Diagnosing Cellulitis for the Nondermatologist

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KEYWORDS

• Cellulitis • Erysipelas • Stasis dermatitis • Lipodermatosclerosis • Lymphedema • Pretibial myxedema • Contact dermatitis

HOSPITAL MEDICINE CLINICS CHECKLIST

1. Cellulitis is a form of soft-tissue infection involving the deep dermis and hypodermis.
2. Clinically, cellulitis presents with ill-defined, nonpalpable and painful erythema, warmth and edema, as well nonspecific systemic complaints including fever, chills, and malaise.
3. The incidence of lower extremity cellulitis is about 199 per 100,000 patient-years.
4. Group A streptococci and *Staphylococcus aureus* are the most common pathogens in adults.
5. Systemic and local predisposing factors have been implicated in the development of cellulitis.
6. The most important step in the evaluation of presumed cellulitis is exclusion of life-threatening necrotizing soft-tissue infection.
7. Multiple skin conditions may resemble cellulitis, but a thorough history and physical examination should narrow the differential diagnosis.
8. Unlike some of its mimics, skin changes of cellulitis are fixed and independent of gravity, hence elevation of the leg may aid in the diagnosis.
9. Visual recognition alone is often sufficient to establish the diagnosis; therefore, the value of ancillary testing (laboratory evaluation and cultures) is limited in immunocompetent adults.
10. Management includes nonpharmacologic measures and antibiotics directed against the most likely causative organisms.
11. Antibiotic prophylaxis is indicated in selected cases.
12. Dermatologists should be consulted is if there is no improvement 48 hours after institution of treatment.

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BACKGROUND

Cellulitis is frequently overdiagnosed, leading to inappropriate use of antibiotics. It is estimated that misdiagnosis occurs in 10% to 30% of patients, mostly in the inpatient setting.[1,2] Dermatologists can assist with the diagnosis, but are usually brought on board after patients have been admitted and/or treatment has been initiated. With rising health care costs and concerns about antibiotic stewardship, physicians should aim at improving their clinical acumen to deliver excellent patient care while minimizing unnecessary diagnostic tests, hospitalizations, and expensive treatments. The list of cellulitis mimickers is extensive. However, there are a handful of relatively common conditions that nondermatologists should be able to recognize.

DEFINITIONS

1. How is cellulitis defined and what are the major clinical features?

Cellulitis is a form of soft-tissue infection primarily affecting the deep dermis and subcutaneous tissues. The clinical correlate is the presence of ill-defined and usually nonpalpable erythema (redness), warmth, edema, and tenderness (**Fig. 1**). When the process is confined to the papillary dermis and superficial lymphatics, the condition is referred to as erysipelas. The latter classically presents with sharply demarcated, ridge-like borders and bright-red erythema (**Figs. 2** and **3**). Both conditions, unlike many of their mimics, are preceded by prodromal symptoms such as fever, chills, fatigue, and gastrointestinal complaints. **Table 1** summarizes the main features of these 2 entities.

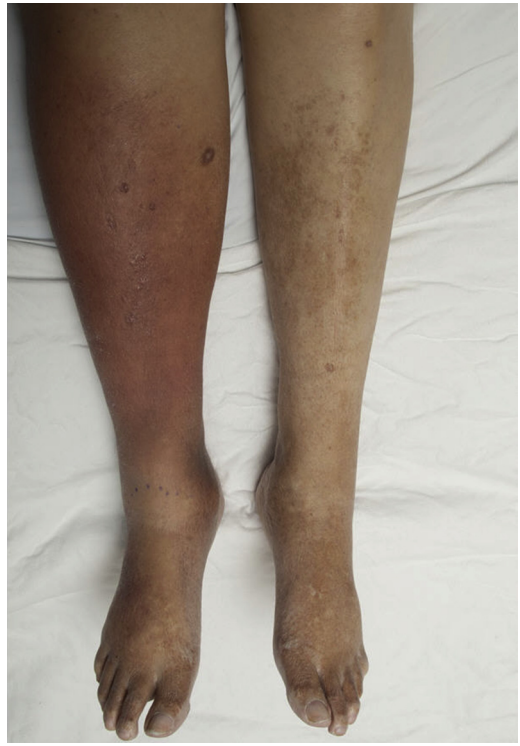

Fig. 1. Cellulitis affecting the right lower extremity. Note ill-delineated erythema and edema as well as microvesicles on the anterior leg.