

Enlarging aneurysm of the ascending aorta in a pregnant woman with Takayasu arteritis

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A 36-year-old primigravida was admitted to our department in the 18th week of pregnancy due to an enlarging aneurysm of the ascending aorta. The patient, never treated before, was hospitalized 1 month earlier because of severe arterial hypertension diagnosed during pregnancy. On admission, her blood pressure in the upper limbs was 100/60 mm Hg (left) and 160/40 mm Hg (right), and in the lower limbs—190/58 mm Hg (left) and 188/55 mm Hg (right). Ambulatory blood pressure monitoring revealed reversed circadian rhythm (mean daytime and nighttime blood pressure of 139/54 mm Hg and 146/49 mm Hg, respectively). Antihypertensive treatment was intensified with methyldopa, nitrendipine, and labetalol. Blood tests showed elevated erythrocyte sedimentation rate (60 mm/h) and C-reactive protein levels (12.5 mg/l). No signs of proteinuria were noted. On auscultation, a bruit was heard over the left subclavian artery. Transthoracic echocardiography showed a normal aortic valve with moderate regurgitation due to dilation of the ascending aorta (58 mm) including the sinotubular junction, as well as normal left ventricular size and function (FIGURE 1A and 1B). Cardiac magnetic resonance imaging confirmed an aneurysm (diameter, 56 mm) of the ascending aorta (FIGURE 1D–1F). Carotid ultrasonography revealed a significant intima-media thickness (2 mm on the right side) and left vertebral artery steal syndrome. Renal and lower limb arteries were normal.

Due to an enlarging aortic aneurysm, the Heart Team decided to refer the patient for a cardiac surgery despite a high risk of fetal loss. In the 19th week of pregnancy, the patient

underwent aneurysm repair with supracoronary vascular prosthesis (FIGURE 1C). Histopathology of the excised aneurysm revealed the thickened adventitia, inflammation of the adventitial vessels, and massive lymphocytic infiltration in the media. A clinical diagnosis of Takayasu arteritis (TA) was made, and prednisone therapy (15 mg/d) was started. In the 38th week of pregnancy, the patient delivered a hypotrophic newborn (2120 g) by caesarean section. After the delivery, the patient was further treated by rheumatologists.

Takayasu arteritis is a rare chronic vasculitis of unknown etiology that predominantly affects the aorta and its main branches.¹ According to the American College of Rheumatology, a patient must fulfill at least 3 of the following criteria to be diagnosed with TA: age of less than 40 years at disease onset, limb claudication, reduced brachial arterial pulse, difference of more than 10 mm Hg in blood pressure readings between the arms, a bruit over the subclavian arteries, or abnormalities on angiography.² Our patient met 4 of these criteria. We applied glucocorticoid therapy, which is the mainstay of treatment to induce remission and manage complications. Half of the patients require second-line agents: cyclophosphamide, methotrexate, or biologic drugs.¹ Due to arterial hypertension, pregnant patients with TA are at high risk of obstetric complications (pre-eclampsia, miscarriage, prematurity, intrauterine fetal growth restriction).^{3,4} Pregnancy itself does not affect the course of the disease, and its outcome depends on maternal vascular involvement, severity of hypertension, and its aggressive management.³

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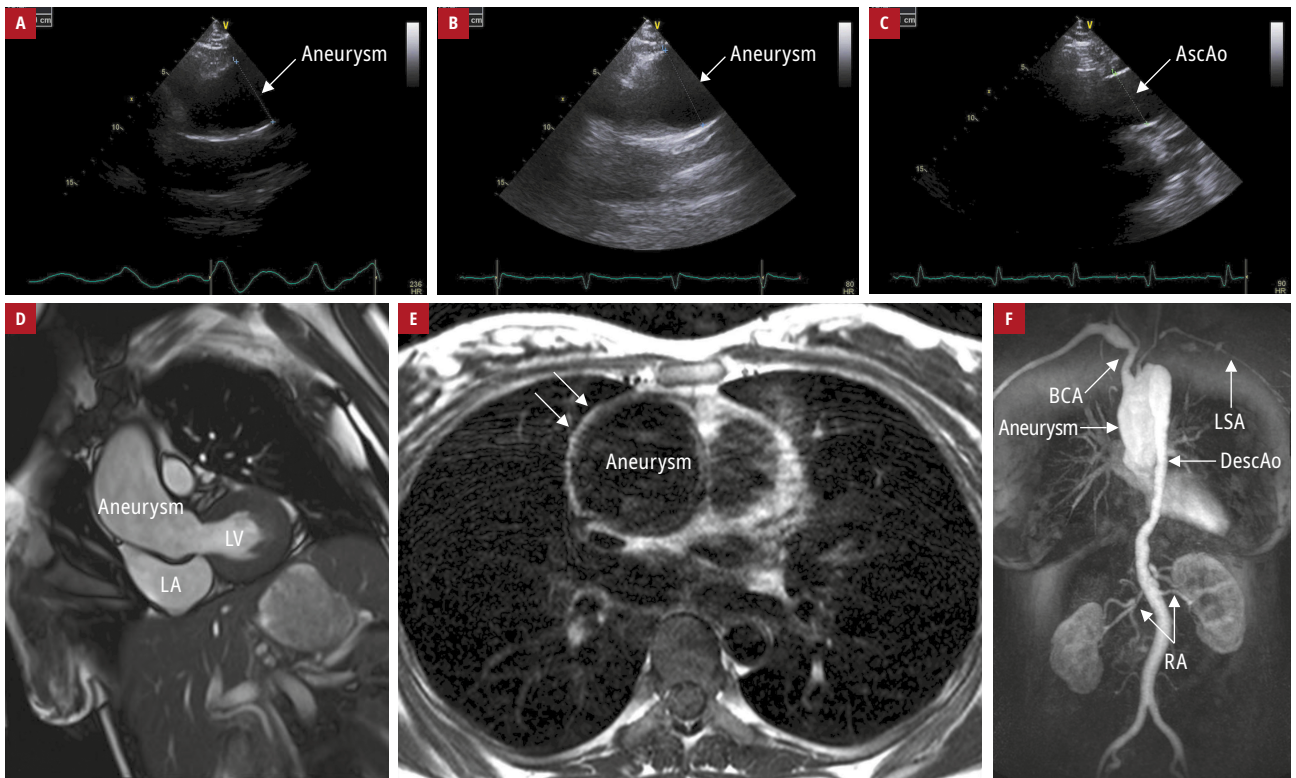


FIGURE 1 **A** – first transthoracic echocardiography showing an aneurysm (diameter, 49 mm) of the ascending aorta; **B** – second transthoracic echocardiography performed within 3 weeks and showing an enlarged aneurysm (diameter, 58 mm); **C** – postoperative transthoracic echocardiography showing the ascending aorta with a supracardiac vascular prosthesis (diameter, 41 mm); **D** – preoperative cardiac magnetic resonance (steady-state free precession) revealing the left ventricular outflow tract with an ascending aortic aneurysm; **E** – preoperative cardiac magnetic resonance (T1-weighted): a transverse section of the ascending aortic aneurysm with a thickened and fibrotic wall (arrows); **F** – preoperative cardiac magnetic resonance (magnetic resonance angiography with maximum intensity projection) showing the whole aorta and its branches with an ascending aortic aneurysm, narrowing of the descending aorta, and intact renal arteries

Abbreviations: AscAo, ascending aorta; BCA, brachiocephalic artery; DescAo, descending aorta; LA, left atrium; LSA, left subclavian artery; LV, left ventricle; RA, renal artery

Our case highlights the importance of a detailed examination of pregnant patients with arterial hypertension. The use of multiple imaging techniques allowed for the diagnosis of the ascending aortic aneurysm and TA. The cardiac surgery was successful, and both the mother and fetus survived.

ARTICLE INFORMATION

CONFLICT OF INTEREST None declared.

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