DOI: 10.1002/cia2.12110

Journal of Cutaneous Immunology and Allergy
WILEY

LETTER TO THE EDITOR

Japanese spotted fever exhibiting leukocytoclastic vasculitis

Dear Editor,

Japanese spotted fever (JSF) was discovered as an emerging rickettsiosis in 1984.[1]

An 84-year-old man visited our hospital due to skin eruptions over his entire body 2 days ago and fever.

He had been taking bicalutamide for prostate cancer for 2 years prior to presentation. He had no travel history, and lived in a mountainous region and mowed his garden routinely. At the initial consultation, pale purpuric spots (2-5 mm) were scattered across his entire body, including the palms and soles (Figure 1A,B). His body temperature was 36.6°C, blood pressure was 102/73 mm Hg, respiratory rate was 20 breaths per minute, and pulse rate was 140 beats per minute. There was no lymphadenopathy. Blood tests revealed a white blood cell (WBC) count of 7750/μL, segmented cell rate of 90.4%, eosinophil cell rate of 0.1%, lymphocyte rate of 7.6%, platelet count of 71 000/μL (reference range: 160 000-410 000/μL), aminotransferase (AST) level of 64 U/L, alanine aminotransferase (ALT) level of 45 U/L, C-reactive protein (CRP) level of 25.86 mg/dL

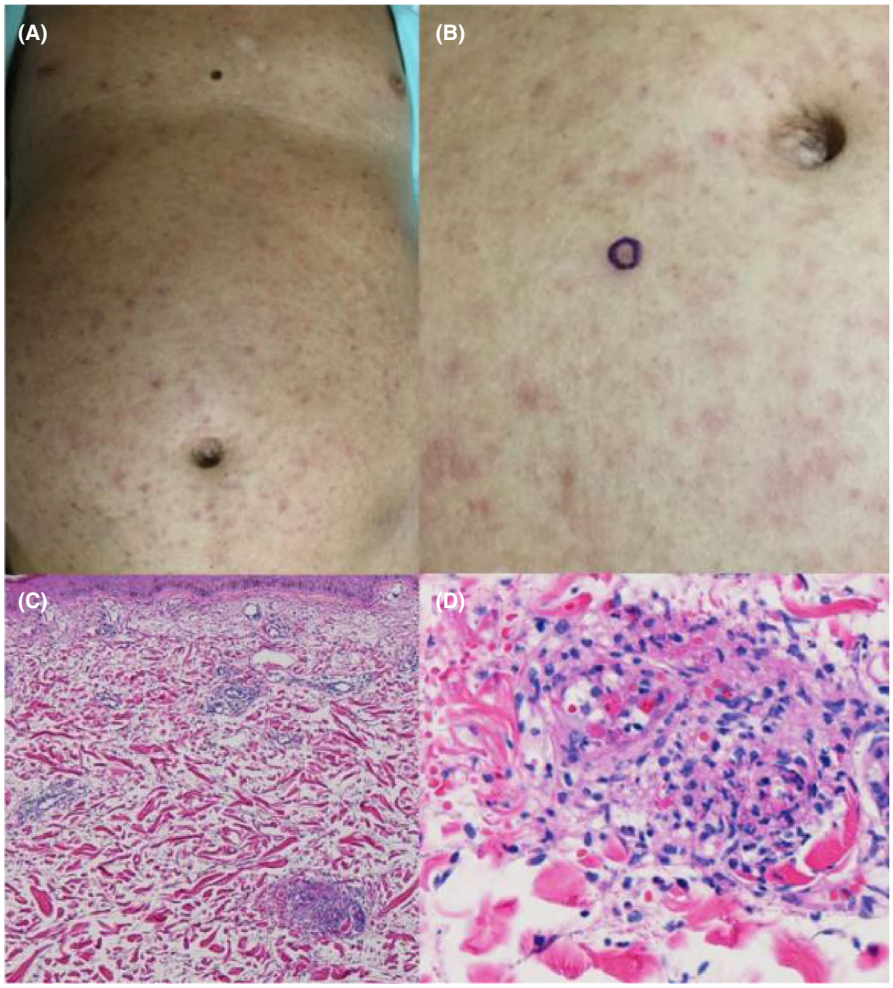

FIGURE 1 A, Pale purpuric spots (2-5 mm) were scattered over the body. B, Biopsy was performed from the marked site. C, D, There was perivascular neutrophil infiltration, and nuclear dust and erythrocyte extravasation were observed (hematoxylin-eosin staining. [C] × 40, [D] × 200)

(<0.3 mg/dL), procalcitonin level of 2.21, ferritin level of 5062 ng/mL (reference range: 20-220 ng/mL), soluble interleukin 2-receptor level of 4954 U/mL (reference range: 122-496 U/mL), activated partial thromboplastin time (A-PTT) of 31.4 (reference range: 25-39), fibrinogen level of 337 mg/dL (reference range: 200-400 mg/dL), fibrinogen degradation product (FDP) level of 14.2 μg/mL (reference range: 0-10 μg/mL), and D-dimer level of 9.5 μg/mL (reference range: 0-1 μg/mL).

The spotted fever group of rickettsioses was suspected. He was admitted, and fluid infusion and oral administration of minocycline hydrochloride (MINO) at a dose of 200 mg/d were initiated.

On admission, skin biopsy of the abdominal area revealed leukocytoclastic vasculitis around the blood vessels from the superficial to deep dermal layers (Figure 1C, D). Six days after admission, blood tests demonstrated improvement: WBC count of 8780/μL, platelet count of 181 000/μL, CRP of 2.27 mg/dL, procalcitonin level of 0.05, FDP level of 9.4 μg/mL, and D-dimer level of 5.7 μg/mL.

Four days after admission, the Japanese spotted fever rickettsia gene was detected using his blood for real-time PCR, and a diagnosis of JSF was made. Blood culture was negative 7 days after admission, and hematological findings did not suggest HSV, cytomegalovirus, or Epstein-Barr virus infection. He was discharged 12 days after admission.

The CRP level was markedly high in this patient, which may have reflected vasculitis. In a previous prospective study in south India in 35 patients with confirmed rickettsial spotted fever, generalized rash with improvement on the palms and soles was observed in 80% of the patients, and vasculitis on histopathology of the rash was noted in 54%.[2] Rickettsia spp. is an obligate intracellular agent that damages directly the vessels by provoking endothelial cell lysis and consequent microleaks.[3]

There are few previous English reports of histopathological findings of JSF. Further accumulation of cases is needed to clarify the involvement of vasculitis in the pathogenesis.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

Masayuki Takahashi MD, PhD[1]
Naomi Sasaki MD, PhD[2]

[1] *Department of Dermatology, Kure-Kyosai Hospital, Federation of National Public Service Personnel Mutual Aid Associations, Hiroshima, Japan*
[2] *Department of Pathology, Kure-Kyosai Hospital, Federation of National Public Service Personnel Mutual Aid Associations, Hiroshima, Japan*

Correspondence
Masayuki Takahashi, Kure Kyosai Hospital, Kure, Japan.
Email: takahashimasayuki@k6.dion.ne.jp

ORCID

Masayuki Takahashi https://orcid.org/0000-0001-5644-3159

REFERENCES

1. Matsuura H, Yokota K. Case report: family cluster of Japanese spotted fever. Am J Trop Med Hyg. 2018;98:835–7.
2. Dincy PC, Susanne PA, Leni G, et al. Clinicopathological study on rickettsial spotted fever from south India. Trop Doct. 2018;48:325–9.
3. Satta R, Biondi G. Vasculitis and infectious diseases. G Ital Dermatol Venereol. 2015;150:211–20.