

## CASE IMAGE

# Acute lower-extremity arterial thrombosis with immune thrombocytopenia

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**Funding information**

Japanese Circulation Society; Japan Arteriosclerosis prevention fund; Japan Society for the Promotion of Science, Grant/Award Number: 22K16141

**Key Clinical Message**

We describe an acute lower-extremity arterial occlusion in a 30-year-old woman with immune thrombocytopenia and polycystic ovary syndrome. Thrombosis may be a complication of immune thrombocytopenia requiring careful management.

**KEYWORDS**

acute limb ischemia, arterial thrombosis, immune thrombocytopenia, ITP, polycystic ovary syndrome

## 1 | CASE PRESENTATION

A 30-year-old Japanese woman presented with right lower-extremity pain. She was diagnosed with immune thrombocytopenia (ITP) at age 21 and was treated for the eradication of *H. pylori* but did not receive any medical therapy (including steroids). She had started taking birth control pills at age 22 due to irregular menstruation but developed deep vein thrombosis and stopped taking the pills; walking 100 m induced intermittent claudication. With the BMI of 27.3 she was considered obese, but she did not have hypertension or diabetes mellitus. Echocardiography and contrast-enhanced CT showed thrombotic occlusion of the right common femoral artery and a mural thrombus in the abdominal aorta (Figures 1 and 2). The platelet count was  $7.1 \times 10^3/\mu\text{L}$  with no bleeding tendency. Transvaginal ultrasonography revealed no abnormalities.

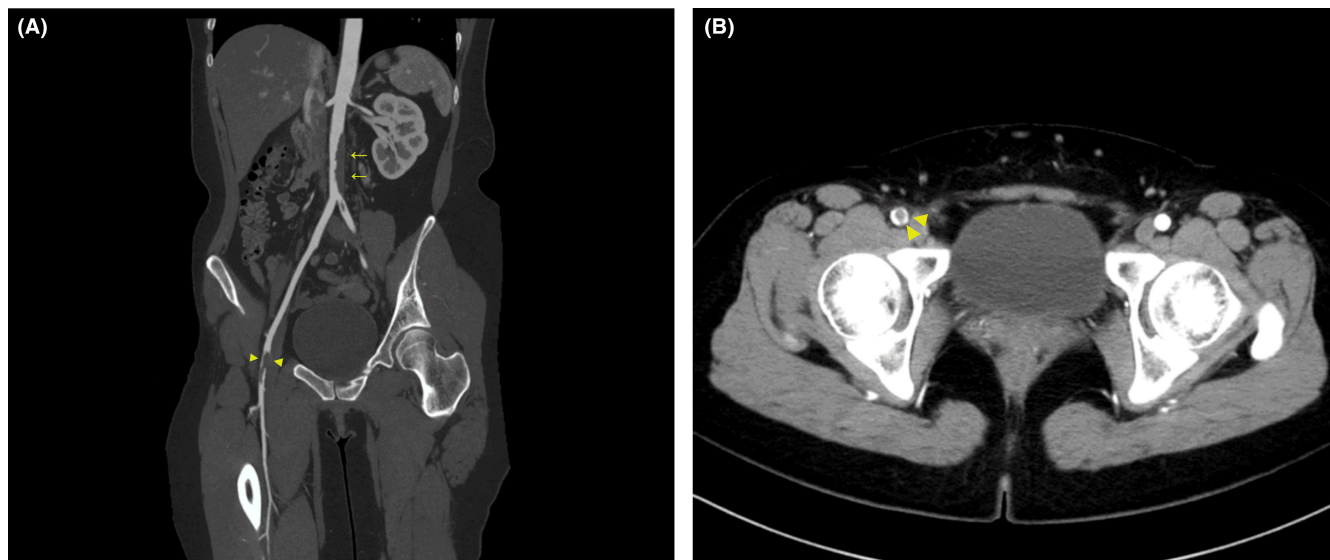
Endocrinology revealed polycystic ovary syndrome (POS) (LH 15.6 mIU/mL, FSH 5.92 mIU/mL, testosterone 0.73 ng/mL). Other triggering factors including antiphospholipid antibodies were ruled out. The claudication and femoral artery thrombus resolved within 12 days of heparin and warfarin treatment.

## 2 | DISCUSSION

Acute lower-extremity arterial occlusion is a rapid limb-ischemia condition that can lead to amputation. The reported incidence of acute lower-extremity arterial occlusion is ~1.5 per 10,000 persons/year, with a mean onset age at 72 years. The etiologies include cardiogenic embolism (e.g., atrial fibrillation, left ventricular thrombus, bizarre embolus, infective endocarditis, and cardiac tumor),

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**FIGURE 1** (A, B) Contrast-enhanced CT shows a mural thrombus in the abdominal aorta (arrows), and the right femoral artery is subocclusive due to the thrombus (arrowheads).

atheroembolism, medical embolism, and thrombosis (associated with, e.g., lower-extremity occlusive artery disease, popliteal artery aneurysm, and vasculitis). Our patient's case was considered a noncardiogenic embolus free from a mural thrombus in the abdominal aorta, since cardiogenic embolism, vasculitis, etc., were not suggested by echocardiography, venous echocardiography, contrast CT, or serological tests.

There are several reports of a thrombus in aorta wall without aneurysm. We suspected ITP, POS, and obesity as predisposing factors for our patient's thrombus. The mechanism by which ITP causes thrombosis may involve platelet microparticles (PMPs). Endothelial activation and complement activation may also be involved in thrombogenicity. We identified no reports of arterial embolism complicating POS. There are some reports of arterial embolism (cerebral embolism and mesenteric artery occlusion) associated with ITP.<sup>1</sup> It has been suggested that ITP increases the risk of thrombosis,<sup>2</sup> especially in patients with cardiovascular disease or cardiovascular risk factors such as obesity, hypertension, and diabetes. Embolisms such as our patient's as well as arterial embolism (e.g., myocardial infarction) are considered a complication requiring attention.

The maximum doses of t-PA and urokinase approved in Japan are lower than those in Europe and the United States, and endovascular thrombectomy cannot be performed as in those regions, and surgical revascularization is considered the first choice. Since our patient did not have neurological deficit or pain at rest, conservative treatment was selected as the initial treatment, followed by standby revascularization if necessary. Warfarin was introduced in conservative treatment as other cases.<sup>1</sup> Warfarin is the standard of care for left ventricular

thrombus and mechanical valve,<sup>3</sup> which are thrombi of the arterial system (as in our patient). Both her subjective symptoms and thrombus thus resolved with conservative treatment alone.

#### AUTHOR CONTRIBUTIONS

**Takahiro Nagatomo:** Writing – original draft. **Takuya Nagata:** Writing – review and editing. **Yuju Ohno:** Writing – review and editing. **Kotaro Numaguchi:** Supervision.

#### FUNDING INFORMATION

This work was supported by a grant from the Japan Society for the Promotion of Science (JSPS) KAKENHI (no. 22K16141), Japan Arteriosclerosis prevention fund (JAPF), and a Grant-in-Aid for Clinical Research from the Japanese Circulation Society.

#### CONFLICT OF INTEREST STATEMENT

All authors report that they have no relationships relevant to the contents of this paper to disclose.

#### DATA AVAILABILITY STATEMENT

Data available on request due to privacy/ethical restrictions.

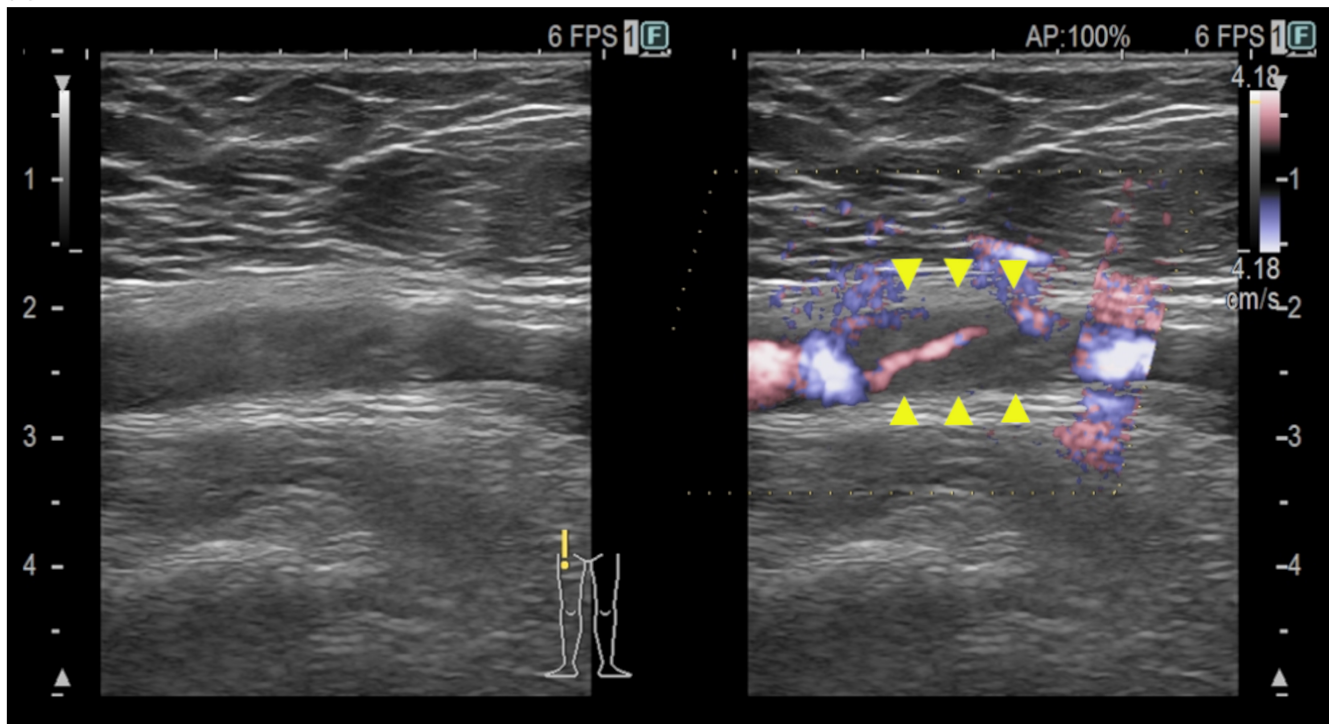
#### CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

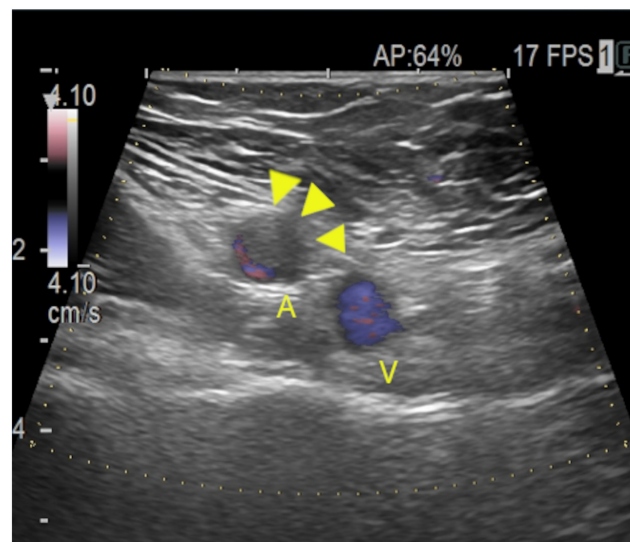
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(A)



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**FIGURE 2** (A, B) Lower-extremity arterial echo shows thrombus (*arrowhead*) in the right femoral artery.

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**How to cite this article:** Nagatomo T, Nagata T, Ohno Y, Numaguchi K. Acute lower-extremity arterial thrombosis with immune thrombocytopenia. *Clin Case Rep*. 2024;12:e9064. doi:[10.1002/ccr3.9064](https://doi.org/10.1002/ccr3.9064)