



ORIGINAL ARTICLE

Species isolated as the cause of onychomycosis in patients with pemphigus vulgaris



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KEYWORDS

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Onychomycosis in
immunosuppressed
patients

Abstract

Background: Pemphigus vulgaris (PV) is an autoimmune disease that affects the skin and mucous membranes. It is caused by antibodies directed against desmoglein 3 which leads to the breakdown of the junctions between keratinocytes in the suprabasal epidermis, causing flaccid blisters. Nail involvement in PV has been associated with chronic PV and immunosuppressive therapy, which can increase the risk of bacterial, viral or fungal infection in the nail apparatus. **Objectives:** To determine which species cause onychomycosis in patients with PV treated with prednisone 1 mg/kg/day.

Materials and methods: An observational, descriptive study was performed in 169 patients: 85 were diagnosed with PV and treated with prednisone at a dose of 1 mg/kg/day (patients), and 84 without PV and not treated with steroids (controls).

Results: The species most commonly isolated in the PV group was *Trichophyton rubrum* (29%), followed by *Trichophyton mentagrophytes* (6%), non-dermatophyte moulds (3%) and *Candida albicans* (3%). However, in 59% of cases, the causative agent was not identified.

Conclusions: The presence of onychomycosis in patients with PV was not associated with the use of glucocorticoids; no greater prevalence of onychomycosis was observed in patients without PV and without steroid therapy.

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PALABRAS CLAVE

Tiña;
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inmunosuprimidos

Especies aisladas como causa de onicomycosis en pacientes con pénfigo vulgar**Resumen**

Antecedentes: El pénfigo vulgar (PV) es una enfermedad autoinmune, que afecta la piel y las mucosas, producida por anticuerpos dirigidos contra la desmogleína 3, que lleva a la ruptura de las uniones entre los queratinocitos en la epidermis suprabasal, generando ampollas flácidas. La afección del aparato ungueal en el PV se ha asociado al curso crónico de la enfermedad y a la terapéutica inmunosupresora empleada, lo cual puede incrementar el riesgo de sobreinfección bacteriana, viral o micótica en el aparato ungueal.

Objetivos: Determinar las especies aisladas como causa de onicomycosis en pacientes con pénfigo vulgar en tratamiento con prednisona a dosis de 1 mg/kg/día.

Material y métodos: Es un estudio observacional, descriptivo y transversal. Se incluyeron 169 pacientes, de los cuales 85 eran pacientes con PV en tratamiento con prednisona a dosis de 1 mg/kg/día (casos) y 84 sujetos sin PV y sin terapia con esteroides (controles).

Resultados: Las especies involucradas en el grupo 1 (PV) tenían como las más frecuente a *T. rubrum* (29%), seguido de *T. mentagrophytes* (6%), hongos Moho (3%) y *C. albicans* (3%), no obstante, en el 59% de los casos no fue posible la identificación de la especie.

Conclusiones: La presencia de OM en pacientes con PV no se asoció al uso de tratamiento esteroide; asimismo no se observó mayor prevalencia de OM en comparación con los sujetos sin PV y sin terapia con esteroides.

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Introduction

Pemphigus vulgaris (PV) is an autoimmune disease of the skin and mucosa. It is caused by antibodies that mainly target desmoglein 3,¹⁻³ resulting in a loss of cohesion between suprabasal keratinocytes. This leads to the formation of flaccid bullae on the skin and mucous membranes that rupture easily to form areas of painful, superficial erosion. PV is considered a severe, incapacitating disease that undermines quality of life and general health. The impact of the disease is directly proportional to the extent of the lesions, the chronicity of the condition, various functional problems, the presence of bacterial or mycotic septicaemia, and the need for immunosuppressant therapy, all of which contribute to morbidity and mortality in these patients.

Nail apparatus involvement is usually found in patients with chronic PV treated with immunosuppressants, such as prednisone alone or in combination with adjuvant therapy, such as disease-modifying anti-rheumatic drugs (azathioprine, cyclophosphamide, mycophenolate mofetil and methotrexate, among others). In PV patients, therapy is usually administered for 4–5 years, and this can increase the risk of bacterial, viral and/or mycotic superinfection of the nail apparatus.⁴

Fungal infections of the nail are caused by dermatophytes, yeasts or moulds; immunosuppressants, poor circulation, diabetes mellitus, injury, HIV infection, chronic injury and humidity will predispose a patient to this type of infection.⁴

Fungi usually affect the nails of the toes; the principal infectious agents are dermatophytes, such as *Trichophyton rubrum* and *Trichophyton mentagrophytes*, and various species of *Candida*.^{5,6}

Diagnosis is based on microbiological tests and cultures to isolate the aetiological agent and determine the type onychomycosis (OM) involved, following which specific treatment can be started.^{7,8}

There is scant mention in the literature of nail involvement, such as paronychia, onychodystrophy, onychomycosis, subungual bleeding and discolouration in patients with PV, and no studies have hitherto explored the frequency and pathogenesis of onychomycosis in PV patients compared with healthy subjects. This situation prompted us to conduct a study to determine these parameters.

Materials and methods

This is an observational, descriptive, cross-sectional study in 169 patients seen at the dermatology outpatient department of the ‘‘Dr. Eduardo Liceaga’’ General Hospital of Mexico from September 2014 to April 2015 (7 months). Patients with a clinical, histological and immunological diagnosis of PV treated with 1 mg/kg/day prednisone were included in group 1, and matched for age and sex with an equal number of healthy subjects with no diagnosis of PV or autoimmune disease and not treated with steroids (group 2). Both groups were tested for OM using microscopy studies and clinical tests (culture). All patients were evaluated by the same dermatologist who recorded the following study parameters in the data collection sheet: percentage of body surface area affected by PV, nail involvement, type of OM, topography, and time since onset of OM.

The data were analysed descriptively using measures of central tendency and scatter. The database was compiled in Excel. Binomial regression analysis was used to determine

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