

## Ortner's Syndrome Associated with Takayasu's Aortoarteritis Identified on Fluorodeoxyglucose Positron-Emission Tomography/Computed Tomography

### Abstract

Cardiovascular syndrome or Ortner's syndrome is hoarseness of voice due to left recurrent laryngeal nerve palsy secondary to nerve compression caused by enlarged cardiovascular structures in the mediastinum. We present here an interesting positron-emission tomography/computed tomography image of a patient suspected to have Takayasu's aortoarteritis and presenting with hoarseness of voice.

**Keywords:** Aneurysm, aortoarteritis, cord, fluorodeoxyglucose, palsy, positron-emission tomography/computed tomography, saccular, Takayasu's

A 41-year-old female presented with chest pain/hoarseness of voice for 6 months. Laboratory investigations revealed only raised erythrocyte sedimentation rate-83 mm in the 1<sup>st</sup> h and raised C-reactive protein 144.4 mg/l (normal: <10 mg/L). Videolaryngoscopy showed left vocal cord palsy. Volume-rendered three-dimensional computed tomography (CT) aortogram showed saccular aneurysms involving the aortic arch and infrarenal abdominal aorta [Figure 1a-yellow arrows]. Mild focal narrowing of the infrarenal aorta was noted just above the bifurcation. The rest of the aortogram was normal. Based on the clinical (no evidence of any pulseless disease) and imaging findings, the patient was diagnosed to have Takayasu's aortoarteritis (TAA) and was referred for positron-emission tomography/CT (PET/CT) for assessing baseline disease activity. Whole-body fluorodeoxyglucose (FDG) PET/CT [Figure 1b, black arrows] showed intense focal FDG uptake (Grade 3, SUVmax = 9.31, target-to-liver ratio = 2.66) in the wall of the partially thrombosed saccular aneurysm involving the aortic arch diameter of aneurysm: 4.6 cm and aneurysmal wall thickness: 6.4 mm [Figure 1c and d-long white arrows] and low-grade FDG uptake (Grade 2, SUVmax = 4.24, target-to-liver ratio = 1.23)

in the wall of the small saccular aneurysm in infrarenal abdominal aorta diameter of aneurysm: 1.6 cm and aneurysmal wall thickness: 7 mm [Figure 1e and f, short white arrows], with the total vascular score on PET/CT being 6 – suggestive of active vasculitis. Another abnormal finding in PET/CT was asymmetric reduced FDG uptake noted in the adducted left vocal cord consistent with left vocal cord palsy [Figure 1g and h, red arrows]. The patient was started on oral steroids and successfully underwent an endovascular stent grafting of the thoracic ductal aneurysm for impending rupture.

Although aneurysm formation in TAA is not rare (seen in up to 2.8%–31.9% of the patients), symptomatic aneurysms as a presenting feature of this disease (as seen in this case) are exceedingly rare.<sup>[1,2]</sup> This aneurysm formation is probably the result of marked degeneration of the tunica media of the artery and is claimed to be seen more commonly seen in the aorta with little calcification.<sup>[3]</sup> Risk of rupture of aneurysm related to TAA is very low and surgical repair is advised only if they are >5 cm in diameter.<sup>[4,5]</sup> FDG PET/CT is increasingly gaining importance in diagnostic and prognostic assessment of large cell vasculitis.<sup>[6]</sup> In addition to CT angiography, PET/CT can assess/quantify the whole-body arterial inflammation burden and thereby

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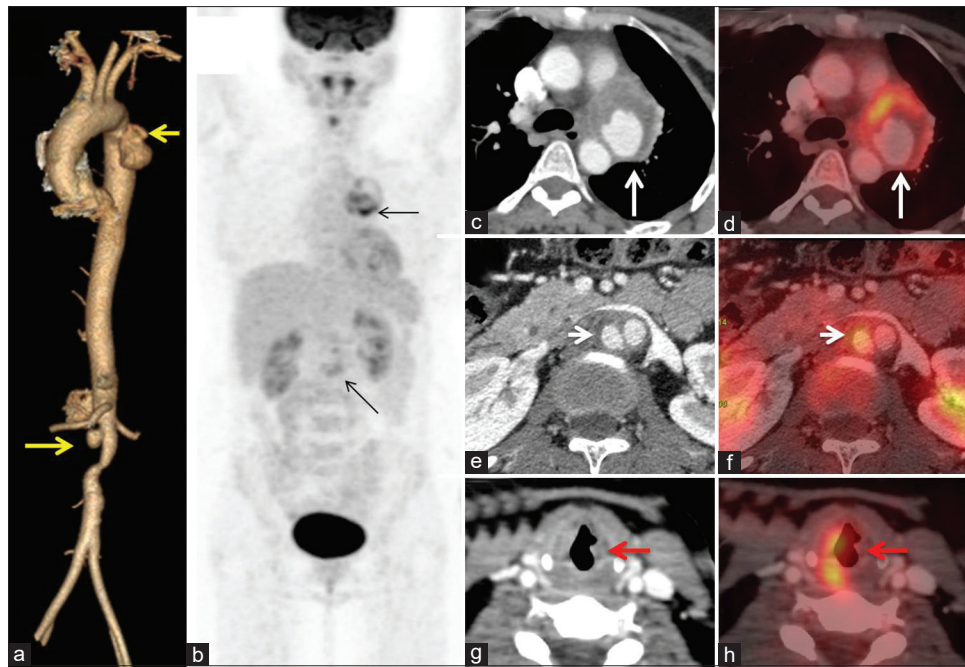


Figure 1: (a) Volume-rendered three-dimensional computed tomography aortogram showing saccular aneurysm in the arch and infrarenal aorta (yellow arrows). (b) Whole-body fluorodeoxyglucose positron-emission tomography Maximum intensity projection (MIP) image showing fluorodeoxyglucose uptake in these aneurysms. (c-f) Transaxial computed tomography and positron-emission tomography/computed tomography images showing fluorodeoxyglucose avid aortic wall thickening and saccular aneurysm in aortic arch and infrarenal aorta (white arrows). (g and h) Transaxial computed tomography and positron-emission tomography/computed tomography images showing adducted left vocal cord with loss of fluorodeoxyglucose uptake (suggestive of palsy) and physiological fluorodeoxyglucose uptake in the normal right vocal cord

can be useful for monitoring response to steroids in aneurysms which are managed conservatively.

#### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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#### Conflicts of interest

There are no conflicts of interest.

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