

Aortoarteritis with tuberculosis

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ABSTRACT

Aortoarteritis is an inflammatory condition of the aorta, which has been rarely reported due to tuberculous infection. We report two cases of children who had aortoarteritis along with tuberculosis (TB), of which one had collapse consolidation and the other had latent TB. Both patients were treated with anti-TB therapy and steroids.

Keywords: Aortoarteritis, children, tuberculosis

Introduction

Aortoarteritis is a chronic inflammatory disorder of large elastic arteries usually affecting the aorta and its larger branches along with pulmonary arteries, with an incidence of 0.01 cases per 100,000 children per year.^[1] It is more common in females, with a ratio of 4:1 in India.^[2] It can be due to infectious and noninfectious causes, but aortoarteritis due to tuberculosis (TB) is a rare entity as seen in 1% of cases of aortitis.^[3] We report two cases of children who had aortoarteritis along with TB, of which one had collapse consolidation and the other had latent TB.

Case Reports

Case 1

A 4½-year-old female child presented with fever for 1½ months and cough for 5 months. There was no contact with a patient suffering from TB. A general practitioner had treated her with anti-TB therapy (ATT) for 2–3 months in view of positive Mantoux test. On examination, weight was 16 kg, and height was 98 cm. Both upper limb pulses were not felt and lower limb pulses were low volume. Blood pressure in the upper limbs could not be recorded and in the left lower limb was 122/80 mmHg. Systemic examination was normal. Chest

X-ray showed bilateral collapse consolidation with prominent aortic knuckle. Hemoglobin was 10.1 g/dl, white blood cell (WBC) count was 15,100/cumm (70% polymorphs, 29% lymphocytes), erythrocyte sedimentation rate (ESR) of 17 mm at the end of 1 h. Mantoux test was negative and sputum smear did not show any acid-fast *Bacilli*. HIV ELISA was negative. TB Gold test was also negative. Echocardiography showed dilated ascending and descending aorta including abdominal aorta with hyperechoic intima, suggestive of aortoarteritis. Computed tomography angiography of the aorta showed aneurysmal dilatation of ascending aorta, arch and descending thoracic and suprarenal abdominal aorta with bilateral blocked subclavian artery. There was a small caliber infrarenal abdominal aorta. A bronchoalveolar lavage could not be done due to poor cardiac condition. She was started on four drugs of ATT and subsequently detected to have hypertension, for which she was started on methyldopa and nifedipine. Oral prednisolone was started at 1 mg/kg/day. An opinion of interventional radiologist was taken, and it was found to be not amenable to dilatation. She is on regular follow-up.

Case 2

A 12-year-old female child presented with fever for 5 days in June 2011, for which she went to a general practitioner who noticed that pulses were absent and was referred for further management. Her color Doppler showed aortoarteritis involving right subclavian and right carotid arteries as well as right upper

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limb arteries. Her abdominal aorta, renal vessels, and celiac vessels were normal. Magnetic resonance imaging angiography showed generalized thinning of right common carotid, right internal carotid, external carotid arteries, and bilateral subclavian arteries, suggestive of arteritis. On examination, weight was 34.4 kg, height was 145 cm, her right upper limb pulses were absent, right carotid and left radial, both dorsalis pedis and posterior tibial pulses were absent. Other systems were normal. Her hemoglobin was 11.8 g/dl, WBC count was 4700 cells/cumm (48% polymorphs, 45% lymphocytes), and ESR was 15 mm at the end of 1 h with platelet count of 353,000 cells/cumm. Her p-ANCA, c-ANCA, ANA, dsDNA, and HB_sAg were negative. Echocardiography was normal. Her tuberculin skin test (TST) by Mantoux test was 15 mm by 5 TU units. She was started on ATT along with prednisolone (0.5 mg/kg/day) along with aspirin. She was subsequently lost to follow-up.

Discussion

Aortoarteritis is a disease characterized by pan-arteritis along with extensive intimal proliferation, inflammation of media and adventitia, followed by marked fibrous scarring which occurs due to noninfectious or rheumatic cause such as Takayasu's arteritis or infectious causes such as syphilis, salmonella, and TB.^[4] Aortoarteritis due to TB involves the aortic wall by direct extension from contagious lesions such as infected lymph nodes, empyema, and pericarditis or by hematogenous/lymphatic spread from primary lesions and is indicative of disseminated TB and presents with erosion of the arterial wall with the formation of false and true mycotic aneurysms.^[5-7] It usually develops at the distal aortic arch and the descending aorta that is close to specific groups of mediastinal lymph nodes but might also develop in the ascending aorta.^[8] Our first patient had a positive TST when she was started on ATT and subsequently was found to have collapse consolidation, whereas the second patient had only TST positive with no other symptoms of active TB, suggestive of either hematogenous or lymphatic spread of TB.

The symptoms of aortoarteritis are due to obliterate and inflammatory effects of the lesion. Dissection, rupture, fistula, perforation, and bleeding of the aneurysms are important

complications of tuberculous aortitis.^[9] Diagnosis of tuberculous aortoarteritis is difficult as it is rare and mimics Takayasu's arteritis and thus is a diagnosis of exclusion and ATT along with high-dose steroids should be instated early as the recommended treatment as done on our patient.^[10]

We conclude that aortoarteritis may occur in patients with TB.

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Conflicts of interest

There are no conflicts of interest.

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