Majocchi granuloma presenting as a verrucous nodule of the lip

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ABSTRACT

We present a case of Majocchi granuloma, a deep folliculitis, on the lip of a healthy 41-year-old man. The patient was successfully treated with systemic and topical antifungal medications. Correct diagnosis of this rare condition is needed, since misdiagnosis as an inflammatory dermatitis and treatment using topical corticosteroids can lead to dissemination of the infection.

KEYWORDS Majocchi's granuloma; *Trichophyton rubrum*

Majocchi's granuloma represents a rare, deep dermatophyte folliculitis, a clinical variant of tinea corporis usually caused by the dermatophyte *Trichophyton rubrum*.¹ Two main clinical forms have been described: the papulopustular perifollicular and indurated plaques with erythematous subcutaneous nodules. The former is typically developed in trauma-prone areas in healthy individuals, whereas the latter presents in immunosuppressed patients.^{2,3} We report a case of Majocchi granuloma with an unusual presentation.

CASE STUDY

An otherwise healthy 41-year-old white man presented with a 1-year history of a nodular lesion on the right corner of his mouth without pruritus, pain, or history of trauma to the area. The patient reported a 10-pack-year smoking history and frequent sun exposure without the use of sunscreen, but denied any history of skin cancer. The patient self-treated the lesion using over-the-counter topical antibiotics, without improvement. Topical or systemic corticosteroids were not attempted. On clinical examination, a 9 × 6 mm verrucous, erythematous nodule was observed on the right labial commissure (Figure 1). The lesion was crusted and without ulceration. A shave biopsy was performed to rule out squamous cell carcinoma. On hematoxylin and eosin staining, there was pseudoepitheliomatous hyperplasia with acute neutrophilic inflammation within the invaginated stratum corneum (Figure 2a). Periodic acid-Schiff staining revealed lesional cells positive for hyphae in cornified elements of follicles (Figure 2b). The clinical and histopathologic findings confirmed the diagnosis of Majocchi granuloma. Accordingly, the patient was managed with naftifine gel, 1%

topically applied twice a day to the lip, and terbinafine, 250 mg taken orally once a day for 30 days. Two months later, complete resolution was documented.

DISCUSSION

Domenico Majocchi first described this dermatosis in 1883. Majocchi granulomas are unusual deep dermatophytoses, with *Trichophyton rubrum* accounting for 50% of the cases.² Risk factors associated with Majocchi granulomas include trauma, frequent shaving, long-term topical corticosteroid use, immunosuppressive therapy, graft-versus-host disease, organ transplant, and pregnancy.⁴

There are two forms of Majocchi granulomas: follicular and nodular. They can be distinguished based on their clinical appearance and the immune status of the host. The follicular type is usually found in healthy individuals, most

Figure 1. Crusted, verrucous nodule on the right labial commissure.

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Figure 2. (a) Pseudoepitheliomatous hyperplasia with acute neutrophilic inflammation within the invaginated stratum corneum (10 $\times$, hematoxylin and eosin). (b) Periodic acid-Schiff stain–positive hyphae and yeast (40 $\times$).

often due to trauma such as shaving in women or topical corticosteroid use, especially in children. The lesions are characterized by superficial papulopustular perifolliculitis. The nodular form is most often noted in immunocompromised hosts, presenting with chronic erythema, indurated plaques, and subcutaneous nodules.³ Both types advance from suppurative to granulomatous infiltration in situ.⁵ Histopathologically, the dermatophytes are located in the stratum corneum, using keratin as a substrate.⁶ Moreover, the fungal hyphae can be confused with *Mucor* and *Rhizopus* species due to their shorter, thicker appearance than common hyphae found in more superficial dermatophytoses.⁴

Systemic antifungal therapy is the recommended treatment for patients until all lesions are cleared. Traditionally, oral terbinafine, griseofulvin, itraconazole, and ketoconazole have been used successfully for a minimum of 4 to 8 weeks. Although topical antifungal medications do not penetrate deep into the skin, they are often used to supplement the systemic treatment as a second line of therapy. While surgical excision is a viable option for isolated lesions, recurrence is common due to unhealed dermatophyte foci.⁴ Misdiagnosis as inflammatory dermatitis and treatment using topical corticosteroids can lead to dissemination of the infection and even fungemia with sepsis.⁶

Therefore, the clinician must be cognizant of this condition and pursue a pathologic diagnosis when in doubt.²

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1. Liu HB, Liu F, Kong QT, Shen YN, Lv GX, Liu WD, Sang H. Successful treatment of refractory Majocchi's granuloma with voriconazole and review of published literature. *Mycopathologia*. 2015;180(3–4):237–243. doi:10.1007/s11046-015-9902-5.
2. Bonifaz A, Tirado-Sanchez A, Ponce RM. Majocchi's granuloma. *Gac Med Mex*. 2008;144(5):427–433.
3. Kanaan IC, Santos TB, Kac BK, Souza AM, Cerqueira AM. Majocchi's granuloma—case report. *An Bras Dermatol*. 2015;90(2):251–253. doi:10.1590/abd1806-4841.20153115.
4. Ilkit M, Durdu M, Karakas M. Majocchi's granuloma: a symptom complex caused by fungal pathogens. *Med Mycol*. 2012;50(5):449–457. doi:10.3109/13693786.2012.669503.
5. Arenas R, Toussaint S, Isa-Isa R. Kerion and dermatophytic granuloma. Mycological and histopathological findings in 19 children with inflammatory tinea capitis of the scalp. *Int J Dermatol*. 2006;45(3):215–219. doi:10.1111/j.1365-4632.2004.02449.x.
6. Li FQ, Lv S, Xia JX. Majocchi's granuloma after topical corticosteroids therapy. *Case Rep Dermatol Med*. 2014;2014:507176.