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Acute pulmonary embolism in a patient with Klippel–Trenaunay–Weber syndrome treated with catheter-directed thrombectomy: a case report

Tomoyo Hamana, Yu Taniguchi *, Shun Nagai, and Ken-ichi Hirata

Division of Cardiovascular Medicine, Department of Internal Medicine, Kobe University Graduate School of Medicine, 7-5-1 Kusunoki-cho, Chuo-ku, Kobe, Hyogo 650-0017, Japan

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Case description

A 35-year-old woman with a history of Klippel-Trenaunay-Weber syndrome presented with severe dyspnoea. Blood pressure was 88/50 mmHg; heart rate, 136 bpm; SpO_2, 94% (nasal 4L); haemoglobin, 12.0 g/dL; D-dimer, 20.5 μg/mL; troponin I, 528 pg/mL. Contrast-enhanced computed tomography (CT) revealed extensive bilateral pulmonary embolism (PE), a deep vein thrombus from the right great saphenous vein to the popliteal vein, and venous malformations (*Figure 1A–C*). She was classified as having a high-mortality-risk pulmonary embolism.[1] Considering a history of bleeding from haemorrhoids and rectal telangiectasia, a catheter-based thrombectomy was performed to avoid systemic thrombolysis. However, shortly post-procedure, she experienced cardiopulmonary arrest. VA-extracorporeal membrane oxygenation (ECMO) was immediately initiated.

The next day, catheter-directed thrombectomy was re-performed. On advancing a 9-Fr guiding sheath (Teleflex, Inc., Morrisville, USA) to the main trunk, angiography revealed extensive pulmonary arterial thrombi bilaterally (*Figure 1D*). Despite off-label use, considering several safe experiences,[2] an 8-Fr guiding catheter (Hyperion®, ASAHI INTECC Corp., Japan) was used to aspirate the proximal thrombus, then a 6-Fr guiding catheter (Profit®, NIPRO Corp., Japan) for the distal thrombus. Many thrombi were retrieved (*Figure 1E*), improving pulmonary blood flow (*Figure 1F*). Anticoagulation therapy with heparin was continued, and she was weaned from VA-ECMO three days later. Fourteen days later, CT revealed the disappearance of the extensive thrombus (*Figure 1G*). She discontinued heparin and started rivaroxaban 30 mg/day on day 25 and was discharged on day 31 without further clinical problems.

Currently, catheter-directed thrombectomy is not the first-line treatment for high-risk PE. However, it may be an alternative for patients with high bleeding or surgical risk.

Consent: In line with the COPE guidelines, informed consent was obtained from the patient for participation in this study and publication of the case and accompanying images.

Conflict of interest: None declared.

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Data availability

The data underlying this article cannot be shared publicly for the privacy of the individual who participated in the study.

References

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* Corresponding author. Tel: +81 78 382 5111, Fax: +81 78 382 5265, Email: yutani@med.kobe-u.ac.jp
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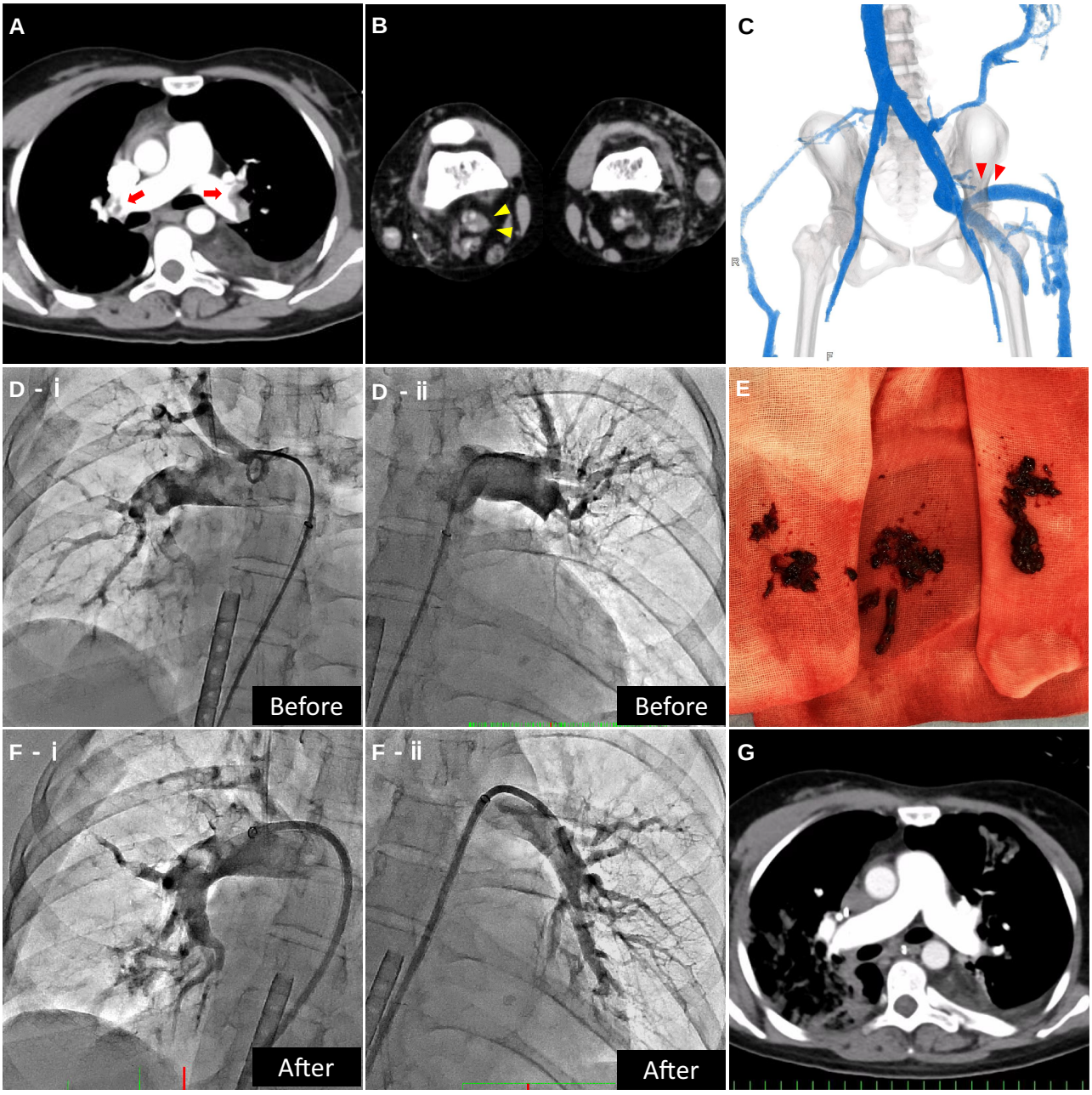

Figure 1 (*A* and *B*) Contrast-enhanced computed tomography scan on admission performed according to our local protocol, with imaging done from the thorax to the lower extremities, showing bilateral pulmonary embolism (red arrows) and a deep vein thrombus from the right great saphenous vein to the popliteal vein (yellow triangles). (*C*) Three-dimensional-computed tomography angiogram showing venous malformations, including a dilated left iliac vein and persistent sciatic vein branching from the left iliac vein (red triangles). (*D*) Pulmonary angiography images show an extensive thrombus in the main trunk of the pulmonary artery. (*E*) A guiding catheter successfully aspirated a large amount of thrombus, (*F*) which improved blood flow. (*G*) A repeat computed tomography scan shows the disappearance of the extensive thrombus.