The patient, a 62-year-old female, referred to our clinic due to a severe painless swelling on her lower lip. The lesion had been started as an edematous pruritic papule on her lower lip since five days ago due to which she was hospitalized by a local physician and empirically treated with antimicrobial agents. She was referred to our clinic, since edema had progressed despite treatment. On physical examination, she was febrile but nontoxic. Cutaneous examination revealed a 1×1 cm ulcer on the lower lip covered by a black scar and surrounded by erythema, edema, and tense vesiculation. Diffuse gelatinous edema was present on the entire lower lip and chin (Figures 1 and 2), but no tenderness or increased warmth was noticed in the lesion. Her systemic examination was unremarkable. A gram-stained smear and culture of the ulcer exudates was done that yielded negative results and her blood culture was sterile. Complete blood count and blood biochemistry tests were normal except for a neutrophilic leukocytosis. In past medical history, she mentioned contact with animal products. Treatment with intravenous penicillin G was begun. Fever and edema subsided in two days. She was discharged with oral penicillin for ten days. A few weeks later, she only had an insignificant scar on her lower lip (Figure 3).

What is Your Diagnosis?

See pages 325 – 326 for diagnosis
Cutaneous lesions that may mimic this presentation include anthrax, staphylococcal infections, plague, and tularemia. However, these diseases seldom lead to the severe skin necrosis seen in a patient with anthrax.\(^1\) Anthrax is an acute infectious disease caused by *Bacillus (B) anthracis*, a gram-positive aerobic, spore-forming micro-organism. The term anthrax derives from the Greek word for coal, and refers to the black skin lesion typically found in cutaneous anthrax.\(^2\) It can survive in soil and animal products for years, which is an important factor in the spread of disease. It is a zoonotic disease, endemic in tropical countries, parts of South America, and Europe where conditions favor an animal-soil-animal cycle.\(^3\) Humans are incidental hosts and disease is transmitted to humans from infected animals by direct contact with animal products.\(^4\)

Anthrax in humans occurs in three principal clinical forms: cutaneous (due to direct contact with contaminated meat, carcases, or animal products like hides, hair, wool, bone meal, and animal feeds), inhalation (due to inhalation of spores and wool sorters disease), and gastrointestinal (due to ingestion of contaminated meat or milk).\(^3\) Cutaneous anthrax is the most common natural form of anthrax infection in humans.\(^2\) The majority of cases are seen on hands and face, where exposure is more likely.\(^5\) It occurs following exposure to infected animals, grazing on contaminated land or exposure to contaminated animal products, such as hides and wool. Involvement of lip is very rare, but in endemic regions, such as India, has been reported.\(^6\) Diagnosis of cutaneous anthrax may be clinically achieved in patients with a proper history and physical examination findings because clinical presentation of cutaneous anthrax is so characteristic that the diagnosis is usually not missed.\(^3\) It should be suspected when an individual describes a painless, pruritic papule usually on an exposed part of the body. In cutaneous anthrax, a painless papule appears one to 12 days after spores infect the skin through lacerations or abrasions. During the next one to two days, a vesicle containing *B. anthracis* microorganisms develops, characteristically surrounded by prominent edema. Later, the vesicle ruptures and forms an ulcer, covered with a black scar, and the lesion enlarges. If secondary bacterial infection occurs, however, the lesion may remain as a purulent ulcer which does not evolve into a black scar. Tissue edema may significantly increase if the lesion is located in facial or cervical areas, and regional lymphadenopathy may be present. A low-grade fever and malaise are usual symptoms. Approximately two weeks later, the lesion heals and the scar falls off, commonly leaving no significant scarring; however, bacteremia, followed by septic shock, may be a complication.\(^2,4,5\) A definite diagnosis may be made through isolating *B. anthracis* in lesion cultures and the demonstration of gram-positive rods in gram stains.\(^1\) Cultures taken from the lesions of patients treated with penicillin become negative within a few hours after the initiation of the therapy.\(^7\) Medical treatment is recommended for various forms of anthrax, which should follow available guidelines regarding the patient's age and clinical status. Initial treatment should be changed based on the patient's susceptibility results or the clinical course. Blood cultures should be obtained before antibiotic treatment is started, and a consultation with an infectious disease specialist is suggested. Cutaneous anthrax ultimately requires intensive antibiotic treatment. Use of appropriate antibiotics does not shorten the course of cutaneous anthrax, but prevents progression to a systemic illness. With antibiotic treatment, mortality decreases dramatically to approximately 1%; mortality without antibiotic treatment is estimated at 5% to 20%.\(^2\) Penicillin is still the antibiotic of choice for the treatment of anthrax.\(^8\)

**References**

5. Kadanali A, Tasyaran MA, Kadanali S. Anthrax during...

