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Case Report

Intractable angina pectoris after coronary artery bypass surgery in Takayasu arteritis involving the aorta ventralis and main coronary artery in a young girl

Hongming Zhang[1*], Danan Liu[2*], Xiaoyan Li[1], Hong Tan[1], Qun Jin[1], Xunwei Liu[1]

[1]Department of Cardiology, The General Hospital of Jinan Military Region, Jinan, 250031, China; [2]Department of Cardiovascular Medicine, Guiyang Medical University, Guiyang, 550002, China. [*]Equal contributors.

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Abstract: We report a case of sudden death in Takayasu arteritis after coronary artery bypass. A 22-year-old girl visited our hospital in June 2009 because of paroxysmal chest tightness and shortness of breath for 2 years. She was diagnosed as Takayasu arteritis, the limited stenosis of upper aorta ventralis, low perfusion pressure changes of double renal artery and double lower limbs artery, left ventricular mural thrombus and patent foramen ovale. The coronary artery bypass grafting was conducted. However, the symptoms were recurrent 2 months later.

Keywords: Takayasu arteritis, coronary artery bypass

Introduction

Takayasu arteritis (TA) is a rare chronic nonspecific inflammatory disease, its cause was unknown and predominantly affected the aorta and its main branches, including coronary arteries and pulmonary arteries [1-3]. At present, there is no special treatment on Takayasu arteritis [4-9]. There have been few reports on cases of Takayasu arteritis treated with coronary artery bypass grafting. Here we describe such a patient.

Case report

A 22-year-old girl visited our hospital in June 2009 because of paroxysmal chest tightness and shortness of breath for 2 years, which became more serious and accompanied with abdominal distention, nausea and vomiting 3 days ago. Paroxysmal chest tightness occurred in the patient 2 years ago without apparent inducement which aggravated after activities and relieved after rest. It was recurrent in the last 2 years and without special treatment. She admitted to our hospital on June 15, 2009. Color Doppler echocardiogram showed that the intima-media of abdominal aortic origin thickened diffusely, Color Doppler Flow Imaging (CDFI) showed that the blood velocity increased at this position. The fossa ovalis of atrial septum showed a staggered change and left ventricular and atrium enlarged. She was diagnosed as Takayasu arteritis. Coronary angiography revealed that the ostial stenosis of the left main coronary artery was totally occlusive. Right coronary anterior descending branch formed collateral circulation (**Figure 1**). Laboratory examination showed that CRP and ESR increased significantly. After providing the treatments of anticoagulation, crown expansion, nutrition myocardium and reduce the load on the heart, the symptoms of chest tightness was still repeated attack. The coronary artery bypass grafting was conducted in August 24, 2009. Left ventricular enlargement could be seen in the heart exploration operation and contraction amplitude decreased, large vessels and pericardium adhered. The proximal saphenous vein and obtuse marginal branch end-to-side anastomosis, then with the anterior descending branch (2 mm) sequential anastomosis. The other proximal great saphenous vein and right coronary trunk (4 mm) were operated with end-to-side anastomosis; the two saphenous veins were stapled with "Y" shaped anastomosis and in the ascending aortic root. The symptoms improved and the patient was discharged after coronary artery bypass surgery.

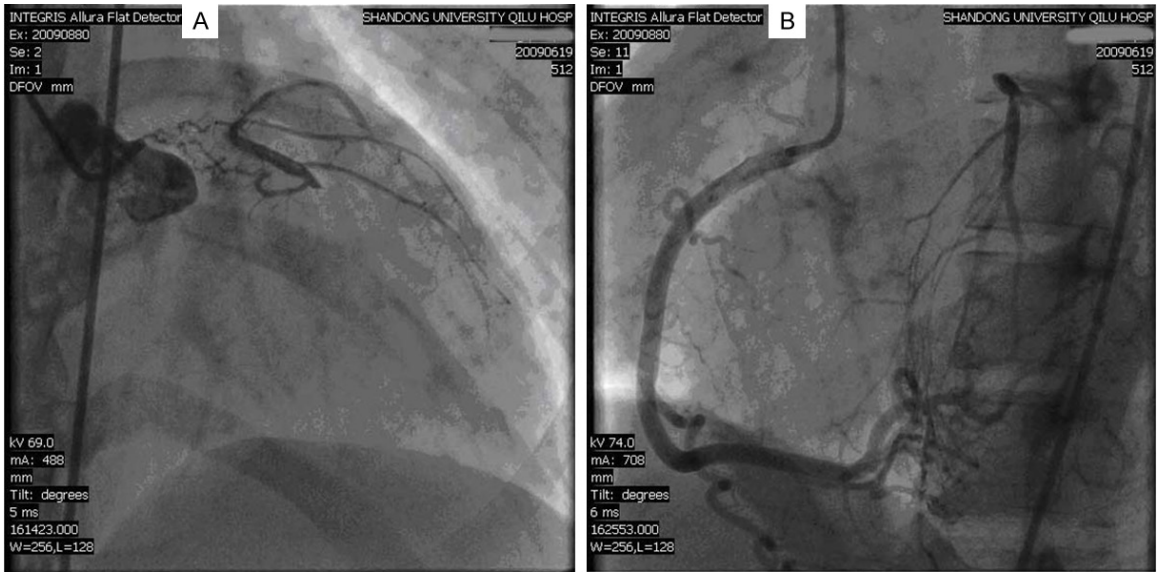

Figure 1. Coronary angiography: The left main coronary artery was totally occlusive (A). Right coronary anterior descending branch formed collateral circulation (B).

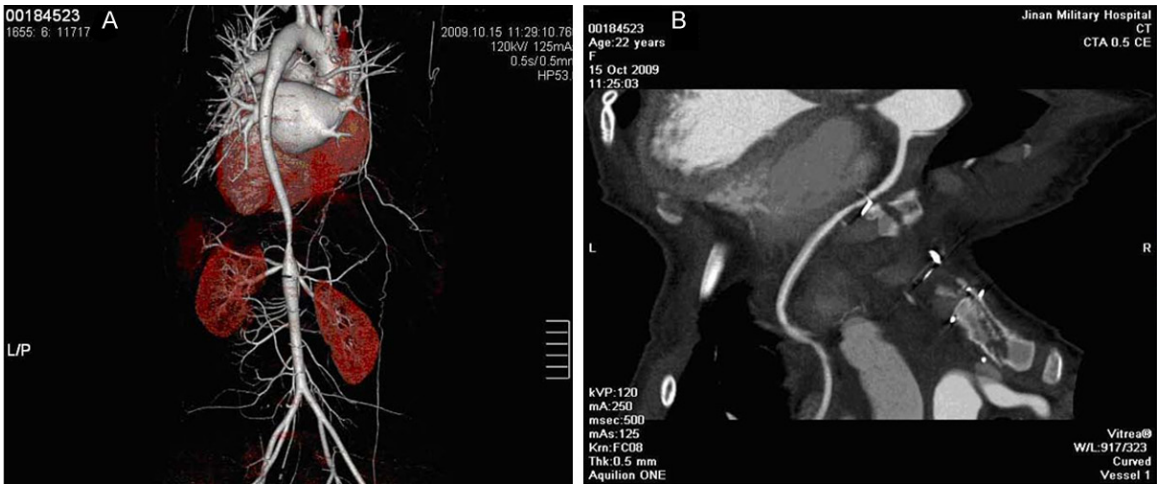

Figure 2. 320CT thoracoabdominal aorta: severe stenosis appeared in proximal abdominal aorta (A). A bridge vascular were seen and side to side stapled with the branches of right coronary artery, the anterior descending and left circumflex respectively and with stenosis (B).

She did not take hormone drugs according to the supervision of doctor. The symptoms repeated once again in the patient on October 27, 2009. The results of 320CT thoracoabdominal aorta and branch CTA showed in **Figure 2**. She was treated for anticoagulant and anti-infection treatment. However, the treatment effect was poor. The patient was attacked with angina pectoris frequently.

Discussion

This case was Takayasu arteritis involving the aorta ventralis and main coronary artery. According to this judgment of disease activity proposed by Kerr et al [1], this patient was in the active disease condition. However, postoperative restenosis was more possible when the operation was done in the active disease condition. The operation should be done after the inflammation was controlled if conditions permit. If operation must be done in active period, hormone therapy must be given after operation. There were serious stenoses in left and right main coronary artery in this patient. Therefore, coronary artery bypass grafting was conducted. The level of CRP was still high after

operation and vascular inflammation was not controlled effectively.

This patient had recurrent chest tightness, shortness of breath and angina in short term after the coronary artery bypass grafting. The angina pectoris was serious and could not be controlled. 320CT confirmed the coronary stenosis. Although the patients' blood supply was improved by bypass grafting, the inflammation was uncontrolled. Takayasu arteritis was active and it was vulnerable to form vascular restenosis.

So we learned a lesson from the case that it is important to select the appropriate operation time for the treatment of Takayasu arteritis with early detection and early treatment, hormone drugs should be taken under the supervision of doctor.

Disclosure of conflict of interest

None.

Address correspondence to: Xiaoyan Li, Department of Cardiology, The General Hospital of Jinan Military Region, No. 25 Shifan Road, Tianqiao District, Jinan, Shandong 250031, China. Tel: 86-531-51666114; E-mail: lixiaoyan1@126.com

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