



Itchy scalp with scale

The patient had a history of treatment for head lice, but a dermatoscopic exam revealed that lice weren't to blame for his itchy scalp.

AN 11-YEAR-OLD BOY sought care at a small village's health center in Panama for scalp itching and subtle hair loss. He was seen by a family physician (RU) and a team of medical students who were there as part of a humanitarian trip. The patient denied any hair pulling. He had a history of treatment for head lice.

Our physical examination revealed mild alopecia and scaling on the scalp (FIGURE 1), but what we saw through the dermatoscope (FIGURE 2) made the diagnosis clear.

- WHAT IS YOUR DIAGNOSIS?
- HOW WOULD YOU TREAT THIS PATIENT?

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*The authors reported no potential
conflict of interest relevant to this
article.*

doi: 10.12788/jfp.0117

FIGURE 1

Scale on scalp



FIGURE 2

Dermoscopy of involved scalp



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**Diagnosis:
Tinea capitis**

On dermatoscopic examination (10× magnification), there were numerous “black dots” or broken hair shafts within patches of hair loss (FIGURE 3), which is indicative of tinea capitis.^{1,2} This condition causes hair shafts to break, creating “comma hairs” and black dots. The hairs are uniform in thickness and color and bend distally, like a comma.³

Tinea capitis (commonly called ringworm of the scalp) is a fungal infection caused by *Trichophyton* and *Microsporum* dermatophytes. It is the most common pediatric dermatophyte infection in the world; the usual age of onset is 5 to 10 years.² The incidence of tinea capitis in the United States is not known because cases are no longer registered by public health agencies. That said, a Northern California study that tracked occurrences in children younger than 15 years from 1998 to 2007 found that the incidence was on the decline and lower in girls compared to boys (111.9 vs 146.4, respectively, in 1998; 27.9 vs 39.9, respectively, in 2007).⁴ Incidence rates were calculated per 10,000 eligible children.⁴

■ **Tinea capitis can spread** by contact with infected individuals and contaminated objects, including combs, towels, toys, and bedding.¹ Fungal spores can remain viable on these surfaces for months.

In a study of 69 patients with tinea capitis (23 females, 46 males; mean age, 12 years), the risk factors for spreading infection included participation in sports, contact with an animal, a recent haircut, and use of a swimming pool.⁵

**4 conditions
you’ll want to rule out**

The following conditions should be considered as part of the differential when a patient presents with an itchy scalp and/or hair loss.

■ **Psoriasis of the scalp** is characterized by scaling of the scalp along with crusted plaques. It is often accompanied by similar psoriatic plaques on the elbows, knees, and other areas of the body. Examination of our patient showed no psoriatic plaques.

■ **Seborrhea of the scalp** (also known as dandruff) is a very common diagnosis. However, it is unlikely to cause hair loss. It has widespread involvement of the scalp compared to tinea capitis, which is local and patchy. Our patient’s patches of hair loss indicated that seborrhea was unlikely.

■ **Alopecia areata.** Individuals develop this condition due to an autoimmune process affecting hair follicles. However, the resulting hair loss does not cause significant scaling, inflammation, scarring, or pain in the affected area. Further, this condition can cause the loss of the entire hair shaft.

■ **Trichotillomania** is an impulse control disorder that causes patients to pull out their own hair. There is no scaling of the scalp in this condition.

**A dermatoscope can be
useful in making the Dx**

Although clinical appearance and patient presentation are adequate to establish the diagnosis of tinea capitis, this case demonstrates the utility of a dermatoscope in making the diagnosis of tinea capitis. Previous studies have shown that dermoscopy allows for rapid identification of the broken hair shafts, which are a key distinction from alopecia areata.^{3,6}

■ **Microscopic inspection.** Samples from the scaling of the scalp can be examined with potassium hydroxide (KOH) on a microscope slide. Hyphae, spores, and endo/ectothrix invasion can be seen through the microscope.

FIGURE 3
What dermoscopy revealed



Dermoscopy showed broken hair shafts that created black dots and “comma” hairs. These findings pointed to a diagnosis of tinea capitis.

■ **Laboratory testing is helpful, but not needed.** Testing for tinea capitis would require that you obtain a sample from the affected area using a swab, edge of a scalpel blade, or scalp brush.⁷ Because treatment can require weeks of medication, diagnosis should be confirmed with a KOH or culture when possible.

Newer antifungals provide a Tx advantage

Oral antifungal medications are the treatment of choice for tinea capitis. Newer antifungals, such as terbinafine and fluconazole, require a 3- to 6-week course compared to the standard 6- to 8-week course of griseofulvin.¹ Also, antifungal shampoos—such as those that contain selenium sulfide—may be used for topical treatment but only as adjuvant therapy.^{1,2}

■ **For our patient,** we dispensed a 3-week course of oral fluconazole, 3 to 6 mg/kg, to

be given daily by his parents. We also recommended the use of an antidandruff shampoo, if possible. The treatment outcome was not known because our team's humanitarian global health trip had ended. **JFP**

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CHALLENGES TO IMPLEMENTATION

Medication is pricey

Icosapent ethyl is an expensive medication, currently priced at an estimated \$351/month using a nationally available discount pharmacy plan, although additional manufacturer's discounts may apply.^{12,13} The cost of the medication could be a consideration for widespread implementation of this recommendation. **JFP**

ACKNOWLEDGEMENT

The PURLs Surveillance System was supported in part by Grant Number UL1RR024999 from the National Center For Research Resources, a Clinical Translational Science Award to the University of Chicago. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Center For Research Resources or the National Institutes of Health.

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