

## Erythema Chronicum Migrans

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To my knowledge, this is the first case of erythema chronicum migrans in the United States. Eruption and radicular pain followed a wood tick bite. Treatment with benzathine penicillin G (Bicillin) was curative.

A MIGRATING erythema with systemic symptoms resulting from a tick bite is unusual in the United States. Our knowledge of this curious condition comes from European reports. This toxic, circinate skin eruption advances peripherally and is occasionally associated with neurological symptoms. The cause is uncertain. However, some believe it to be an infectious agent, perhaps a spiro-

chete or rickettsia, possessing allergenic properties.<sup>1,2</sup> Ticks transmit the disease although other arthropods may be vectors.<sup>3,4</sup> It is not known whether the neurological manifestations are infectious, toxic, or allergic. The purpose of this communication is to reawaken interest in this obscure but classical condition, known for over half a century, which is now readily curable.<sup>5</sup>

### Report of a Case

In January 1969 a 67-year-old physician had chronic erythema of the right side of the torso which was unresponsive to flurandrenolide (Cordran). A recent hospitalization failed to reveal any cause for his complaints of headache, malaise, and dull pain radiating over the right hip. Periodic, low-grade fever accompanied the progression of the skin eruption.

An annular area of edema and erythema was present, extending from the mid-chest to mid-back and encircling the right axilla and iliac crest. The dermatomes innervated by T-12 and L-1 were hyperesthetic. Above the iliac crest there was a tender, punctate area of redness and induration. The patient stated this was the site of a wood tick bite sustained three months previously while grouse hunting in north central Wisconsin (Medford). He recalled that after removing the tick from the skin, a nickel-sized welt appeared at the bite site. It slowly spread peripherally, cleared centrally, and culminated in the large circular area now present. A morbilliform eruption of the upper part of the torso appeared shortly after the bite, but vanished within one week while the patient took a combination antihistamine decongestant (chlorpheniramine maleate, phenylpropanolamine hydrochloride, and isopropamide iodide [Ornade]). It has not recurred.



Fig 1.—Low-power view of tick bite. Epidermis is unremarkable. Mixed leukocytic dermal infiltrate. No tick parts are identified. Bacteria not demonstrated (x 4).



Fig 2.—Higher-power magnification of tick bite. Lymphocytic and plasma cell periductal infiltrate is shown. Tissues about inflammation are slightly edematous (x 25).

The bite site was biopsied, and, surprisingly, all symptoms subsided for 24 hours only to return with increased intensity.

The histological changes showed a dermal leukocytic infiltrate arranged about the appendages. The tissues surrounding the infiltrate were slightly edematous. Foreign material was not seen. Spirochetes were not demonstrated with silver stains (Fig 1 and 2).

Lipoprotein electrophoresis showed a type IV pre- $\beta$  hypertriglyceridemia. Electrocardiogram and roentgenogram of the chest were normal. Normal values were found for the following: complete blood cell count, differential cell count, serum electrolytes, carbon dioxide, fasting blood sugar, protein bound iodine, creatinine, blood urea nitrogen, bilirubin, cholesterol, lactic dehydrogenase isoenzymes, calcium, phosphorus, serum transaminase, total serum proteins, albumin, and the venereal disease research laboratory test for syphilis. The *Proteus* OX<sub>19</sub> (serologic) test was negative.

Treatment consisted of the administration of 1.2 million units of benzathine penicillin G (Bicillin) intramuscularly. The patient became symptom-free within 48 hours. There has been no recurrence of symptoms for the past year.

### Comment

Although specific organisms could not be incriminated, the patients' clinical course and response to therapy suggest that erythema chronicum migrans is a low-grade infection. Why it so rarely complicates so common an occurrence as arthropod bites remains an enigma. A search of the American literature failed to uncover a similar case in the United States.

### References

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