



Case illustrated

Kerion and tinea capitis

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ARTICLE INFO

Article history:

Received 18 June 2018

Received in revised form 27 June 2018

Accepted 27 June 2018

Keywords:

Kerion

Tinea capitis

Microsporum canis

Potassium hydroxide wet mount examination

A 9-year-old boy (Patient 1) with no past medical history presented to the pediatric emergency department with a 1-month history of tender erythematous lesions on his scalp. The lesions had gradually enlarged despite the use of topical antibacterials and corticosteroids. His temperature upon presentation was 38.0°C, and physical examination showed multiple erythematous lesions and tender swellings on his scalp with bilateral cervical lymphadenopathy (Fig. 1). There were no other remarkable signs on examination. Laboratory evaluation showed evidence of an elevated inflammatory response signified by a white blood cell count of 22,800 / μ L (84% neutrophils) and a C-reactive protein (CRP) level of 10.99 mg/dL. There were no other apparent abnormalities.

Around the same time, his friend (Patient 2) developed a milder scalp lesion with alopecia. Patient 1 frequently played with cats at Patient 2's house. Potassium hydroxide wet mount examination of their hair roots showed kinky hyphae and small spores (Fig. 2). *Microsporum canis* was obtained on culturing Patient 2's hair specimen. The patients were both treated with oral itraconazole and their lesions gradually improved after a 6-week treatment course. Gradually, the hair of Patient 1 grew back (Figs. 3 and 4).

Tinea capitis is an infection of the scalp hair caused by dermatophyte fungi such as *Trichophyton* spp. and *Microsporum* spp. [1]. Kerion is a severe inflammatory form of tinea capitis with a hypersensitivity reaction against dermatophytes [2]. Systemic antifungal therapy is needed for treatment (griseofulvin, terbinafine, fluconazole or itraconazole are the treatments of



Fig. 1. The scalp lesions of Patient 1 at the presentation.

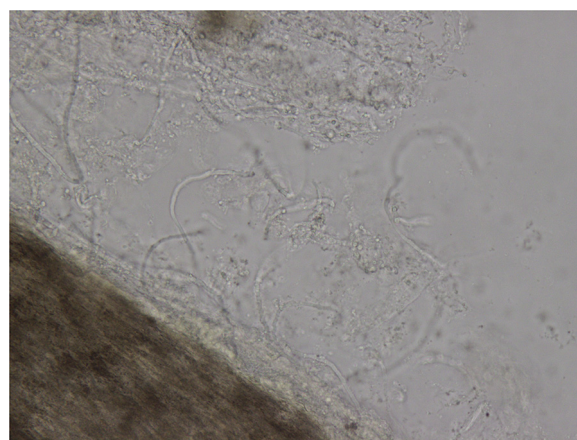


Fig. 2. Potassium hydroxide wet mount examination of Patient 1's hair roots.

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Fig. 3. The scalp of Patient 1, 1 month after treatment.



Fig. 4. The hair of Patient 1 grew back 4 month after treatment.

choice) [3]. The efficacy of adjunctive oral corticosteroids is limited, and thus they are not recommended [4]. The differential diagnosis includes seborrheic dermatitis, bacterial cellulitis, and tumor, and the diagnosis of tinea capitis and kerion is often delayed [5].

Authors' contribution

HN cared for the patient, searched the scientific literature, prepared the figures, and wrote the report. MN and TN cared for patient, searched the scientific literature, and revised the report.

Conflict of interest

There is no conflict of interest to disclose.

Funding

There is no funding source.

Consent

Written consent from patients and their caregivers was obtained.

References

- [1] Hay RJ.. Tinea capitis: current status. *Mycopathologia* 2017;182:87–93.
- [2] John AM, Schwartz RA, Janniger CK. The kerion: an angry tinea capitis. *Int J Dermatol* 2016;57:3–9.
- [3] Chen X, Jiang X, Yang M, Gonzalez U, Lin X, Hua X, et al. Systemic antifungal therapy for tinea capitis in children. *Cochrane Database Syst Rev* 2016;5: CD004685.
- [4] Hussain I, Muzaffar F, Rashid T, Ahmad J, Jahangir M, Haroon TS. A randomized, comparative trial of treatment of kerion celsi with griseofulvin plus oral prednisolone vs. griseofulvin alone. *Med Mycol* 1999;37:97–9.
- [5] Feetham JE, Sargant N. Kerion celsi: a misdiagnosed scalp infection. *Arch Dis Child* 2016;101:503.