Erysipelas in the elderly: Are the concerns and economic burden increasing? Apropos of a case

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KEY WORDS

blistering disease, elderly, erysipelas, skin infections

ABSTRACT

Blistering erysipelas has been reported only rarely and may be under-diagnosed. Very often, patients presenting with erysipelas are treated by non-dermatologist primary physicians. The current growth in the elderly population may increase the economic burden resulting from this disease. Therefore, case reports highlighting possible misdiagnoses of erysipelas can contribute to greater awareness among primary care professionals and lead to earlier diagnosis and prompt treatment. This description seeks to emphasize the main risk factors and predisposing factors, in addition to some atypical features and current challenges involved in the differential diagnosis for erysipelas.

Introduction

Erysipelas is a prevalent infection among the elderly and children that affects the dermis and the hypodermis. It is usually caused by group A streptococci, but may also be associated with the B, C, or G groups, and dermatomycosis constitutes a very common portal of entry (1). Historically, erysipelas was called Saint Anthony's fire, and it was often mistaken for ergotism. Nowadays, its differential diagnosis involves diverse infectious and inflammatory conditions (2, 3) and malignancies (4, 5). Uncommon entities have been included in cases of erysipelas affecting individuals that live or travel in developing areas (6, 7). The most frequent site in adults is on the legs, usually unilaterally. The classic criteria for the diagnosis of erysipelas include: a) an elevated and well-delimited skin inflammation; b) an abrupt beginning with fever and chilling; c) a unilateral site, mainly in a lower limb; d) the presence of risk factors (portal of entry, lymphedema, diabetes, venous insufficiency, etc.); and e) high antistreptolysin O titers, in up to 40% of cases (1). The more frequent complications of erysipelas include necrotizing fasciitis, abscesses, thromboses, glomerulonephritis, endocarditis, gangrene, and sepsis; in addition, the disease may be recurrent in some individuals in spite of receiving antibiotic prophylaxis (1, 3, 8, 9). Systematized data about the frequency of erysipelas as well as the current cost-benefit ratio of treatment are lacking in developing countries; moreover, published consensual criteria for hospitalization of these patients are scant (3, 8). The purpose of this report is to present a classic case of blistering erysipelas in an elderly patient

that was initially misinterpreted as a digestive infection. Before the appearance of skin lesions, the patient claimed nausea, vomiting, high fever, and chills: these are systemic symptoms that play a role in the diagnostic pitfalls during the early phase of erysipelas. Additional concerns about the differential diagnosis of the cutaneous features are discussed.

Case report

A 71-year-old Brazilian male first presented with nausea, vomiting, and fever with chills. Two days later, these preliminary complaints were followed by intense pain and signs of inflammation in the left leg, and he was admitted to the hospital. There was an antecedent of arterial hypertension and a left saphenectomy 5 years ago. He denied diabetes mellitus, alcoholism, and tobacco use. The physical examination disclosed a BMI of 26.5 kg/m^2. The extensive skin lesion was erythematous, hot and well demarcated, with vesicles and lymphedema, and ulceration was found in the lateral aspect of the left leg (Figs. 1A and 1B). Worthy of note, conspicuous plantar fissures were also observed, in addition to onychodystrophy and intertrigo in the interdigital spaces of the left foot (Figs. 1C and 1D), findings that strongly suggested the diagnosis of erysipelas. The most remarkable laboratory data were elevated white blood cells at 8512/mm^3, an ESR of 84 mm/hour, C-reactive protein (CRP) of 10.2 mg/dl, and ASLO of 1500 IU/ml. Moreover, the interdigital biopsy revealed hyaline branched and septated hyphae and arthroconidia (dermatophytes), whereas both microbiology studies from the skin samples and from the contents of the ulceration were all negative. The echo-Doppler study of the lower extremities confirmed the previous left saphenectomy; in addition, the imaging was useful to rule out the preliminary hypothesis of concomitant deep venous thrombosis in the leg vessels. The patient was treated with penicillin G (4 million units IV q6h) and clindamycin (600 mg IV q8h) for 10 days, in addition to local treatment of the blistering erysipelas. Thereafter, the lesions gradually improved (Figs. 1E and 1F), and he was discharged to home 12 days after admission. During outpatient follow-up, he received prophylactic doses of benzathine penicillin (2.4 million units, intramuscularly) every 3 weeks for 1 year. Currently, 2 years after hospital discharge, he is enjoying good health and there has been no recurrence of erysipelas.

Discussion

This overweight elderly male with arterial hypertension and previous saphenectomy presented with blistering erysipelas. He showed plantar fissures, intertrigo, and ulcerative lesions. There was neutrophil-

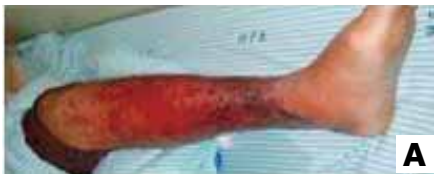


Figure 1A. Classic signs of erysipelas before antibiotic treatment.

Figure 1B. Left leg blistering and ulceration in detail.

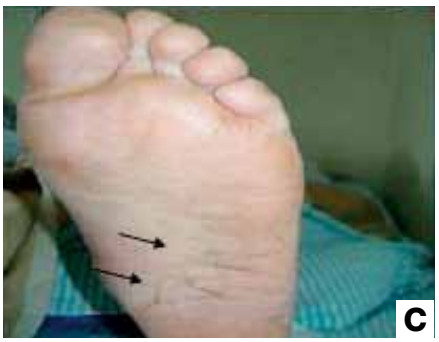


Figure 1C. Marked plantar fissures (arrows).

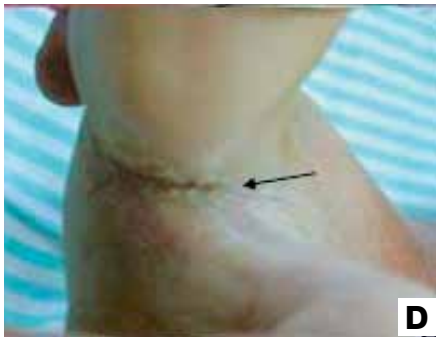
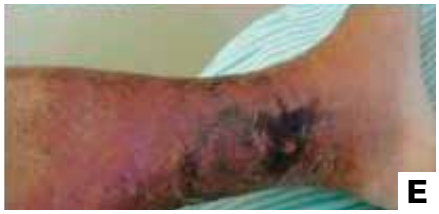


Figure 1D. Characteristic lesions of foot intertrigo (arrow).



Figures 1E and 1F. Aspect of the inflammatory lesions after 10 days of antibiotic therapy.

ia, elevated ESR and CRP, and high antistreptolysin O titers (1).

Beta-lactam antibiotics constitute the first choice in treating cases of uncomplicated erysipelas.

Non-allergic patients are usually treated with oral penicillin or benzathine penicillin (3), and penicillin-allergic people may be treated with erythromycin or clindamycin as an alternative (1, 8, 10). A possible concern in this case regarded the antimicrobial schedule initiated at the Emergency Service prior to transfer of the patient to the Internal Medicine ward. In fact, the concurrent evidence of blistering, ulceration (10), and lymphedema in an elderly man with chronic venous insufficiency enhanced the awareness about co-infections and complications (8), and the use of clindamycin plus penicillin therapy seemed justified (1, 8, 10). Notwithstanding, there is major concern about the role played by the use of this wide spectrum of antibiotics on the eventual development of drug resistance, which is a significant worldwide burden. Following the conspicuous improvement of the lesions (10) and the negative results of the histopathology studies and cultures for microorganisms (3, 10), the intravenous antibiotic therapy was stopped on day 10 (3). Because parenteral antibiotics were needed, the patient remained hospitalized for 12 days, which corresponds to Brazilian descriptions of this condition (9.9 ± 5.9 days); complications did not occur (8). Hypodermitis due to chronic venous insufficiency associated with saphenectomy could have been a concern (11); however, the clinical features and echo-Doppler imaging ruled out this possibility. The clinical and complementary data contributed to the differential diagnosis with non-infectious conditions, and with infections by other bacteria, mycobacteria, fungi, or protozoa. Blistering erysipelas is not a rare entity and can represent a potentially dangerous risk (3, 10); however, it may be considered an under-recognized disease and seems to be under-reported, mainly among individuals that are managed as outpatients in developing countries (10). Erysipelas affects individuals belonging to diverse racial and socioeconomic groups equally. Only 7% of people affected with erysipelas are hospitalized in Holland, and the hospital costs correspond to 83% of the total treatment expenses (12), whereas German and Austrian patients are usually treated as inpatients, and 10 days is the median treatment duration (13). In France, erysipelas affects 1 person/1000/year and admissions are due to co-morbidities (14). Data from the present case report are in line with those from previous Brazilian studies. Bernardes et al. performed a retrospective analysis of records from 284 adult patients with erysipelas followed in Santos-SP, Brazil, and only 8% of the cases required hospitalization. The mean age was 54 years, 55% were male, and a lower limb was affected in all cases. Venous insufficiency (56%) and saphenectomy (9%) were the main local factors; obesity (17%), arterial hypertension (14%), and diabetes mellitus (10%) were the systemic ones. Bullous necrotizing changes constitute a complication found in 5% of these individuals (15). A prospective study by Okajima et al. included 35 adult patients admitted to the same Brazilian hospital to treat erysipelas. The age range was 18 to 86 years, with 68% over 40 years of age, and 54% were female. Superficial mycosis (54%), plantar fissures, and leg ulcers (34%) were the main points of entry for the agent of erysipelas. Lymphedema (near 43%) and previous erysipelas (34%) were the main local factors; diabetes mellitus (20%) and obesity (17%) were the main systemic factors; and lower limbs were affected in 74% of cases (8). With lower prevalence, erysipelas in the upper limbs may predominate in oncology patients. Recently, Pereira de Godoy et al. studied the incidence of erysipelas and lymphangitis in 66 Brazilian patients undergoing treatment for lymphedema due to mastectomy for breast cancer. Prophylactic antibiotics were not used, and 1 patient (1.5%) had erysipelas following a hand injury (16). Chong and Thirumoorthy described data from 20 Asian patients admitted for treatment of erysipelas. The age average was near 62 years and 55% were male. The legs were affected in 75% of cases, the arms in 15%, and the face in 10%. Although some clinical features were conspicuous, such as erythema (100%), edema (85%), and vesicles or bullae (80%), many patients presented with a pain score of 0 (40%), and major systemic toxicity was absent. The main predisposing factors were skin barrier rupture (65%), lymphedema (25%), and venous insufficiency (20%). Diabetes mellitus (30%), malignancies (20%), and cardiovascular and cerebrovascular diseases (20% each) were the most frequent associated conditions in this group of patients. Blood cultures were negative, but swabs on blistering lesions showed positive cultures (67%). All patients received antibiotics for an average of 20.65 (10–41) days, in addition to local care (10). Interestingly, in contrast to the features of blistering erysipelas affecting Asian people, this patient was not diabetic, his pain score was 6.0, and systemic toxicity signs were intense, whereas the blood cultures and cultures from the punch biopsy and ulceration swab were negative. In developing areas, patients with erysipelas are often treated by non-specialists (10), who should develop higher awareness about the possible pitfalls involved in the erysipelas diagnosis. This description aims to emphasize the occurrence of initial mistakes with the diagnosis of a digestive disorder and the wide range of differential diagnosis in a case of adult erysipelas.

Non-specialists treat the majority of patients on an outpatient basis (3, 10), utilizing diverse antibiotic

regimens. Lack of consensus upon the criteria for hospitalization also remains a challenging problem that should be solved. Of note, severe cases, immunocompromised patients, and people at the extremes of age usually need hospital care (3) in order to optimize outcomes.

Although it is limited by being only one case study, this report can raise the index of suspicion of primary care workers about blistering erysipelas, which may occur either as a misdiagnosed or underreported condition.

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