

Unique case of latent left ventricular obstruction in Takayasu arteritis

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DESCRIPTION

Takayasu arteritis (TA) is a rare type of idiopathic large vessel vasculitis, which affects the aorta and its major branches¹; however, clinical characteristics of cardiac hypertrophy in TA are not well known. A 73-year-old man with a medical history of TA was transferred to our department of intensive care unit for pulseless ventricular tachycardia. He was resuscitated with cardioversion and antiarrhythmic drugs.

The three-dimensional CT demonstrated a pathognomonic view of TA with stenosis of the carotid artery and subclavian artery (figure 1A). During the clinical examination, a cardiac MRI revealed marked left ventricular (LV) hypertrophy and outflow obstruction (figure 1B and video 1). Left ventriculography confirmed an LV obstruction with apical ballooning (figure 2A and video 2). LV pressure tracings showed a pressure gradient between LV

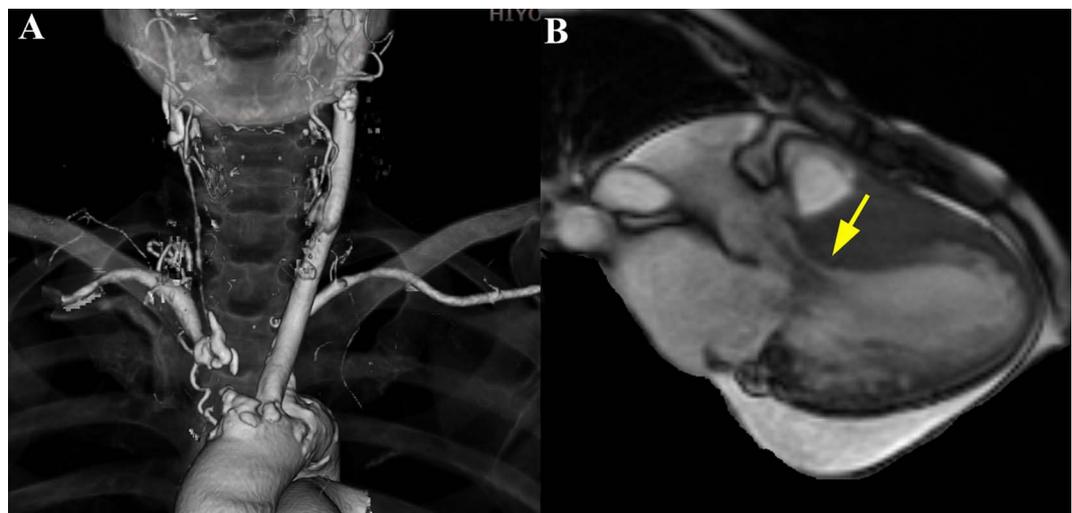


Figure 1 (A) The three-dimensional CT demonstrating stenosis of carotid artery and subclavian artery. (B) Cardiac MRI illustrating marked left ventricular hypertrophy and outflow obstruction expressed by accelerated blood flow indicated with yellow arrow.

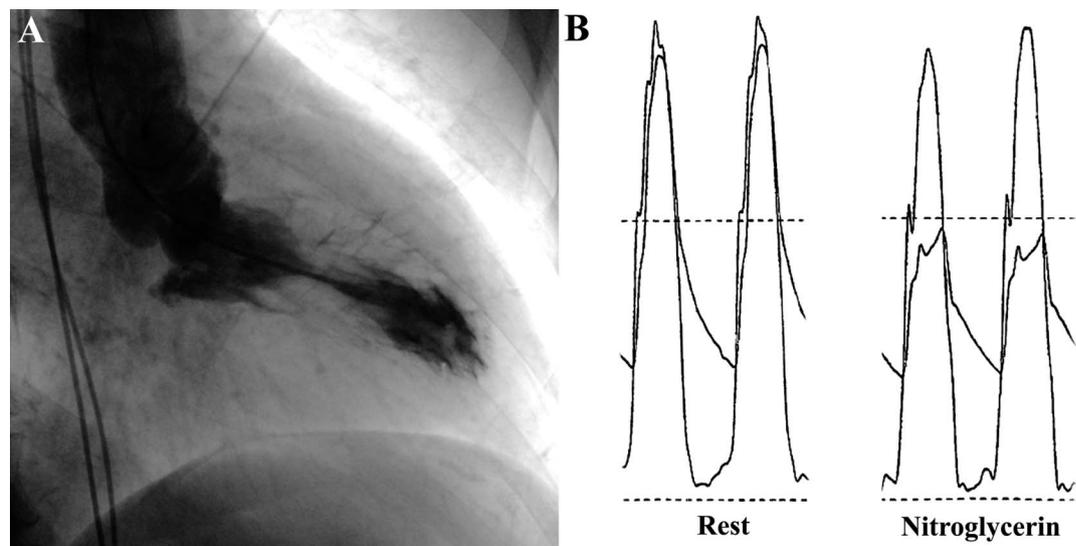
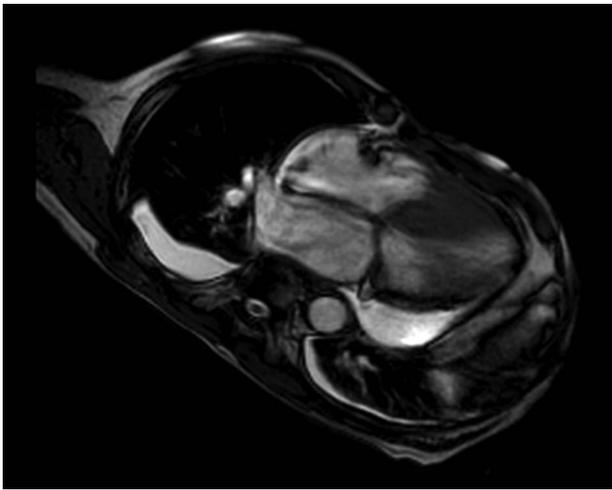
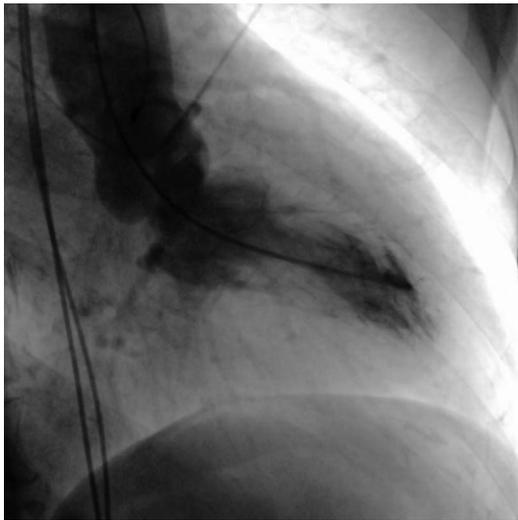


Figure 2 (A) Left ventriculography illustrating left ventricular obstruction with apical ballooning. (B) Left ventricular pressure tracings showing pressure gradient between left ventricle and aorta of 10 mm Hg at rest in the left side. The right side image showing pressure gradient increased to 90 mm Hg after trinitroglycerin administration.

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Video 1 Cardiac magnetic resonance imaging revealed left ventricular outflow obstruction which was expressed by accelerated blood flow.



Video 2 Left ventriculography showed left ventricular obstruction with apical ballooning, and coronary angiography showed normal left coronary artery.

and the aorta of 10 mm Hg at rest; however, it increased to 90 mm Hg after nitroglycerin administration (figure 2B), which is part of the classical description of hypertrophic obstructive cardiomyopathy. According to the necessity of an implantable cardioverter-defibrillator (ICD), dual chamber pacing with ICD was applied as the therapeutic strategy.² It was known that concentric cardiac hypertrophy due to pressure overload occurred in TA³; however LV obstruction with cardiac hypertrophy in TA is a very rare case. In this case, measured systemic vascular resistance was 2693 dyn s/cm⁵, which might mask the LV obstruction. This is a very suggestive case that latent LV obstruction is masked beneath overloaded pressure in a patient with TA with hypertrophic cardiomyopathy. Practical physicians should consider the possible existence of LV obstruction when patients with TA have hypertrophic cardiomyopathy.

Learning points

- ▶ Hypertrophic obstructive cardiomyopathy could be a differential diagnosis if any patient with takayasu arteritis (TA) presents with syncope.
- ▶ Concentric cardiac hypertrophy may occur due to overloaded pressure in TA.
- ▶ The presence of cardiac hypertrophy and left ventricular obstruction should be evaluated in periodic echocardiography during follow-up of patients with TA .

Contributors TI and YS contributed equally to the preparation and writing of the manuscript. AS and NH treated the patient in the intensive care unit.

Competing interests None.

Patient consent Obtained.

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