



## Scanographic Features of Takayasu's Arteritis: A Study of Three Cases

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### Abstract:

Takayasu's arteritis is a rare vasculitis that primarily affects large arteries. It often presents with systemic symptoms like fever and fatigue. Computed tomography (CT) is a crucial examination for diagnosis and follow-up. The first case concerns a 45-year-old woman suffering from intermittent claudication of the arm. Imaging examinations (Doppler ultrasound and CT) revealed a stenosis (narrowing) of the subclavian and axillary arteries, as well as a thickening of the wall of the ascending aorta. This case illustrates a classic presentation of the disease with peripheral vascular symptoms. The second case, a 27-year-old woman, is more complex. The patient presented with asymmetrical blood pressure, an absent left radial pulse, and neurological symptoms due to a stroke (CVA). Imaging (angio-CT and arteriography) showed severe occlusions of the carotid and subclavian arteries, as well as aneurysms, which confirmed the diagnosis of Takayasu's arteritis. The patient's survival depended on collateral circulation. Finally, the third case describes a 28-year-old woman with systemic symptoms (weight loss) and thickening of the walls of the carotid arteries and the thoracic aorta, without significant stenosis. This case highlights the diversity of the disease's manifestations and the importance of regular follow-up to prevent complications. These three observations illustrate the wide variety of clinical presentations of this disease.

**Keywords:** Takayasu's arteritis, Vasculitis, Stenosis, Aneurysm, Collateral circulation.

### Case Report

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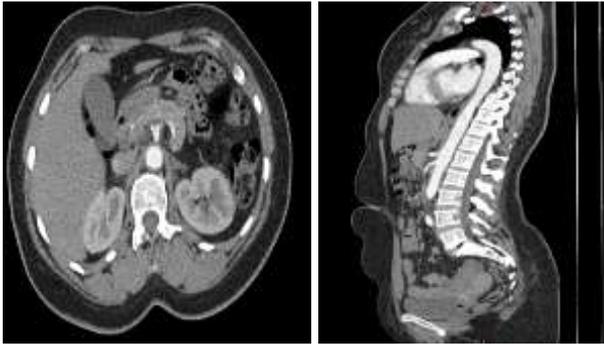
### INTRODUCTION

**Takayasu arteritis (TA)** is a primary inflammatory panarteritis of large calibre blood vessels that primarily affects the aorta and its major branching arteries. It is a rare disease, with an incidence estimated at 1.11 per million per year. It is associated with non-specific general inflammatory signs and various peripheral or central ischaemic manifestations due to arterial stenoses.

### OBSERVATION

#### Case 1:

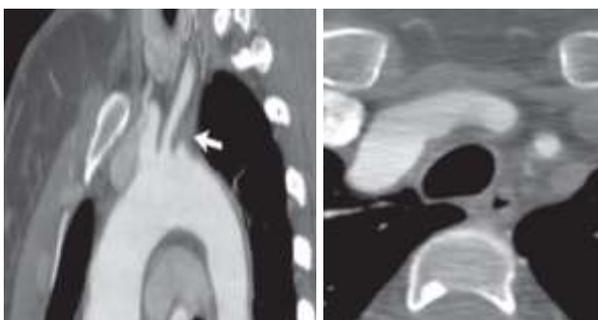
**45-year-old woman** this patient presented with intermittent claudication of the right upper limb. Doppler ultrasound suggested a stenosis of the right subclavian and axillary artery. The CT scan revealed circumferential wall thickening of the ascending aorta, with significant stenosis of the subclavian arteries. This case highlights the importance of early detection to avoid ischaemic complications.



**Fig 1: Cas 1 circumferential wall thickening of the ascending aorta, with significant stenosis of the subclavian arteries**

#### Case 2:

**27-year-old woman** a patient presented clinically with an asymmetrical blood pressure between the arms (greater than 40mmHg), an absent left radial pulse, a right carotid vascular bruit, and neurological disorders. A cerebral CT scan showed an ischaemic stroke due to the occlusion of a branch of the M3 segment of the middle cerebral artery. An angio-CT of the supra-aortic trunks was requested and revealed circumferential thickening of the vascular walls with complete occlusion of the common carotid arteries and the left internal carotid artery, suggesting Takayasu's arteritis. Doppler ultrasound showed bilateral occlusion of the common carotid artery. A week later, an arteriography was performed and showed occlusion of both common carotid arteries, associated with an occlusion of the left subclavian artery at its origin, with a double aneurysm in the right subclavian artery. Only the right vertebral artery was patent, with extensive collateral circulation ensuring cerebral circulation. This case illustrates the importance of imaging in evaluating the extent of the lesions.



**Fig 2: Cas 2 Oblique sagittal contrast-enhanced CT shows occlusion of the left subclavian artery (arrow)**

#### Case 3:

**28-year-old woman** the patient presented with systemic symptoms and weight loss. Doppler ultrasound showed diffuse thickening of the bilateral common carotid arteries with no significant detectable stenosis. The CT scan revealed thickening of the thoracic aorta, with anomalies of the pulmonary arteries. This case demonstrates the variety of possible vascular lesions and highlights the importance of regular follow-up.



**Fig 3: Cas 3 thickening of the thoracic aorta, with anomalies of the pulmonary arteries**

#### DISCUSSION

Takayasu arteritis is an uncommon disease characterized by chronic vascular inflammation of large vessels, predominantly affecting the aorta and its branches such as the carotid artery, subclavian artery, and brachiocephalic artery. It predominantly affects young females with the age of onset between 20 to 30 years of age. Takayasu arteritis has a worldwide distribution; however, it is more common in the Asian population. Although the exact aetiology of the disease is unknown, it has been linked to the HLA-B\*52 allele.

The disease is classified into several types according to the location of the vascular lesions, ranging from involvement of the aortic arch branches (Type I) to generalised involvement of all aortic segments (Type V). The diagnosis relies

on imaging. Doppler ultrasound can reveal circumferential arterial wall thickening, known as the "macaroni sign". Computed tomography (CT) and MRI show wall thickening and enhancement in the acute phase, as well as occlusions, aneurysmal dilations, and aortic valvular disease. The initial treatment is based on systemic steroids, often supplemented by immunomodulatory agents.

## CONCLUSION

These three clinical cases illustrate the diversity of presentations of Takayasu's arteritis, ranging from peripheral symptoms to severe neurological involvement. They highlight the essential role of imaging, particularly CT, for the diagnosis and follow-up of this rare vasculitis. The variety of manifestations demonstrates the need for individualised care and regular follow-up to prevent potentially severe complications. In short, Takayasu's arteritis is a complex disease for which early diagnosis is crucial for better therapeutic management.

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