Correspondence

Ecthyma gangrenosum secondary to severe invasive infection caused by *Escherichia coli*

Ecthyma gangrenosum (EG) is known as a characteristic lesion of *Pseudomonas aeruginosa* sepsis and is usually seen in immunocompromised patients.

We report a case of a previously healthy 48-year-old woman. She was first observed by her primary care physician to have fever and cough and was diagnosed with pharyngotonsillitis and prescribed an oral cephalosporin (cefditoren pivoxil). As the fever persisted, six days later she returned to our hospital. At admission, she was febrile and hemodynamically unstable, with tachycardia and hypotension. Physical examination at this stage found a necrotic ulcer in the tongue. Laboratory investigations documented severe pancytopenia with almost zero neutrophilcs and hypogammaglobulinemia, and C-reactive protein was markedly increased. Chest radiograph revealed pneumonia, and CT confirmed the diagnosis. She gradually deteriorated and was admitted to the intensive care unit with septic shock and a diagnosis of pneumonia, and empiric antibiotic therapy was initiated.

On the second day of hospitalization, multiple ecthymatous-like lesions in different stages of evolution were documented, mainly in the gluteal and perineal regions (Figs. 1 and 2). A skin biopsy with culture was performed and was compatible with EG.

Cultures were obtained from her blood, bronchoalveolar lavage, bone marrow, and from a skin lesion. All cultures grew *Escherichia coli*. Urine culture was negative. Bone marrow was hypocellular, with severe decrease of erythroid and myeloid precursors. There were no abnormal cells in the bone marrow biopsy.

She continued to deteriorate, with persistent neutropenia despite the use of growth factors and immunoglobulins. There was also progression of the pulmonary infiltrates confirmed by CT. She developed multiple organ dysfunction, and although treated with intensive therapy and appropriate antibiotic therapy, the patient died eight days after the admission. Despite all the laboratory and imaging studies, a cause for pancytopenia or *E. coli* sepsis, was not found.

Ecthyma gangrenosum is a wellrecognized but uncommon cutaneous infection, almost exclusively seen in immunosuppressed patients.[1–5] There are isolated reports of its occurrence in normal healthy subjects.[6,7] It was thought to be pathognomonic for *Pseudomonas* infection until recent years when other organisms were implicated.[1–5,7] Our patient was confirmed to have an *E. coli* sepsis.

Although there have been case reports describing occurrences in previously healthy individuals as in our case, history of bacterial or viral infection and the previous antibiotic treatment were found as risk factors for the development of EG in these patients.[1,7,8] In our patient, there was not a previous immunosuppressive condition and despite all the laboratory and imaging studies, a cause for neutropenia or *E. coli* sepsis, was not found. However, she received a cephalosporin (cefditoren

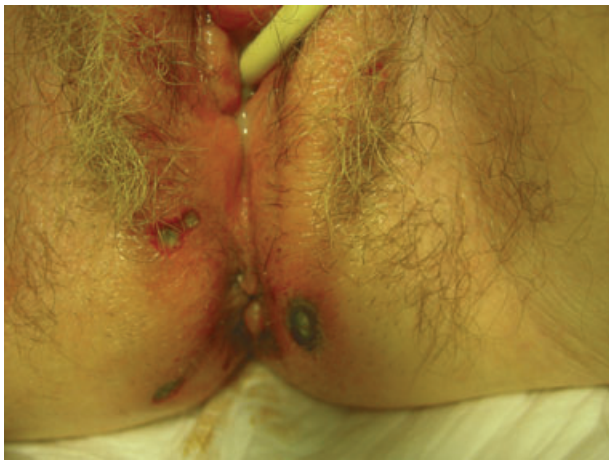

Figure 1 Ecthyma lesion

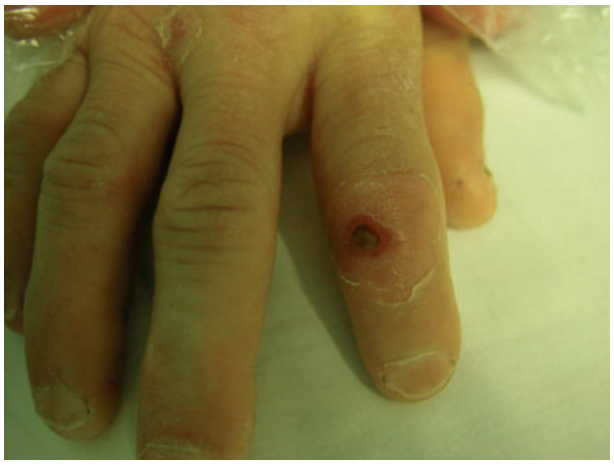

Figure 2 Ecthyma lesion

pivoxil) during the six days leading up to admission. The mechanism by which the use of antibiotics might affect the development of EG remains unclear.[4] Our patient remained neutropenic even after the use of appropriate antibiotics, immunoglobulins, and growth factors.

Although *Pseudomonas* is the main organism implicated in EG, other organisms can sometimes produce a similar clinical picture. It is important to be aware that EG can occur in the absence of immunodeficiency.

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Dermatitis cruris purstulosa et atrophicans

Dermatitis cruris purstulosa et atrophicans (DCPA) is a misnomer, because the disease always starts as a follicular pustule. At that stage, histologically it resembles a wine glass-shaped abscess, and the hair shaft passes through it. There is profound polymorphonuclear collection in the abscess cavity. This involves only the upper third of the hair follicle. It then spreads to the mid-follicular area when clinically nodules can be felt. Still later, the disease affects the front of the thighs and then on to the back of the forearms and later to the front of the chest and finally the scalp. The dermatitis is secondary to the medications or the intense scratching, and hence this condition should be called Folliculitis Cruris Pustulosa et Atrophicans (FCPA).[1,2]

Folliculitis Cruris Pustulosa et Atrophicans is predominantly a disease of the male. Those female patients who had this disease had terminal hairs on their legs. The presence of terminal hair therefore appears to be a prerequisite for FCPA. To our knowledge, FCPA has not been reported in the Caucasian skin. Isolation of staphylococci is reported in every published study. Response to antibiotics is only transient. Eczematization never occurs because of the disease per se. If ever it happens, it is always from incorrect medications. Moreover, even in a clinically worst case there is no fever or lymphadenopathy. The hypergammaglobulinemia reported in long-standing cases is nonspecific. It is speculated to be in response to the damaged mucoproteins of dermal origin[3]. The ''rain drops''-like scar observed in grade IV of the disease corresponds to the former hair follicles (Fig. 1) The ''wiry roughness'' emphasized by Harman[4] is secondary to scratching upwards and readily detected in other itchy skin diseases involving hairy areas. The disease always starts on the anterior or anterolateral aspect of the lower third of the legs and only rarely affects the face (Fig. 2). Loss of hair either from the disease process or induced by any other means is followed by cure. Manual epilation by a forceps or by laser was found to be curative (personal observation). The healed areas become ichthyotic and readily develop pruritus following the use of toilet soaps. The role of sebaceous glands in the initiation or persistence of this peculiar disease may be worth investigating.