

Tick bite—Erythema migrans

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A 74-year-old Japanese woman on chronic hemodialysis due to diabetic nephropathy presented to emergency room, complaining of itchiness on the right upper chest and fever. The patient reported that she had an outdoor activity in the local mountain 1 day prior to the presentation. On examination, the patient was alert and oriented, her respiratory rate was 12 breaths per minute, her heart rate was 76 beats per minute, her blood pressure was 117/76 mm Hg, she was saturating at 99% on room air, and her body temperature was 37.2°C. Notable examination findings included round-shaped, slightly raised, erythematous skin lesion on the right chest, penetrated by the head of *Ixodes ovatus* (Figure 1), and regional lymphadenopathy in the right axilla. Heart sounds were dual with no murmurs, and her abdomen was nontender. There was no purpura on the lower extremities, and no abnormal neurological finding was noted. Laboratory findings

showed a normal platelet count and no coagulopathy. A clinical diagnosis of *I. ovatus* tick bite with erythema migrans was made. The tick was removed by forceps, and the skin was disinfected. The patient was treated with supportively without antimicrobials. One month after the removal of the tick, she did not develop encephalitis, and the skin lesion disappeared (Figure 2).

Erythema migrans is the most common skin manifestation of tick-borne diseases, characterized by flat to slightly raised, erythematous skin lesion on the thigh, back, shoulder, and calf. Erythema migrans can be asymptomatic, but can be painful or pruritic, and sometimes tender. A punctum, the bite mark from the preceding tick bite, can be found around the center of the lesion.¹

Ixodes ovatus is the vector of tick-borne encephalitis (TBE) virus, a member of *Flavivirus*, and potentially causes fatal encephalitis in



FIGURE 1 The penetration of the head of *Ixodes ovatus* on the right upper chest



FIGURE 2 Disappearance of erythema migrans after the removal of *Ixodes ovatus*

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Asia and Europe.²⁻⁴ The incubation period is reported to be 7 to 14 days, and the disease initially presents with fever, malaise, and arthralgia. Neurological syndromes, including febrile headache, aseptic meningitis, and meningoencephalitis, are occasionally followed.¹ The case fatality has been reported to 8 percent.⁵ The treatment is mainly supportive because there is no curative therapy for TBE. In 2017, TBE becomes a serious public health problem in Japan because new dead cases of TBE were reported. Physicians in endemic areas need to consider TBE virus as one of the causes of encephalitis, because early detection of the disease is required to reduce the mortality form TBE.

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CONFLICT OF INTEREST

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

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