

# Painful, swollen lower legs

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A 25-year-old female came to the clinic reporting a 1-day history of painful red nodules on her lower legs. She also said that her lower legs felt swollen (**Figure 1**). She had just started taking mefloquine 2 days before, for malaria prophylaxis prior to anticipated travel with the United States military. She had been seen in the clinic about 1 week before for fever and general joint aches, and she was diagnosed with a probable viral syndrome from which she had completely recovered. She reported no other symptoms.

She started taking sertraline for depression several weeks prior to the onset of her symptoms. She was taking no other medications and had no other medical or surgical history.

Although she had been in the Horn of Africa region, she had not gone ashore before the onset of her symptoms. She had also not

traveled recently to any other foreign country.

Upon examination, the patient had tender erythematous nodular areas of varying sizes and irregular borders on both shins (**Figure 2**). The lesions had no scales or other noteworthy epidermal changes. Her calves and ankles were symmetrically swollen, though without pitting edema. The rest of her examination was unremarkable. The patient was on active duty and had received a variety of immunizations and screening testing in the preceding 12 months, including recent human immunodeficiency virus and tuberculosis testing, which proved negative.

## ■ WHAT IS THE DIAGNOSIS?

## WHAT ARE THE MANAGEMENT OPTIONS?

**FIGURE 1** Swollen lower legs



*The patient's calves and ankles, symmetrically swollen and covered with erythematous lesions.*

**FIGURE 2** Erythematous nodules



*The nodular areas in her skin were irregular in size and shape, and without pitting or scale.*

## ■ DIAGNOSIS: ERYTHEMA NODOSUM, A HYPERSENSITIVITY REACTION

The patient's presentation and clinical findings suggest erythema nodosum. Erythema nodosum is one of several hypersensitivity syndromes. It is likely a delayed hypersensitivity reaction and may be triggered by a number of antigens.

Painful, erythematous nodules on both shins are characteristic of erythema nodosum, though similar lesions occur on other extensor surfaces.<sup>1</sup> *Panniculitis* is often used to describe this condition, as pathologic evaluation demonstrates inflammation within the subcutaneous fat.

The nodules generally resolve over several weeks with possible desquamation on the lesion's surface. Patients may have a prodrome of fever, arthralgias, and often symptoms of an upper respiratory infection occurring 2 to 8 weeks before the eruptive phase.<sup>1,2</sup>

Erythema nodosum may occur as a result of bacterial and fungal infections. Many medications have also been known to cause erythema nodosum, with sulfa drugs and oral contraceptives among the most common. The condition may also herald systemic disease, such as sarcoidosis or inflammatory bowel disease.

The photographs show the characteristic erythematous eruptive phase in its early stage. The lesions progress from tender erythematous areas with a nodular texture to become yellowish-purple and bruise-like. The lesions generally resolve over several weeks.

Approximately 50% of cases are idiopathic. Erythema nodosum can affect persons at any

age but appears most often in those in their twenties and thirties. It affects women 3 to 6 times more frequently than men.<sup>1,2</sup>

## ■ DIFFERENTIAL DIAGNOSIS AND LABORATORY INVESTIGATIONS

The differential diagnosis includes erythema multiforme, Hodgkin's disease, Sweet's syndrome, tuberculosis, sarcoidosis, and streptococcal infection.<sup>1,2</sup>

Erythema multiforme most often forms a characteristic target lesion. It can also present as an urticarial lesion or in a vesicubullous form. While patients with a history of Hodgkin's disease may exhibit erythema nodosum heralding an impending relapse, it is not generally a sign of primary disease.

Sweet's syndrome (acute febrile neutrophilic dermatosis) is a reactive disorder generally considered to be a dermatologic manifestation of a systemic disease. In many cases an underlying systemic disease is discovered, such as myelodysplastic syndrome, nonlymphocytic leukemia, or inflammatory bowel disease. The mean age at presentation is about 56 years, with lesions well demarcated and more widespread than those of erythema nodosum.

Tuberculosis and streptococcal infections are 2 of the most common causes of erythema nodosum in children. In adults, erythema nodosum may result from streptococcal infection or sarcoidosis. Tuberculin skin testing, chest radiography, throat culture/rapid streptococcal antigen testing, and an anti-streptolysin O titer should be included in a patient's evaluation.

## ■ SUBMITTING IMAGES TO PHOTO ROUNDS

Do you have images (slides, prints, digitized photos) of compelling clinical cases of interest to family physicians? We would like to publish them, along with a brief description of the clinical presentation and a diagnostic question for readers. The case should include information on the differential diagnosis and treatment, the latter applying an evidence-based approach supported by current references. Submit electronic files to [usatine@uthscsa.edu](mailto:usatine@uthscsa.edu), or send high-quality slides and prints to:

**Richard P. Usatine, MD, Editor, Photo Rounds, University of Texas Health Science Center at San Antonio, Department of Family and Community Medicine, MC 7794, 7703 Floyd Curl Drive, San Antonio, TX 78229-3900.**

## ■ TREATMENT: DISEASE IS SELF-LIMITED

Erythema nodosum is usually a self-limited disease. It may help to remove the offending medicine or allergen, if identified. Nonsteroidal anti-inflammatory drugs (NSAIDs) usually relieve symptoms.

In more severe or recurrent cases, potassium iodide 360–900 mg/d may be helpful, but the best effect is seen when it is used early in the course of the condition (level of evidence: 4).<sup>3</sup>

Systemic corticosteroids may help in the short term, but erythema nodosum may recur after discontinuing the medication. In addition, if there is an infectious cause, the use of corticosteroids may exacerbate the infection.

## ■ CONCLUSION: PAIN AND SWELLING RESOLVED

The patient began taking ibuprofen prior to the office visit and had achieved good pain control. This treatment was continued and the patient's nodules resolved after approximately 4 weeks. Her leg swelling resolved 2 to 3 weeks after the clearance of her nodules. She resumed both the sertraline and mefloquine without problems.

### REFERENCES

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# THE JOURNAL OF FAMILY PRACTICE

## Evidence-based medicine terms

THE JOURNAL OF FAMILY PRACTICE uses a simplified rating system derived from the Oxford Centre for Evidence-based Medicine. More detailed definitions may be found at its website: [http://www.cebm.net/levels\\_of\\_evidence.asp](http://www.cebm.net/levels_of_evidence.asp).

**Level of Evidence** characterizes the validity of a study while making no specific practice recommendation

- 1a Systematic review of randomized controlled trials
- 1b Individual randomized controlled trial with narrow confidence interval
- 1c All or none—all patients died before therapy was available, but now some survive; or, some patients died before therapy was available, but now all survive
- 2a Systematic review of cohort studies
- 2b Individual cohort study, or low-quality randomized controlled trial
- 2c “Outcomes” research
- 3a Systematic review of case-control studies
- 3b Individual case-control study
- 4 Case series, or poor quality cohort or case-control studies
- 5 Expert opinion

**Strength of Recommendation** translates a given level of evidence into a practice recommendation

- A Includes 1a–c levels of evidence
- B Includes levels 2a–c and 3a, b
- C Includes levels 4 and 5

Strength-of-recommendation ratings do not always reflect a direct one-to-one correspondence with levels of evidence, as depicted above, but may take into account such variables as intervention cost, ease of use, and impact of the disease in the population.