Severe Septic Vasculitis Preceding Thoracic Empyema: *Staphylococcus aureus* Enterotoxin Deposition in Vessel Walls as a Possible Pathomechanism

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Severe septic vasculitis, a rare condition, is characterized by widespread cutaneous necrosis and systemic vasculitis secondary to *Staphylococcus aureus* toxins. In this case report, a 62-year-old woman presented with disseminated necrolytic ulcers on the lower legs. Laboratory investigations revealed a high white blood cell count and elevated markers of inflammation. Serological and molecular analyses confirmed the presence of *Staphylococcus aureus* and identified enterotoxin production. The patient was treated with antibiotics, and the application of sevelamer helped to control the progression of the ulcers. The cutaneous manifestations resolved after 3 weeks of treatment, and the patient was discharged on day 30. The case highlights the aggressive nature of septic vasculitis and the importance of early diagnosis and treatment with antibiotics and adjunctive therapies. The role of enterotoxins in mediating the cutaneous and systemic manifestations is discussed.
systemic cytokine storm resulting in immune-mediated vasculitis and intravascular coagulation in the skin.

In addition, the radical progression of purpura preceding empyema suggests that there was systemic circula-
tion of SE, and that this circulation directly affected vasculitis formation. Indeed, we first identified deposi-
tion of SE within pericytes of affected vessels by direct immunofluorescence. The direct deposition of SEs may explain the trigger of angiotropic infiltration of inflam-
atory cells resulting in cutaneous vasculitis.

Dermatologists should take note of cutaneous vasculi-
itis followed by severe systemic infection with a gap in the clinical course. Although the precise mechanism of septic vasculitis remains to be elucidated, this case report provides a clue to the pathogenesis from the viewpoint of SE.

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Fig. 2. (a) Detection of the SEIP gene by multiplex PCR (4). Lanes: M, molecular size marker; B1 and B2, colonies from blood culture; P1 and P2, colonies from pleural effusion culture; P, a mixture of total DNA of S. aureus 196E, S6, FRI-326, FRI-569 and N315 as a positive control; N, distilled water as a negative control. (b) S. aureus enterotoxin (SE) deposition (arrowheads) within pericytes of affected vessels in a cutaneous specimen from a purpura (green: SE; blue: nuclei, original magnification ×200).

a) M B1 B2 P1 P2 P N

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