Letter to the Editor

Exceptional survival: Acute coronary syndrome in a 56-year-old patient with Takayasu’s arteritis

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Received 25 June 2007; accepted 7 July 2007
Available online 28 November 2007

Keywords: Takayasu’s arteritis (TA); Multidetector row computed tomography (MDCT); Coronary artery bypass grafting (CABG)

1. Case report

A 56-year-old woman was admitted to emergency department with chest pain, dyspnoea and progressive loss of consciousness. After admission, the patient began to show up apnoea and was given ventilatory support to maintain breathing. Physical examination showed that brachial and radial arteries were not palpable in both sides. Blood pressure was 80/40 and 85/50 mmHg in the right and left upper arms, whereas the systolic/diastolic blood pressure was 120/80 mmHg in the lower extremities. After ventilatory support and other relative treatment, the patient regained consciousness and got symptomatic relief the next day. This patient had been diagnosed as Takayasu’s arteritis (TA) by ultrasonic arteriogram for 20 years and without any treatment. There was no history in her family and her main symptoms included intermittent fainting, nausea and vomiting. She stayed in ICU for 2 days and was transferred to general ward afterwards.

After getting stable, the patient was examined by aortography and coronary angiogram. Aortography results showed completely occluded left common carotid and subclavian artery (Fig. 1A); there was 90% stenosis in the orifice of the right innominate artery (Fig. 1B, yellow arrow) and the right subclavian artery was also completely occluded. The abdominal aorta also had 35% stenosis. Coronary angiogram results showed totally occluded left main branch (Fig. 1C), while the right coronary dilated compensatory and collaterals became abundant (Fig. 1D). Because of the unfavorable prognosis, the patient was further examined by multidetector row computed tomography (MDCT) to evaluate the distal end of arch vessels. Maximum intensity projection images demonstrated 100% occluded left common carotid artery and left subclavian artery. Thrombus formed in the orifice of right carotid artery (Fig. 2A, yellow arrow) and the left main branch of coronary artery was 99% occluded (Fig. 2B, yellow arrow).

Other positive examination results of this patient included 54 mm/h erythrocyte sedimentation rate and 24.2 mg/L Creactive protein level, five times above normal. Echocardiography showed median mitral valve regurgitation of 7.4 mL and a 4×3 mm calcification in the posterior leaflet. ECG results showed ST-T changes implying myocardial ischemia.

According to the results of examinations, the patient was diagnosed as Takayasu’s arteritis, acute coronary syndrome, Aase’s syndrome and mitral valve insufficiency. Aorto-right carotid artery bypass, one-stage CABG and mitral valve replacement was suggested by the surgeon but was refused by the patient because of the possibly accompanied risk. After 1 week’s conservative treatment, after getting symptomatic relief, the patient was discharged from hospital.

5 months follow-up showed that the patient recovered well and experienced no similar episode.
Takayasu’s arteritis (TA) is a chronic large vessel vasculitis that occurred more frequently in women than in men [1]. The mean age at symptom onset is 24.0 ± 8.8 years and mean age at diagnosis is 28.3 ± 9.9 years [2]. Based on the location of vessel involvement, a five-type angiographic classification system was proposed by the International Cooperative Study on Takayasu’s arteritis in 1997 (Table 1) [3]. According to the system, this patient should be classified as Type V. Moreover, mitral valve and coronary arteries were also involved by TA in this 56-year-old patient. An elevation of serological acute phase parameters such as ESR and CRP is generally considered as an important criterion for the diagnosis of TA [3]. In the case reported here, increase of ESR and CRP was seen implying the active status of the TA disease. The reason of survival, we believe, is due to abundant collaterals both in the right coronary artery and in the cephalo-cervical artery. The

Fig. 1. Aortography image of the patient: all three branches of the aorta became occluded and only the right innominate artery is visible (A, yellow arrow); selective right carotid artery angiography showed 90% restricted occlusion (B, yellow arrow); coronary angiography showed 100% occlusion in the left main branch (C, yellow arrow) and the right coronary artery became dilated compensatorily (D).

Fig. 2. MDCT image demonstrated completely occluded left common carotid artery and left subclavian artery; Thrombus formed in the orifice of right carotid artery causing partial occlusion (A, yellow arrow); Coronary artery image of MDCT showed left main branch was partly occluded (B, yellow arrow).
patient got accustomed to the long period ischemia of heart and brain. Occlusion of all three branches of the aortic arch in TA is rarely reported [4] and usually provokes symptoms of cerebral hypoperfusion that requires surgical treatment [5]. Since the patient didn’t have family history of TA and it was her first time to experience the lethal Aase’s syndrome, the prognosis still indicated pessimistic.

The case in hand also illustrates the value of non-invasive imaging methods in diagnosing large vessel vasculitides involving big vessels. Both invasive angiography and non-invasive MDCT were applied in this patient and the results showed no obvious discrepancy. Rather than angiography having limitations in measuring the situation of distal end of occluded vessel, MDCT has especially benefits in evaluating the distal branch of the aorta such as the vertebral artery, the internal and external carotid artery etc. [4]. In this patient, MDCT showed better image of the internal and external carotid artery than angiography did, which indicates MDCT might replace angiography as the first-choice measure in diagnosing TA. Further experience was still needed to verify this assertion.

In the end, the case is a complex TA patient and the survival is unbelievable. The case also improves our knowledge of the hazardous extent of TA to mankind.

References


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<tr>
<th>Type</th>
<th>Site of involvement</th>
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<tbody>
<tr>
<td>I</td>
<td>Branches of aortic arch</td>
</tr>
<tr>
<td>IIa</td>
<td>Ascending aorta, aortic arch and its branches</td>
</tr>
<tr>
<td>IIb</td>
<td>Ascending aorta, aortic arch and its branches and thoracic descending aorta</td>
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<tr>
<td>III</td>
<td>Thoracic descending aorta, abdominal aorta and/or renal arteries</td>
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<tr>
<td>IV</td>
<td>Abdominal aorta and/or renal arteries</td>
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<td>V</td>
<td>Combination of Types IIb and IV</td>
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