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Ecthyma gangrenosum, beyond *Pseudomonas aeruginosa*[☆]



Ectima gangrenoso, más allá de *Pseudomonas aeruginosa*

Dear Editor,

Ecthyma gangrenosum is an uncommon skin manifestation of systemic infection that generally affects immunocompromised patients.¹

We present the case of a 63-year-old female patient with a history of acute myeloid leukaemia on active treatment with carboplatin and etoposide after progressing from first-line and second-line treatment (idarubicin-cytarabine and the FLAG-IDA regimen: fludarabine + cytarabine and idarubicin and granulocyte-colony stimulating factor).

On day +7 of the first cycle, the patient experienced an episode of fever, coughing and dyspnoea, as well as pancytopenia. She was admitted to hospital and administered broad-spectrum antibiotic therapy with piperacillin/tazobactam in combination with amikacin and granulocyte-colony stimulating factor. Complementary tests were also performed.

The pulmonary auscultation performed on physical examination revealed decreased breath sounds and scattered rhonchi.

An erythematous macule measuring 8 × 12 mm with a necrotic annular centre was observed on the outer part of the patient's right knee (Fig. 1a).

The complementary tests performed are described below.

A chest CT scan was conducted, which showed diffuse alteration of the pulmonary parenchyma with bilateral 'cobblestone' pattern and multiple bilateral pulmonary nodules with surrounding halo of ground-glass attenuation and area of left perihilar consolidation (Fig. 1b).

The bronchoscopy showed thickening of the left bronchial tree and erythaema of the mucosa at the entrance to the lung base that prevented the passage of the bronchoscope. Bronchoalveolar lavage (BAL) was performed, finding no malignant cells.

The skin biopsy of the lesion identified fungal structures (spores and hyphae) in the connective tissue of the skin and subcutaneous cellular tissue, as well as in the vessels of the superficial and reticular dermis and of the subcutaneous cellular tissue. Intravascular

thrombi were also observed in many of the small and medium-sized blood vessels (Fig. 1c).

The skin biopsy culture revealed growth of *Fusarium proliferatum*.

Two of the four blood cultures were positive for *Fusarium proliferatum*.

Despite changing the patient's antibiotic therapy and starting a loading dose of intravenous voriconazole 200 mg every 12 h, she died a week after the onset of symptoms.

Ecthyma gangrenosum has often been associated with *Pseudomonas aeruginosa*,¹ although on rare occasions it is caused by other infectious pathogens. The literature points to a broader bacterial spectrum with Gram-negative bacteria such as *Escherichia coli*, *Citrobacter freundii*, *Klebsiella pneumonia* and *Morganella morganii*. Moreover, some fungi, such as species of *Candida*, *Aspergillus* and *Curvularia*, have been reported to cause clinically similar lesions.²

Some authors define the disease according to its aetiological agent, while others define it by its clinical characteristics. However, the name attributed to the disease rarely reflects a fungal infection. This confusion may mask a much broader prevalence of ecthyma gangrenosum-like infections that might otherwise have been reported in a broad spectrum of fungal diseases.

The species *Fusarium* is an opportunistic fungal pathogen that causes disseminated infections in immunocompromised patients.

Given the high mortality rate associated with this infection, making a definitive diagnosis in suspected cases is important. Skin involvement is the first sign of disseminated fusarium infection in most cases, and it often manifests early in the disease. Multiple painful papular or macular erythematous lesions are reported in 70% of cases. The lesions tend to have a necrotic centre similar to ecthyma gangrenosum and are described as ecthyma gangrenosum-like lesions.³

In immunocompromised patients, fusarium infection often spreads and is usually accompanied by lung involvement, resulting in a high mortality rate that can exceed 50%.⁴

That is why detecting each individual skin lesion in patients with haematological malignancies and pancytopenia, performing a skin biopsy and administering antibiotics and antifungals early, together with neutrophil-stimulating factors for rapid recovery, is absolutely vital.

In conclusion, this is one of the few documented cases in the literature of an ecthyma gangrenosum-like lesion caused by *Fusarium proliferatum*. We stress the need to conduct a dermatological examination in these patients and the importance of an early skin biopsy of any lesion in order to make a correct diagnosis and initiate treatment as early as possible.

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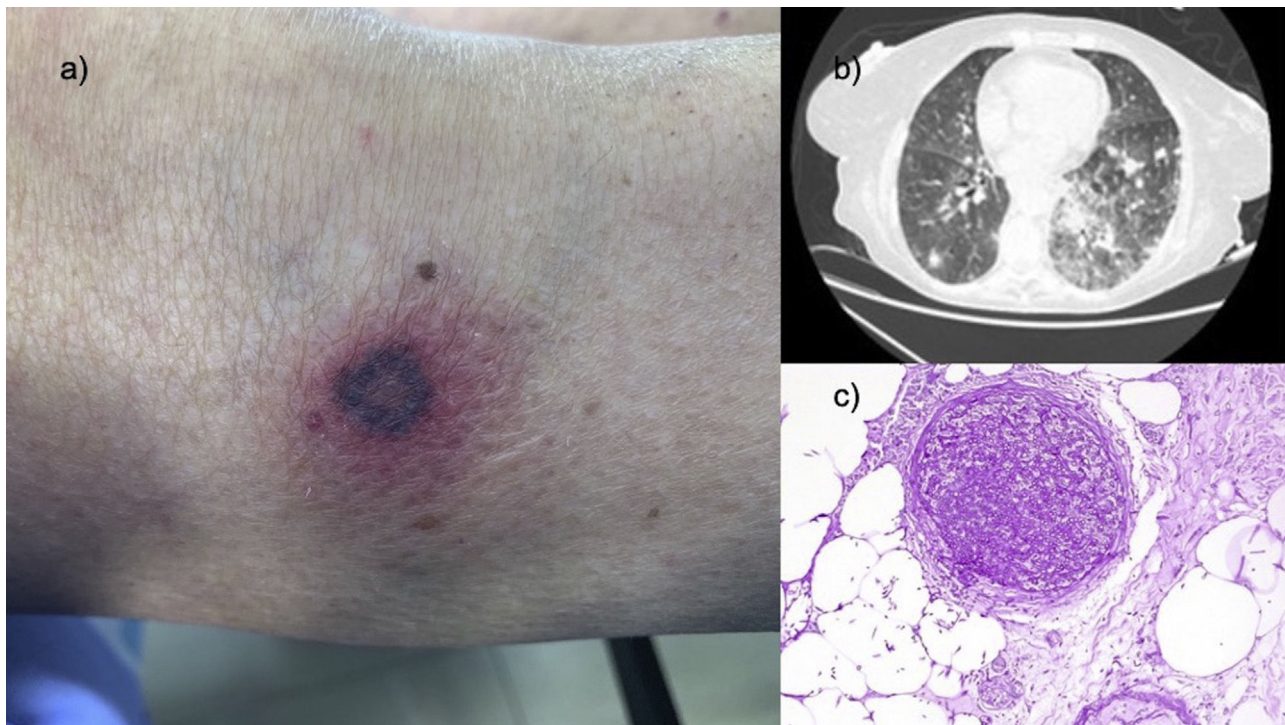


Figure 1. a) Photograph of the lesion located on the outer region of the right knee. b) Chest CT image with pulmonary window showing the bilateral 'cobblestone' pattern and several nodules. c) Haematoxylin-eosin $\times 40$: medium-sized vessel completely blocked by a thrombus of fungal structures.

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Guide for the screening of HCV infection in Spain, 2020



Guía de cribado de la infección por el VHC en España, 2020

Spain has made significant progress on hepatitis C elimination after approval of the Strategic Plan for Hepatitis C in the Spanish National Health System (PEAHC) in 2015.¹ From 2015 to mid-2020, more than 135,000 people have received direct-acting antiviral agents (DAAs) against the hepatitis C virus (HCV). Besides, improvement has been made in understanding the country HCV infection's epidemiology and reinforcing awareness and community participation to prevent infection.

As part of the objectives of PEAHC, the Spanish Ministry of Health has recently published the Guide for the screening of HCV infection.² The guide has been developed by the Secretariat of the National Plan on AIDS and the Screening Programs Unit of the General Directorate of Public Health of the Ministry of Health. Col-

laborators include members from several institutions including the National Plan on Drugs, the National Epidemiology Center (Carlos III Health Institute), the Epidemiology Services of the autonomous regions, the General Secretariat of Penitentiary Institutions, the Scientific Advisory Council of the PEAHC, several Scientific Societies (SEIMC, SEISIDA, AEEH, AEHVE, SEMFyC, SEMG, SEMERGEN), and Patient Associations and NGOs (PLAFHC Madrid, PLAFHC, CESIDA, Apoyo Positivo, FNETH, gTt-HIV). The document has been endorsed by the Population Screening Conference, the Regional Office of the World Health Organization (WHO) for Europe, and the Barcelona Institute of Global Health (See supplementary material).

The decision on the best HCV screening strategy and the recommendations for adequate implementation in the guide has taken into consideration different criteria. Firstly, the results of the 2nd Seroprevalence Study that places Spain as a country with a low prevalence of HCV infection.³ According to this study, 0.22%