Received: 13 June 2023 | Revised: 27 July 2023 | Accepted: 15 September 2023

DOI: 10.1002/ccr3.8002

Clinical Case Reports Open Access WILEY

CASE IMAGE

Pulmonary artery aneurysm in a young female with Takayasu arteritis

Pitchaporn Yingchoncharoen | **Nouran Eshak** | **Jerapas Thongpiya** | **Juthipong Benjanuwattra** | **Mahmoud Abdelnabi**

Internal Medicine Department, Texas Tech University Health Science Center, Lubbock, Texas, USA

Correspondence
Jerapas Thongpiya, Internal Medicine Department, Texas Tech University Health Sciences Center, 3601 4th St, MS 9410, Lubbock, Texas 79430, USA.
Email: jthongpi@ttuhsc.edu

Key Clinical Message

In suspected cases of systemic vasculitis, imaging studies should include the pulmonary artery. This is a rare case of Takayasu arteritis with a large pulmonary aneurysm. Medical management is the first line and vascular intervention if fails prior.

Abstract

Takayasu arteritis (TA) should be suspected in young women presented with hypertension, carotidynia, and claudications. Pulmonary artery involvement is frequent, occurring in 20%–50% of patients with TA. However, this case highlights the rare presentation of TA with a large pulmonary aneurysm and minimal aortic involvement. Medical management including immunosuppressive agents and biological therapies remains an important role, with vascular intervention remains as an option if medical therapy failed.

KEYWORDS

granulomatous vasculitis, large-vessel vasculitis, pulmonary artery aneurysm, Takayasu arteritis

1 | CASE PRESENTATION

A woman in her 30s with a past medical history of hypertension, obesity, presented to the clinic for Takayasu arteritis care. She was diagnosed 8 years ago following symptoms of dizziness, migraine, and bilateral lower extremity claudications. She was previously treated with mycophenolate mofetil, prednisone, and tocilizumab, all of which were stopped by the patient 6 months ago. Afterward, she presented complaining of shortness of breath with exertion and dizziness. Physical examination was unremarkable. Laboratory investigation was positive for atypical perinuclear anti-neutrophil cytoplasmic antibody (p-ANCA) with a titer of 1:20, but antibodies to myeloperoxidase and proteinase-3 were negative. Other autoimmune and inflammatory panels were unremarkable. Computed tomography angiography showed an accidentally discovered large aneurysm of the main pulmonary artery (approximately 5 cm in diameter) (Figure 1 Panel A–C), a small aneurysm of the ascending thoracic aorta and premature atherosclerotic calcification of the thoracic and abdominal aorta with variable stenosis in her subclavian arteries and distal right internal carotid artery. The descending thoracic aorta and abdominal aorta were normal in caliber. Vascular surgery recommended medical treatment and proper control of her disease. She was commenced on a tapering dose of prednisone, mycophenolate mofetil, sarilumab, low-dose aspirin, and high-intensity statin.

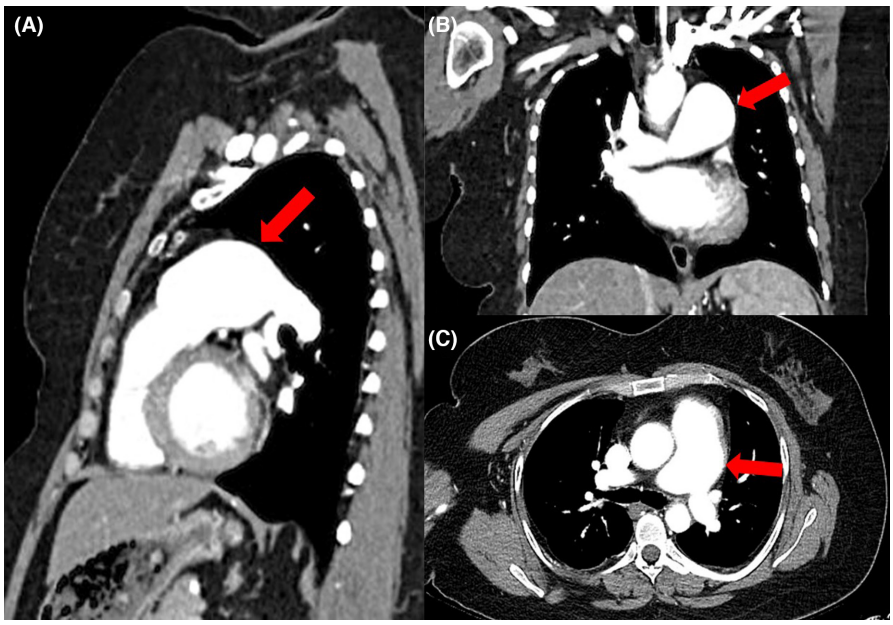

FIGURE 1 CT angiography panels (A–C) showing a large pulmonary artery aneurysm measuring approximately 5 cm marked by arrow.

Takayasu arteritis (TA) is a rare, idiopathic, chronic inflammatory disease, characterized by granulomatous vasculitis of the aorta and its main branches with a relatively low prevalence of 0.9 per million in the United States compared to Asian countries.[1] It usually affects young women in their 4–5th decades and commonly involves carotid and subclavian arteries. Pulmonary artery involvements, mostly stenosis, are reported in 20%–50% of patients; however, only 1.2% were attributed to aneurysms.[2] The extent of brachiocephalic artery disease, but not aorta, strongly correlated with the prevalence of pulmonary arterial involvement. Suggestive clinical findings arise from the involved artery including systemic and pulmonary hypertension, carotidynia, weak peripheral pulse, angina, and claudication. The diagnosis should be ideally made in the pre-stenosis phase as early treatment can prevent further vascular injury.[3] Based on a clinical and radiographic assessment, treatments involve glucocorticoids and other immunosuppressive agents such as methotrexate, azathioprine, or mycophenolate mofetil. Biologic therapies such as tumor necrosis factor or interleukin-6 inhibitors can be considered in refractory cases. Vascular interventions including percutaneous angioplasty with/without stenting or bypass surgery remain an important strategy in the management of Takayasu arteritis. Nevertheless, improved outcomes and reduced complications can be achieved by maximizing medical therapy prior to surgery.[3]

AUTHOR CONTRIBUTIONS

Pitchaporn Yingchoncharoen: Writing – original draft. **Nouran Eshak:** Writing – original draft. **Jerapas Thongpiya:** Writing – original draft. **Juthipong Benjanuwattra:** Writing – review and editing. **Mahmoud Abdelnabi:** Conceptualization; writing – review and editing.

ACKNOWLEDGMENTS

None.

CONFLICT OF INTEREST STATEMENT

None declared.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

CONSENT STATEMENT

Patient consent has been signed and collected in accordance with the journal's patient consent policy.

INFORMED CONSENT

The authors have obtained written informed consent from the patient to publish her medical history/course and case details in accordance with the journal's patient consent policy.

ORCID

Pitchaporn Yingchoncharoen https://orcid.org/0000-0003-0764-6472
Jerapas Thongpiya https://orcid.org/0000-0001-6556-9191
Juthipong Benjanuwattra https://orcid.org/0000-0003-4692-4957
Mahmoud Abdelnabi https://orcid.org/0000-0001-8016-9049

REFERENCES

1. Onen F, Akkoc N. Epidemiology of Takayasu arteritis. *Presse Med*. 2017;46:e197-e203.
2. Yamada I, Shibuya H, Matsubara O, et al. Pulmonary artery disease in Takayasu's arteritis: angiographic findings. *AJR Am Roentgenol*. 1992;159:263-269.
3. Mason JC. Takayasu arteritis—advances in diagnosis and management. *Nat Rev Rheumatol*. 2010;6:406-415.

How to cite this article: Yingchoncharoen P, Eshak N, Thongpiya J, Benjanuwattra J, Abdelnabi M. Pulmonary artery aneurysm in a young female with Takayasu arteritis. *Clin Case Rep*. 2023;11:e8002. doi:10.1002/ccr3.8002