

# Photo Quiz

## Chronic, Nonhealing Wound

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**An 81-year-old man** presented with a wound on his right lower extremity that occurred three years ago. It was initially the size of a quarter and slowly enlarged. He also reported burning pain in the affected leg but did not have fever or chills. He did not recall any trauma or injury to the area. The patient had a history of chronic venous insufficiency, essential hypertension, and aortic stenosis.

On physical examination, the wound measured 13 cm × 8.5 cm and was located just above the medial malleolus with proximal extension (*Figure 1*). Surrounding erythema was present with 1+ pitting edema to the upper one-third of the anterior shin. There was no loss of hair on the distal leg. The dorsalis pedis and posterior tibial pulses were intact in the right foot.

FIGURE 1



### Question

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

- ☐ A. Arterial insufficiency ulcer.
- ☐ B. Cellulitis.
- ☐ C. Contact dermatitis.
- ☐ D. Stasis dermatitis with ulceration.

See the following page for discussion.

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## SUMMARY TABLE

Condition	Characteristics
Arterial insufficiency ulcer	Deep, round, or punched-out lesions with sharply demarcated borders and yellow, necrotic bases; located around the lateral malleolus, pretibial area, or dorsum of foot and toes
Cellulitis	Expanding erythema, warmth, tenderness, and swelling
Contact dermatitis	Inflammatory skin response to an allergen, chemical, or other agent; localized erythema, edema, vesicles, bullae, and oozing
Stasis dermatitis with ulceration	Shallow, irregularly shaped, painful ulcers with granulation tissue and fibrin; located over the medial malleolus

## Discussion

The answer is D: stasis dermatitis with ulceration. Venous ulcers are the most common type of chronic wound. Stasis dermatitis with ulceration is an advanced presentation of chronic venous disease. Venous stasis ulcers are a result of underlying venous hypertension from several mechanisms, including incompetence of deep or superficial veins, venous obstruction, and muscle pump dysfunction. Valve dysfunction most often occurs following deep venous thrombosis.<sup>1</sup> Skin ulceration is associated with pain, limb heaviness, and limited ambulation.<sup>2</sup>

Stasis dermatitis most commonly occurs in older patients. An estimated 2 million to 6 million people in the United States have advanced forms of chronic venous insufficiency, and approximately 500,000 have venous ulcers.<sup>3</sup> Primary risk factors for venous disease include advanced age, female sex, family history of leg ulcers, obesity, non-Hispanic White race, previous traumatic leg injuries, history of deep venous thrombosis, chronic lower extremity edema, sedentary lifestyle, and an occupation requiring long periods of standing.<sup>4</sup>

Ulcers secondary to venous insufficiency are typically diagnosed clinically. Clinical features include shallow, irregularly shaped, painful ulcers located over bony prominences, particularly the medial malleolus, with granulation tissue and fibrin. Edema and surrounding venous dermatitis are associated findings.<sup>3</sup> Edema from chronic venous insufficiency is dependent and usually pitting.<sup>1</sup> It is important to assess the arterial system, including palpation of pulses

and foot temperature.<sup>4</sup> When additional testing is required, venous duplex imaging is the most common technique to confirm the diagnosis of venous insufficiency, assess underlying anatomy, and evaluate severity of disease.<sup>1</sup>

Chronic wounds should be treated according to the TIME principle: tissue debridement, infection control, moisture balance, and edges of the wound. Treatment options for venous wounds include exercise to lower venous pressure, elevation, and compression to improve venous return. Statin therapy may be beneficial for its vasoactive and anti-inflammatory effects.<sup>5</sup>

Arterial insufficiency ulcers are deep, round, or punched-out lesions with sharply demarcated borders and yellow, necrotic bases. Physical examination reveals diminished or absent pedal pulses and cool limbs. Arterial ulcers are often located around the lateral malleolus, pretibial area, or dorsum of the foot and toes.<sup>6</sup>

Cellulitis is an infection of the deep dermis and subcutaneous tissues. It presents with expanding erythema, warmth, tenderness, and swelling. Systemic findings such as fever may be present. Cellulitis should improve with antibiotics.<sup>3</sup>

Contact dermatitis is an inflammatory skin response to an allergen, chemical, or other agent. Clinical features include erythema, edema, vesicles, bullae, and oozing. The reaction is localized to the area of contact. A history of exposure to new products can help distinguish contact dermatitis from stasis dermatitis.<sup>3</sup>

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