



Enfermedades Infecciosas y Microbiología Clínica

www.elsevier.es/eimc



Diagnosis at first sight

Cutaneous lesions on the hand of a transplant recipient[☆]

Lesiones cutáneas en la mano de una paciente trasplantada

Mercedes Sendín-Martín^{a,*}, Francisco Javier Nieto-García^b,
José Alberto García-Bolaños^c, Águeda Pulpillo-Ruiz^a

^a Unidad de Gestión Clínica de Dermatología, Hospital Universitario Virgen del Rocío, Seville, Spain

^b Unidad de Gestión Clínica de Medicina Integral, Hospital Universitario Virgen del Rocío, Seville, Spain

^c Unidad de Gestión Clínica de Anatomía Patológica, Hospital Universitario Virgen del Rocío, Seville, Spain



ARTICLE INFO

Article history:

Received 3 March 2019

Accepted 4 April 2019

Case report

A 67-year-old woman who underwent a kidney transplant two months prior, developed an erythematous plaque with coalescent purplish nodules on the back of her right hand during the month after the transplant (Fig. 1), with no fever or systemic symp-



Fig. 1. Erythematous plaque with coalescent purplish nodules on the back of the patient's right hand, which coincided with the area in which traumatic peripheral venous cannulation had taken place a few weeks before.



Fig. 2. Purple nodule on an erythematous base on the lateral side of the right foot.

toms. She was on immunosuppressive therapy with prednisone, mycophenolate mofetil and tacrolimus. The lesion appeared after traumatic peripheral venous cannulation, and it was treated initially as bacterial cellulitis, with oral antibiotherapy, with no response. She also presented with a small purplish nodule on the lateral side of her right foot (Fig. 2), which the patient said had appeared after manipulating with her hands a wound caused by her shoes.

Clinical course

After a torpid clinical course, skin biopsies of the back of her hand and of the nodule on the lateral side of her right foot were carried out. The histological study with the Grocott technique enabled fungal structures corresponding to a dematiaceous fungus affecting the mid and deep dermis to be observed (Fig. 3, red arrows).

DOI of original article: <https://doi.org/10.1016/j.eimc.2019.04.005>

[☆] Please cite this article as: Sendín-Martín M, Nieto-García FJ, García-Bolaños JA, Pulpillo-Ruiz Á. Lesiones cutáneas en la mano de una paciente trasplantada. *Enferm Infecc Microbiol Clin.* 2019. <https://doi.org/10.1016/j.eimc.2019.04.005>

* Corresponding author.

E-mail address: mercedessendin@gmail.com (M. Sendín-Martín).

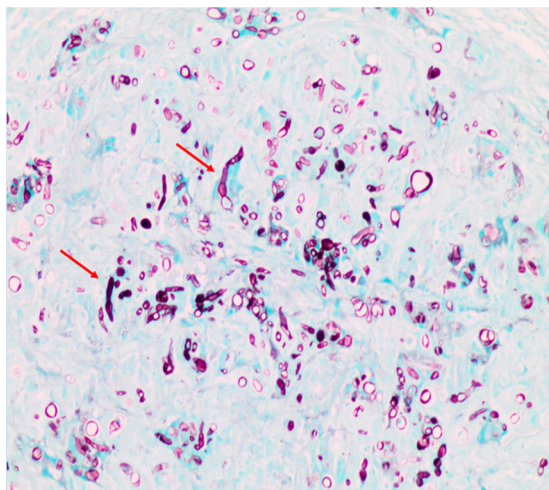


Fig. 3. View at $\times 10$ with the Grocott technique which makes it possible to see fungal structures corresponding to a dematiaceous fungus (red arrows) affecting the mid and deep dermis.

Samples from both biopsies were sent for microbiological culture, and growth of *Alternaria* spp. was observed.

Chest X-ray and blood cultures were performed, which ruled out seedings or haematogenous spread. The patient received treatment with posaconazole IV (300 mg/12 h) for one month with rapid improvement a few weeks after starting treatment. Subsequently, she continued with oral posaconazole 300 mg daily until she had completed a total of six months of antifungal treatment, achieving complete resolution of both lesions.

Final comments/discussion

Phaeohyphomycosis is a group of mycoses in which dematiaceous fungi intervene, in the form of budding yeast or in the form of hyphae. These organisms are generally considered to be saprophytic or commensal. *Alternaria* is a saprophytic dematiaceous fungus of the soil and a plant pathogen, which rarely causes infections in immunocompetent individuals,¹ with cutaneous or subcutaneous involvement being the most common (74.3%), causing eye infections, rhinosinusitis and onychomycosis on a less frequent basis.¹ Only 56 cases of alternariosis have been gathered in the literature in the last 10 years,² and 212 since the first case was published in 1933.^{1–3} The main risk factor for suffering from the infection is immunosuppression, with 71% of the cases collected in a review being individuals who had undergone a solid organ transplant and 11% patients with haematological malignancies.² The manner in which the infection starts is not clearly established, although it seems that the history of skin wound has to be present.⁴ It is more common in males, in Mediterranean countries and the extremities are the most commonly affected place.^{1,2,5}

The clinical manifestations of the skin infection caused by *alternaria* are highly varied. In the superficial (epidermal) forms,

erythematous and desquamative areas with papular elements appear which tend to erode and flake,^{1–3} while the deeper (dermal) forms are generally preceded by a penetrating trauma, tend to present as a purplish plaque, which is sometimes painful, and tend to form ulcers.^{2,6} The time range between inoculation and the appearance of the lesions ranges between two months and several years.⁷

Although on many occasions the spores can be detected in the histological image,^{2,7} the diagnosis of *Alternaria* spp. infection requires isolation of the fungus by culture. In this, the morphology of the conidia and whether or not there is formation of conidial chains are the main element with which the diagnosis is established.¹ However, the microorganism is often not able to sporulate, and, consequently, they cannot be detected under the microscope or are difficult to distinguish from other contaminating forms. On these occasions, molecular biology techniques have to be used for the definitive diagnosis.^{8,9}

The prognosis of this condition is insidious, and the treatment is not clearly standardised, meaning that greater cure rates have been achieved with the combination of surgery and systemic antifungal therapy.^{2,7,8} Cases of resolution with the exclusive use of thermotherapy have been described, as the slowing down of the proliferation of the fungus *in vitro* at a temperature of 37 °C has been found.⁸ Itraconazole (between 100–600 mg/day with a variable treatment duration), voriconazole, fluconazole and posaconazole have been used as systemic antifungals, with the former being used on a large number of occasions and showing cure rates in monotherapy of 60%.^{2,5,8} Surgery alone is acceptable for small and localised lesions.

Funding

The authors declare that they did not receive funding to complete this study.

References

- Pastor FJ, Guarro J. *Alternaria* infections: laboratory diagnosis and relevant clinical features. *Clin Microbiol Infect.* 2008;14:734–46.
- Bajwa R, Wojciechowski AL, Hsiao CB. Cutaneous alternariosis in a renal transplant patient successfully treated with posaconazole: case report and literature review. *Med Mycol Case Rep.* 2017;15:16–20.
- Borsook ME. Skin infection due to *Alternaria tenuis*: with the report of a case. *Can Med Assoc J.* 1933;29:479–82.
- Kazory A, Ducloux D, Reboux G, Blanc D, Faivre B, Chalopin J-M. Cutaneous *Alternaria* infection in renal transplant recipients: a report of two cases with an unusual mode of transmission. *Transpl Infect Dis.* 2004;6:46–9.
- Lyke KE, Miller NS, Towne L, Merz WG. A case of cutaneous ulcerative alternariosis: rare association with diabetes mellitus and unusual failure of itraconazole treatment. *Clin Infect Dis.* 2001;32:1178–87.
- Henn SL, Forrest GN. Febrile neutropenia associated with painful lesions of the palms and digits. *Clin Infect Dis.* 2006;43:791–2.
- Hsu C-C, Chang S-S, Lee P-C, Chao S-C. Cutaneous alternariosis in a renal transplant recipient: a case report and literature review. *Asian J Surg.* 2015;38:47–57.
- Leahy TR, Punnett AS, Richardson SE, Gharabaghi F, Wadhwa A. Molecular identification of phaeohyphomycosis due to *Alternaria* infectoria in a patient with acute myeloid leukemia—a case report. *Diagn Microbiol Infect Dis.* 2010;66:318–21.
- Hoog GS, Horr  R. Molecular taxonomy of the *Alternaria* and *Ulocladium* species from humans and their identification in the routine laboratory. *Mycoses.* 2002;45:259–76.