Disseminated Majocchi's Granuloma in a patient recovering from COVID-19 Infection

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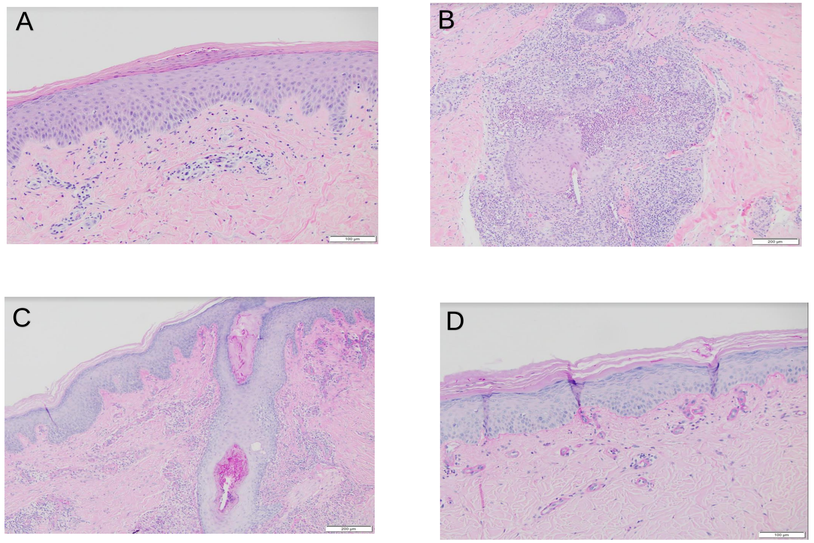
Introduction

Over the last few months, several dermatological manifestations have been described related to Covid-19 infections. We describe a patient who developed disseminated erythematous, scaly patches during his clinical course that posed a diagnostic challenge.[1]

Case

A 58-year-old male was admitted with Covid 19 infection and subsequently developed Pseudomonas pneumonia and sepsis. He required mechanical ventilation followed later by tracheostomy. His ICU course was complicated by circulatory shock requiring pressor support, critical illness myopathy, delirium, and paroxysmal atrial fibrillation. A month into the clinical course, he developed an extensive pruritic maculopapular rash on the trunk and bilateral upper and lower extremities.

There was no significant history of travel, animal exposure, or tick bites. Initially, the rash was thought to be drug-induced. Significant medications included cefepime, amiodarone, low molecular weight heparin, valproate, and quetiapine. Disseminated pseudomonas infection was unlikely because of the pruritic nature of the rash, as was Steven Johnson syndrome because of a lack of mucosal involvement. Other differentials included erythema multiforme and fungal dermatosis. Repeat blood culture, Covid 19 PCR, and ANA screen were negative.



A. Closer view showing neutrophils in surface scale and superficial dermis (mag 200)
B. Ankle biopsy shows neutrophilic granulomatous folliculitis (mag 100)
C. PAS stain highlights abundant fungal hyphae in the inflamed hair follicle (mag 100)
D. Fungal hyphae also present in surface scale, correlating with clinical areas of the more common superficial tinea infection (mag 100); fungal morphology is septate with no yeast forms: typical of dermatophyte species)
[Histopathology diagnosis and images provided by Dr. Hina Sheikh, Dermatopathologist, Health Network Laboratories, Allentown PA]

The patient was placed on steroid taper and topical hydrocortisone cream without much respite.

Skin biopsy was ultimately performed which demonstrated mild hyperkeratosis and epidermal hyperplasia, with foci of suppurative neutrophilic folliculitis with evidence of follicular rupture.

PAS stain highlighted numerous fungal septate hyphae in the inflamed hair follicle. Mycobacterial and other cultures were negative. The patient was diagnosed with Majocchi's granuloma and had significant improvement after treatment with systemic flucanazole.

Discussion

Majocchi's granuloma is a well-recognized but uncommon infection of dermal and subcutaneous tissues that is caused by mold fungi. It is primarily caused by dermatophytes such as Tricophyton rubrum and is restricted to the nonliving cornified layer of the epidermis and does not invade beyond the epidermis in an immunocompetent host.[2]

However, in immunocompromised hosts, it causes invasive and disseminated infections that can be life-threatening if not diagnosed properly. Systemic antifungal agents (terbinafine or fluconazole) should be continued until the lesions are completely resolved which may be anywhere from one to six months.[3]

References

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