

initiation of effective treatment is associated with a greater probability of irreversible neurological damage. Therefore, accurate diagnosis in the early phase of CIDP is quite important. Dermatologists should be aware of this disease as a rare sequela following DIHS.

CONFLICT OF INTEREST: None declared.

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Comparison of positive ratio for red meat-specific immunoglobulin E between endemic and non-endemic area for Japanese spotted fever in Mie Prefecture, Japan

Dear Editor,

In the USA, the relation between tick bite and red meat allergy has been reported; the tick salivary gland protein contains α -Gal, which is an epitope shared with red meat.¹ In Japan, a previous report indicated a high prevalence of red meat allergy in the endemic area of Japanese spotted fever (JSF), which closely relates to the tick bite episode in residents. We previously reported a case of acute urticaria induced by red meat after biting by *Haemaphysalis longicornis*.² All cases of JSF in Mie Prefecture before 2017 were patients from Shima Peninsula, located south of Miya River. We previously performed the surveillance of tick species in the Ise-Shima area; all JSF cases in Mie Prefecture were reported.³ *H. longicornis* was the most common tick in this area, and also *H. longicornis* has been suspected as the competent host of *Rickettsia japonica* causing JSF. We herein investigate the positive ratio of specific immunoglobulin (Ig)E against red meat between the Suzuka region in a non-endemic area and the Ise-Shima region in an endemic area located south of Miya River.

Sixteen patients from a non-endemic area of Suzuka region and 12 patients from an endemic area of Ise-Shima region were randomly enrolled for this study. As comparison, healthy volunteers were also enrolled (nine from the Suzuka region and nine from Ise-Shima) (Table 1a,b, Appendix S1).

Positive results for red meat-specific IgE were four patients in 12 cases (33%) in the Ise-Shima region. Only one patient had urticaria by red meat allergy and four patients had a past history of JSF in the Ise-Shima region. In clear contrast, all 16

samples were negative in the non-endemic area of Suzuka region. The healthy controls in both regions revealed no elevated red meat-specific IgE levels (Table 1a,b). In addition, we investigated the tick species in the non-endemic Suzuka area. Interestingly, almost all were *Haemaphysalis flava*.

In a previous report, red meat-specific IgE-binding proteins were identified as the carbohydrate moiety (α -Gal) on laminin c-1 and the collagen a-1(VI) chain, using sera from patients with red meat allergy and a positive serum-specific IgE test of red meat.⁴ Therefore, we speculated that the detected IgE to red meat reacts to α -Gal protein in the current case.

We have not reached a final conclusion as to why the patients in Ise-Shima region have specific IgE against red meat. Although whether *H. flava* has α -Gal or not is currently unknown, different tick species in endemic or non-endemic areas may be a possible reason. The custom of hunting and eating deer in older residents in Ise-Shima region raises the risk of tick bites. A close positive correlation between serum anti- α -Gal and anti-red meat IgE levels was reported, and levels of anti-red meat IgE tend to be lower than the positive border, if anti- α -Gal IgE is less than 5 U/mL, suggesting that current data may be underestimated.⁵ The number of study participants is small, but it seems that the positive ratio of red meat-specific IgE is more in the endemic area probably due to the frequent tick bites with α -Gal.

CONFLICT OF INTEREST: None declared.

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Table 1. (a) Summary of 12 study patients and nine healthy volunteers enrolled in the Ise-Shima area. Number 3 was urticaria caused after tick bite. The relation between the history of Japanese spotted fever and red meat-specific immunoglobulin (Ig)E level was not detected. (b) Summary of 16 study patients and nine healthy volunteers enrolled in the Suzuka area. The red meat-specific IgE level was not elevated

	No.	Year	Sex	Month	Complaint	Red meat allergy	IgE Ua/mL	Class	History of JSF
(a)									
Ise-Shima area									
Patient	1	73	F	7	Contact dermatitis	None	2.06	2	None
	2	79	F	8	Hand eczema	None	0.41	1	None
	3	77	F	9	Urticaria	Have	19.2	5	None
	4	79	F	9	Urticaria	None	<0.10	0	None
	5	69	M	9	Urticaria	None	<0.10	0	None
	6	80	F	11	Tike bite	None	1.88	1	Have
	7	74	F	11	Tick bite	None	0.24	0	None
	8	85	F	12	Pernio	None	0.41	0	Have
	9	90	F	1	Eczema	None	0.00	0	Have
	10	75	F	1	Pernio	None	0.00	0	Have
	11	30	F	2	Contact dermatitis	None	0.06	0	None
	12	50	F	3	Urticaria	None	0.00	0	None
Control	1	47	F	11	None	None	<0.10	0	None
	2	26	F	11	None	None	<0.10	0	None
	3	28	F	11	None	None	<0.10	0	None
	4	65	F	11	None	None	<0.10	0	None
	5	30	M	11	None	None	<0.10	0	None
	6	34	F	11	None	None	<0.10	0	None
	7	27	F	11	None	None	<0.10	0	None
	8	35	M	11	None	None	<0.10	0	None
	9	33	M	11	None	None	<0.10	0	None
(b)									
Suzuka area									
Patient	1	54	F	8	Urticaria	None	<0.10	0	None
	2	46	F	9	Urticaria	None	<0.10	0	None
	3	43	M	9	Hand eczema	None	<0.27	0	None
	4	22	F	10	Oral allergy	None	<0.27	0	None
	5	39	M	10	Folliculitis	None	<0.27	0	None
	6	60	M	10	Urticaria	None	<0.27	0	None
	7	58	F	10	Urticaria	None	<0.27	0	None
	8	41	M	10	Urticaria	None	<0.27	0	None
	9	36	F	10	Eczema	None	<0.27	0	None
	10	22	M	10	Urticaria	None	<0.27	0	None
	11	50	F	11	Oral allergy	None	<0.27	0	None
	12	23	F	12	Contact dermatitis	None	<0.27	0	None
	13	75	F	12	Drug eruption	None	<0.27	0	None
	14	40	F	1	Urticaria	None	<0.27	0	None
	15	22	F	2	Urticaria	None	<0.27	0	None
	16	59	M	3	Quincke's edema	None	<0.27	0	None
Control	1	46	F	11	None	None	<0.10	0	None
	2	26	F	11	None	None	<0.10	0	None
	3	52	F	11	None	None	<0.10	0	None
	4	41	F	11	None	None	<0.10	0	None
	5	49	F	11	None	None	<0.10	0	None
	6	67	M	11	None	None	<0.10	0	None
	7	67	F	11	None	None	<0.10	0	None
	8	83	F	11	None	None	<0.10	0	None
	9	39	M	11	None	None	<0.10	0	None

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article:

Appendix S1. Patient information.

Rhabdomyolysis due to bacteremia from *Enterobacter cowanii* caused by a rose thorn prick

Dear Editor,

Rose bush thorns can be dangerous to human health. Fungal diseases, such as sporotrichosis,¹ are well-known complications following rose thorn prick; although bacterial infections are rare. Here, we describe a rare case of rhabdomyolysis due to bacteremia from *Enterobacter cowanii* preceded by a rose thorn prick. To our knowledge, this is the first report of *E. cowanii*-induced rhabdomyolysis.

A 52-year-old man, apparently healthy except for obesity and fatty liver, visited our emergency room. His heel had been

pricked by a rose thorn while gardening at home (day 0), and the next day (day 1) he had a high fever (39.3°C) and painful foot. He was diagnosed with cellulitis and prescribed oral cephalexin (250 mg/6 h). He visited our hospital again for severe foot pain (day 2). Blood cultures were taken, and he was prescribed further oral cephalexin. However, on day 3, he was no longer able to walk unassisted due to severe general myalgia, so visited our dermatology department. His C-reactive protein (CRP) and cytokeratin (CK) serum levels were elevated to 12.0 mg/dL and 1359 U/L, respectively. His urinary occult

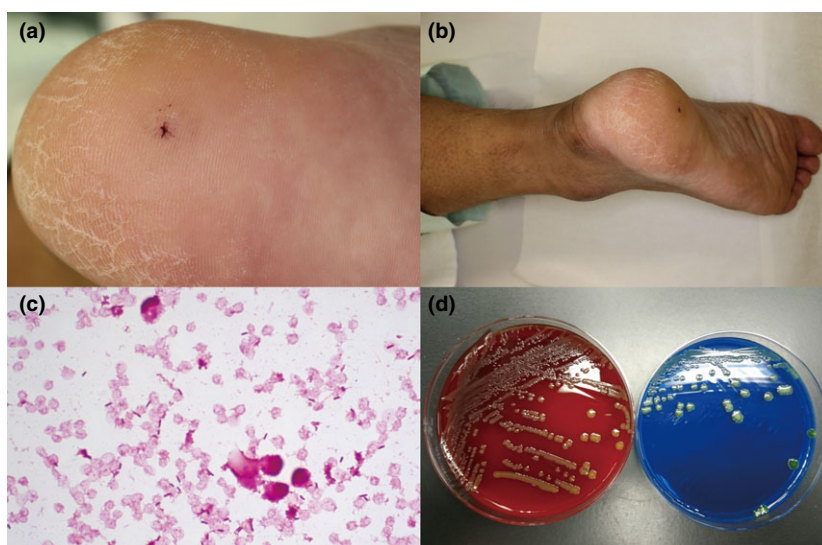


Figure 1. Clinical manifestations of the patient (day 3). (a) The prick wound on the heel. (b) Mild swelling of the calf despite high fever. (c) Strain of Gram-negative rods from blood culture (Gram stain, original magnification $\times 1000$). (d) Blood culture growth. Left (red), blood agar; right (blue), Drigalski lactose agar.

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Supporting Information

The average age of patients was 43.1 in Suzuka region and 71.8 in Ise-Shima region. All patients visited the dermatology division in each regional hospital with several complains. The main complaints in Suzuka region were urticaria including quinke's edema, but the patients in Ise-Shima region consulted dermatologist for several reasons.