Case Report

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Case of Takaysu Arteritis in The Indian Population: Probable Association with Tuberculosis

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Abstract

Takaysu's arteritis, or "pulseless" disease is a rare, idiopathic, chronic granulomatous vasculitis that affects aorta and its major branches. Indian origin aortoarteritis is a rare variant of this disease presenting as severe uncontrolled hypertension, end-organ dysfunction and stenosis of major blood vessels affecting regional circulation. This report describes the case of a 33 year old male patient being evaluated for sudden onset uncontrolled hypertension associated with headache and vomiting. Of note in this patients presentation is that this patient also had history of tuberculosis , for which he had been treated and had completed treatment one year ago.

Keywords: Takayasu; Pulseless; Aorotarteritis; Tuberculosis; Subclavian.

Introduction

Takayasu's arteritis (TA), also known as aortoarteritis and pulseless disease, is a rare condition. It is a form of granulomatous arteritis, which affects large- and medium sized arteries, primarily the aorta and its large branches as well as proximal portions of pulmonary, coronary, and renal arteries. Initially, there are mononuclear cell infiltrations in the adventitia and granulomas with Langerhans cells in the media, followed by disruption of the elastin layer and subsequent massive medial and intimal fibrosis. These lesions result in segmental stenosis, occlusion, dilatation, and aneurysmal formation in the affected vessels. Diminished or absent pulses are present in 84-96% of patients, associated with limb claudication and blood pressure discrepancies between the two arms . The symptoms are secondary to the involved artery, and it may evolve into a life-threatening condition. Involvement of the carotid artery results in ophthalmic artery hypoperfusion and causes ocular ischemic syndrome .

Case History

33 year old male patient admitted with complaints of uncontrolled hypertension , severe headache and vomiting two episodes since one day.

No significant past history. Patient had been referred for further evaluation from another hospital in view of ECG showing non specific st changes in inferior and lateral leads.

Cardiac enzymes were negative.

Vitals on arrival :

Pulse: 108 / min

Bp: 150 / 90 mmhg (left hand)

Spo2: 98 % on room air

Temp: 98 F

Systemic examination revealed diminished radial and brachial pulses in the right hand , with difference in blood pressure (110 / 70 mm hg) .

From the history it was evident that the patient had tuberculosis in the past, for which he had taken multidrug therapy and was declared cured one year ago.

Ct aorotogram for the patient showed aortoarteritis with severe narrowing of arteries involving the left renal artery, celiac trunk , and right subclavian artery, suggestive of Takayasu arteritis.

Patient was immediately shifted to the cath lab after

informed consent for interventional and diagnostic procedure.

Patient underwent CAG and PAG which revealed non critical CAD with with right subclavian artery 100%, left renal 90% .

The patient subsequently underwent PTA to left renal artery with good end results.

The subclavian artery had extensive collaterals with good post stenotic flow hence no intervention was undertaken for that.

The post op procedure was uneventful , the patient blood pressure was controlled , he had no systemic symptoms, was discharged in a stable condition.

Discussion

TA a rare disease but more frequent in South-east Asia, India, and Mexico; is predominantly seen in females, with female: male ratio of 9:1. The mean age at presentation is 30 years, ranging from 4 - 63 years. Two stages of the disease process have been described. A systemic or "pre-pulseless" phase characterized by nonspecific symptoms followed by a sclerotic or pulseless phase during which vascular insufficiency develops with diminished pulses, especially in the upper limbs and bruit over diseased arteries. The mechanism of vessel involvement are secondary to thickening of large vessels secondary to fibrosis of all three vessel layers. This leads to narrowing of the lumen, which is often multi-segmental with normal areas in-between. The aetiology of TA remains obscure. Tuberculosis, viral infection, and immunological dysfunction have been implicated, but the exact stimulus for activation remains uncertain. The clinical features may be non-specific in the form of fever, malaise, night sweats, etc., and may be specific depending on the vessel involved. Decreased / absent pulses and blood pressure discrepancies appear. The patient may present with singular or combination of cerebrovascular disease, ocular disorders, pulseless disease, atypical coarctation, renovascular hypertension, aneurysm formation, and pulmonary involvement. Angiography remains the gold standard for diagnosis of disease, but the ability to measure disease activity is limited. The most common clinical manifestation of TA is the affection of aorta and its main branches, but the involvement of coronary arteries is also well known though rare, and can be fatal. The incidence of coronary artery involvement has been reported to be 9% to 12%, and is observed mainly in autopsy cases because coronary artery disease is usually not evident until the occurrence of angina pectoris, myocardial infarction, and congestive heart failure. However, there are only a few cases published where a TA initially presented with coronary symptoms as seen in our patient. The first case of coronary involvement was reported by Froving and Loken. Angina pectoris in TA is usually caused by involvement of proximal segments of coronary arteries. Coronary artery involvement consists mostly of stenosis or occlusion of coronary ostia (73%) followed by non-ostial proximal lesions (18.5%). Angina pectoris may be related to extrinsic compression of the coronary tree or a steal phenomenon. Narrowing of the coronary arteries is mainly due to extension of the inflammatory processes of proliferation of the intima and contraction of the fibrotic media and adventitia from the ascending aorta. Diffuse lesions of the coronary artery and coronary artery aneurysm seem to be very rare in TA.

This male patient presented to us with classical symptoms of coronary artery disease. However, in view of young age and absence of well known risk factors, i.e., hypertension, diabetes, and smoking, further investigations were done and he was found to have TA with predominant involvement of axillary arteries, abdominal aorta, and bilateral iliac arteries. Coronary artery disease as an initial presentation of TA is rare (< 12% of cases). Also, axillary artery stenosis and iliac artery involvement are rare sites of disease in TA. This case highlights the enigmatic nature of TA, and reiterates that a high index of suspicion is required in clinical practice especially in patients with a history of tuberculosis, to make an early diagnosis of the disease.

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