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Case illustrated

Candida parapsilosis graft infection presenting as cutaneous leukocytoclastic vasculitis

Hirokazu Toyoshima[a,*], Kohei Unno[b], Midori Mizuno[c], Motoaki Tanigawa[d], Chiaki Ishiguro[e], Hiroyuki Tanaka[a], Yuki Nakanishi[a], Shigetoshi Sakabe[a]

[a] *Department of Infectious Diseases, Japanese Red Cross Ise Hospital, Ise 516-8512, Japan*
[b] *Department of Cardiology, Japanese Red Cross Ise Hospital, Ise 516-8512, Japan*
[c] *Department of Dermatology, Japanese Red Cross Ise Hospital, Ise 516-8512, Japan*
[d] *Department of Respiratory Medicine, Japanese Red Cross Ise Hospital, Ise 516-8512, Japan*
[e] *Department of Medical Technology, Japanese Red Cross Ise Hospital, Ise 516-8512, Japan*

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A 34-year-old man presented with fever and rash for 7 days. He underwent aortic valve and ascending aorta replacement 2 years earlier for an anastomotic aneurysm, after valve-sparing aortic root replacement for annuloaortic ectasia and the aortic bicuspid valve. He also had *Candida parapsilosis*-induced prosthetic valve endocarditis and vascular graft infection 1 year earlier, treated with repair of the aortic valve, ascending aorta replacement, and persistent fluconazole administration. Physical examination revealed palpable purpura on the left leg (Fig. 1). Skin biopsy revealed leukocytoclastic vasculitis (LCV) (Fig. 2). The skin biopy specimen culture was negative. Laboratory examination revealed no renal dysfunction; urinary sediment abnormalities; elevated IgA and IgM values; low complement value; anti-nuclear antigen; anti-neutrophil cytoplasmic antibody (ANCA); hepatitis B, hepatitis C, and human immunodeficiency virus antibodies; and cryoglobulin.

Blood cultures were positive for *C. parapsilosis* and indicated susceptibility to amphotericin B (AMB), fluconazole, micafungin, and 5-flucytosine, despite persistent oral fluconazole administration with good adherence. Minimum inhibitory concentrations of the isolate were 0.5, 2, 0.5, and ≤ 1 μg/mL, respectively. Transesophageal echocardiography revealed vegetation on the graft (Fig. 3). He was diagnosed with *C. parapsilosis* graft infection with cutaneous LCV. He received intravenous fluconazole (400 mg) and micafungin (300 mg) 24 hourly because of AMB intolerance. Repeated blood cultures remained positive, without prolonged time-to-positivity. Therefore, micafungin was switched to oral 5-flucytosine on day 13. Repeated blood cultures turned negative on day 19, and the rash disappeared. He was disease-free with lifelong oral fluconazole and 5-flucytosine at the 3-month follow-up.

Cutaneous LCV is classified as ANCA-associated vasculitis; immune complex vasculitis; vasculitis associated with systemic diseases; and vasculitis caused by drugs, infections, or neoplasms [1]. Cutaneous LCV caused by infections is common in streptococcal infections [1], whereas cutaneous LCV after *C. parapsilosis* vascular infections is rare, with only two cases reported till date [2,3]. In both cases, intensive antifungal agents, including AMB, were administered for fungal endocarditis. In one case, repeating surgery aided in achieving negative blood cultures. Our patient achieved negative

* Correspondence to: Department of Infectious Diseases, Japanese Red Cross Ise Hospital, 471-2, Funae, Ise, Mie 516-8512, Japan.
E-mail address: hirokazutoyoshima@gmail.com (H. Toyoshima).

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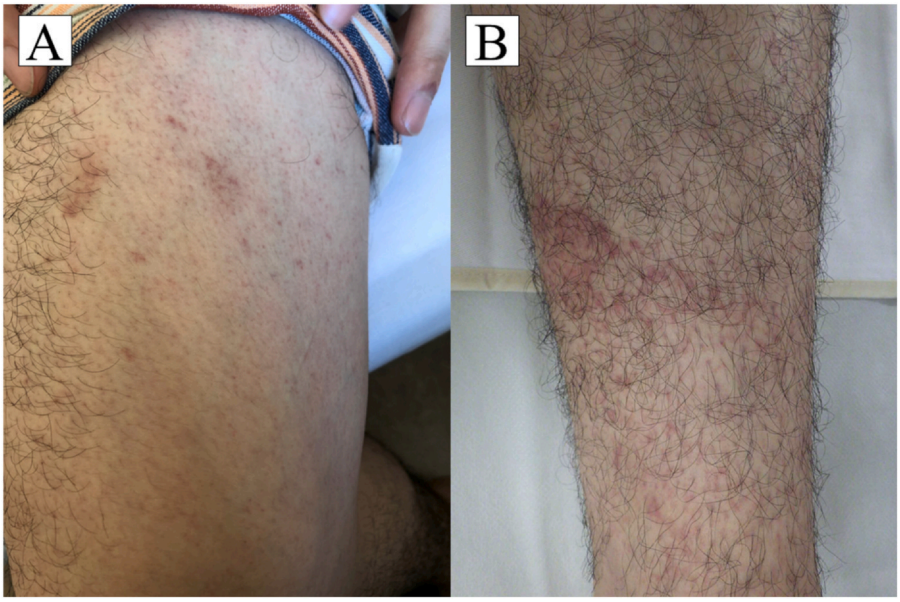

Fig. 1. Palpable purpura on the left thigh and lower leg (A, B).

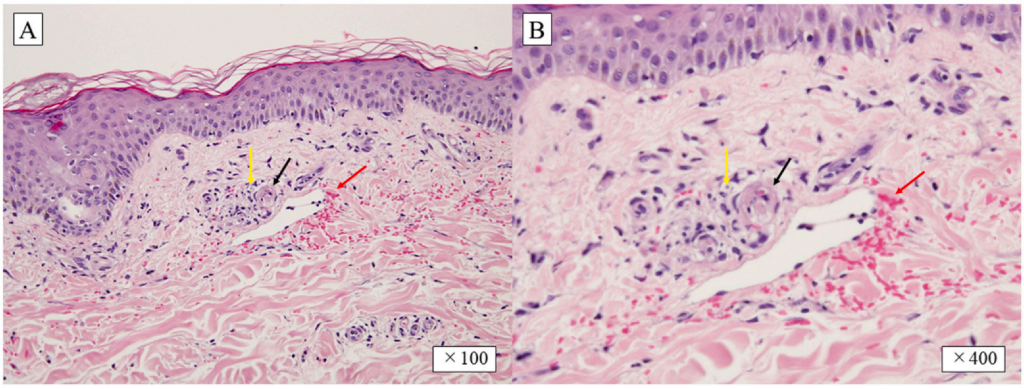

Fig. 2. Histological appearance showing fibrinoid necrosis of small blood vessel walls in the superficial and mid dermis (A, B, black arrow), extravasation of red blood cells into the surrounding tissue (A, B, red arrow), granulocytic debris and nuclear dust (A, B, yellow arrow); no embolus was observed.A, ×100 magnification; B, ×400 magnification. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

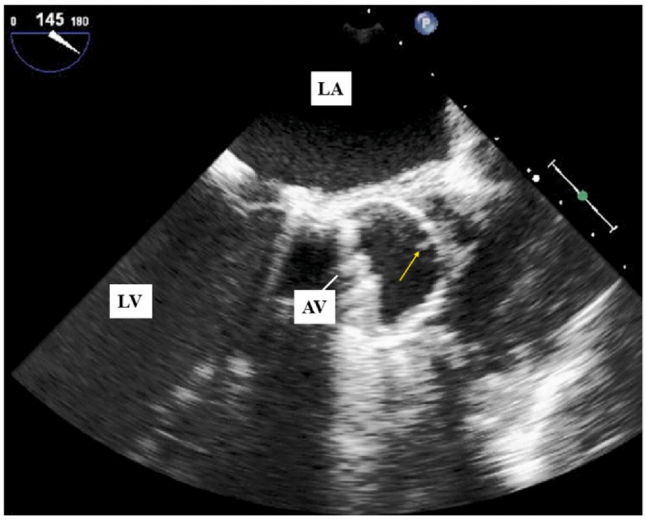

Fig. 3. Transesophageal echocardiography on day 7 showing vegetation on the graft (yellow arrow), not on the prosthetic valve. LA, left atrium; LV, left ventricle; AV, aortic valve. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

blood cultures with fluconazole and 5-flucytosine without repeating surgery. Intensive antifungal therapy, including AMB, is the first-line treatment for *C. parapsilosis* prosthetic infections [4]; however, fluconazole, especially with 5-flucytosine, can be considered in AMB intolerance cases.

The patient was rapidly diagnosed, based on the characteristic history and cutaneous LCV, and successfully treated with fluconazole and 5-flucytosine despite AMB intolerance. Clinicians should consider cutaneous LCV as a diagnostic gateway of *C. parapsilosis* infections.

Ethical approval

This study was approved by the institutional review board and ethics committee of the Japanese Red Cross Ise Hospital (permission number: ER2021-36).

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CRediT authorship contribution statement

Hirokazu Toyoshima: Conceptualization, Methodology, Data curation, Writing – original draft, Writing – review & editing, Visualization. **Kohei Unno:** Methodology, Data curation. **Midori Mizuno:** Supervision. **Motoaki Tanigawa:** Supervision. **Chiaki Ishiguro:** Conceptualization, Methodology, Supervision. **Hiroyuki Tanaka:** Methodology. **Yuki Nakanishi:** Methodology. **Shigetoshi Sakabe:** Supervision.

Consent for publication

Written informed consent was obtained from the patient for the publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Declarations of interest

None.

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