

Rash and Fever in a College Student

IGOR MELNYCHUK, MD, and WENDY BUSBY, MD, FRACP, *University of Otago, Dunedin School of Medicine, Dunedin, New Zealand*

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Figure 1.



Figure 2.

A 21-year-old female college student presented to the hospital with rash and high fever. Severe arthralgias and a nonpruritic rash appeared on her lower extremities (*Figure 1*) shortly after the pharyngitis developed. The rash migrated to her chest and head (*Figure 2*) a few days later.

Question

Based on the patient's history and physical examination, which one of the following is the most likely diagnosis?

- A. Disseminated tinea corporis.
- B. Erythema marginatum.
- C. Erythema migrans.
- D. Erythema multiforme.
- E. Erythema nodosum.

See the following page for discussion.

Discussion

The correct answer is B: erythema marginatum. Erythema marginatum is an evanescent, nonpruritic rash that typically occurs on the trunk and extremities, but does not usually affect the face.¹ The patient’s throat culture was positive for *Streptococcus pyogenes*, and her antistreptolysin O titers were elevated. The rash and arthralgias resolved within a few days of treatment with high-dose aspirin and penicillin.

Erythema marginatum occurs in patients who have rheumatic fever, and it is a major part of the Jones criteria for the diagnosis of rheumatic fever. Rheumatic fever can cause rheumatic heart disease and requires prompt diagnosis and treatment.²

Tinea corporis (ringworm) does not disseminate and is not associated with any systemic signs of infection. The rash typically has a fine scale and may cause

alopecia. Lesions have central clearing and slightly raised borders, and are often pruritic.

Erythema migrans has a bull’s-eye appearance and is a sign of Lyme disease. Like erythema marginatum, erythema migrans lesions have central clearing, but usually expand rather than migrate. Erythema migrans lesions typically have central erythema and necrosis.

Erythema multiforme is a maculopapular rash that is usually located on the palms and feet, although it can have generalized spreading. It can result from a drug reaction (e.g., sulfa, phenytoin [Dilantin], penicillins) or from viral and bacterial infections. Erythema multiforme can have a bull’s-eye appearance, but it is usually pruritic and blanches away slowly.

Erythema nodosum leads to erythematous macules that are often painful. The rash most commonly occurs on the shins. There is usually no central clearing.

Address correspondence to Igor Melnychuk, MD, at idclinicjax@gmail.com. Reprints are not available from the authors.

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Summary Table

Condition	Characteristics
Tinea corporis	Ringworm lesions with central clearing and slightly raised borders; often pruritic
Erythema marginatum	Evanescient, nonpruritic rash usually on the trunk and extremities; occurs with rheumatic fever
Erythema migrans	Bull’s-eye appearance; central erythema and necrosis; expands rather than migrates
Erythema multiforme	Maculopapular rash usually on the palms and feet; often pruritic and blanches away slowly
Erythema nodosum	Erythematous macules usually on the shins; no central clearing; often painful

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