaching the coronary ostium and trunk, restoring physiological perfusion of the myocardium [Hitchcock 1983]. The authors used the posterior approach to the aorta with an incision through its floor and ostial amplification with a segment of the saphenous vein.

Regarding postoperative problems, continuous infection of the ascending aorta induces restenosis at the site of the proximal anastomosis. Herskowitz and colleagues reported a case of syphilitic aortitis in which the proximal site of the anastomosis of a saphenous vein graft was found to be occluded due to the syphilitic process 6 months after bypass surgery [Herskowitz 1980]. Reconstructive ostial surgery is not recommended for the same reason.

In situ arterial grafts, such as IMAs, can resolve such problems, as indicated by Tanaka and colleagues [Tanaka 2007]. We used all-arterial grafts, and the patient recovered well. To the best of our knowledge, this is the first report of OPCAB for bilateral syphilitic ostial stenosis.

In conclusion, we report a case that highlights the importance of evaluating all patients with isolated ostial stenosis for inflammatory diseases including syphilis. We believe OPCAB with in situ all-arterial grafts ensures safe and reliable treatment. Long-term follow-up is, however, essential because of potential future aortic regurgitation and dilatation of the ascending aorta.

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