Corkscrew Hair: A New Dermoscopic Sign for Diagnosis of Tinea Capitis in Black Children

Tinea capitis (TC) is the most common dermatophytosis of childhood and has an increasing incidence worldwide.1 The presence of Microsporum canis, the most prevalent causative organism in Europe,2 is usually easy to diagnose: it classically presents with a patch of alopecia, a scaly plaque, and a positive finding under Wood lamp examination. An increase in anthropophilic organisms is widely reported,3 mostly among immigrant populations and associated with a noninflammatory TC, which may present with little alopecia or scale and a negative finding under Wood lamp examination.4 Diagnosis in black patients, where subtle erythema of the scalp is more difficult to appreciate, often presents a diagnostic challenge. The absence of a rapid, reliable, confirmatory test, coupled with a nonspecific presentation, means that patients often wait several weeks for a fungal culture result before commencing appropriate systemic therapy.

Slowinska et al5 have described dermoscopic findings in 2 white children with Microsporum canis.5 Herein, we report the dermoscopic features of TC among black children, a potentially diagnostically challenging population, in an attempt to identify specific patterns that may be used for a rapid and reliable diagnosis.

Methods. Between September 2009 and February 2010, 6 black children came to our department with a clinical suspicion of tinea capitis. All underwent direct microscopy examination and fungal cultures of scalp scrapings plus or minus hair pulls. A handheld, noncontact dermoscope was used to examine the affected areas of the scalp prior to treatment. In the absence of clinical symptoms, the frontotemporal area was analyzed. Images were captured directly through the dermoscope with a digital camera.

Results. Six children (aged 2.0-12.5 years) were included in the study, 4 boys and 2 girls. All 6 children were first-generation northwest African immigrants. Three of them had subtle, patchy alopecia and scale; 2 had discrete diffuse alopecia with no scale; and the remaining child had a diffuse cutaneous dermatophytosis but no evidence of alopecia or scale. One patient had a diagnosis of Trichophyton violaceum, 4 had a diagnosis of Trichophyton soudanense, and 1 had a diagnosis of Microsporum langeronii.

On dermoscopic examination, “comma hairs” were seen in all cases (Figure 1). Hairs in the present cases that showed a more exaggerated corkscrew or coiled appearance than was found by Slowinska et al7 were found in the 4 cases of T soudanense (Figure 2). Broken and dystrophic hairs were identified in all cases except the case of M langeronii. The case of T violaceum had fewer comma hairs and prominent broken and dystrophic hairs. No yellow dots were seen. As a control, we examined the scalp hair of 6 healthy children, all first-generation, northwest African immigrants and found no evidence of comma or corkscrew hair in this group.

Figure 1. Trichophyton soudanense tinea capitis, showing comma hairs (red arrow), corkscrew hairs (blue arrow), and broken dystrophic hairs (yellow arrow).

Figure 2. Trichophyton soudanense tinea capitis, showing comma hairs (red arrow), corkscrew hairs (blue arrow), and broken dystrophic hairs (yellow arrow).

Comment. We have identified specific dermoscopic patterns of TC in a black population and propose that dermoscopy may represent a rapid and reliable confirmatory test. All 6 cases had readily identifiable comma hairs, as described by Slowinska et al.8 Four patients, all with a diagnosis of T soudanense, also had more exaggerated corkscrew hairs. Such hair was not described by Slowinska et al.7 Broken and dystrophic hairs were also seen. Whether corkscrew hairs are a variation of the comma hair in black patient hair types or are specific to T soudanense infection deserves further investigation.

Our patients with T soudanense present had only a discrete scaling area and/or slight, diffuse alopecia. It is of
particular interest that corkscrew hairs were especially prominent in these cases because a diagnosis based on clinical appearance would have been difficult to make.

The limitations of our study are the small number of patients and the absence of controls. A blinded study with a larger group of patients is needed to further define the role of dermoscopy in the clinical setting of TC. In conclusion, corkscrew hair appears to be a new diagnostic marker for TC. Dermoscopic evaluation of the scalp in suspected cases of TC may represent a rapid diagnostic tool of particular benefit in atypical presentations.

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Hughes et al show that dermoscopy is a fast, noninvasive, and reliable tool in the screening of children with endothrix tinea capitis. This is just 1 of the possible applications of hair dermoscopy, also known as trichoscopy, in the evaluation of hair disorders. There is evidence that trichoscopy allows for all of the following:

1. Fast diagnosis of hair-shaft disorders;
2. Immediate differentiation between cicatricial and noncicatricial alopecia;
3. Diagnosis and information on short-term prognosis of alopecia areata; and
4. Differential diagnosis between telogen effluvium and androgenetic alopecia.

These are just the most common applications; many others are being developed.1

Why then do dermatologists not use this technique? Barriers to routine use of trichoscopy may include lack of knowledge, necessity of training, costs, and possibly disbelief in the technique. Trichoscopy is a relatively new field, and most dermatologists are not aware that it is useful to look at the hair and scalp with a dermoscope. They are not familiar with hair and scalp trichoscopy patterns and have few resources to acquire specific training. Most dermatology meetings do not offer a single session on scalp dermoscopy.

Another barrier to broader application is possibly that dermatologists may believe that the cost-benefit ratio of purchasing the instrument and the time and for training yields very little to their practice, owing to the relative rarity of hair disorders. Perhaps the best way to dispel this misconception is to state the facts: (1) trichoscopy does not require expensive tools—in fact, most dermatologists already have a dermoscope; (2) trichoscopy is useful for the evaluation of every patient with hair disorders; (3) trichoscopy is noninvasive and very well accepted by patients; and (4) its routine use may improve the quality of care for patients with hair and/or scalp conditions and reduce the necessity for such invasive procedures as scalp biopsies.

How can we narrow this gap and convince dermatologists to use their dermoscope as a tool to evaluate the hair and scalp of their patients? Trichoscopy training is relatively fast and simple and should be offered at continuing medical education (CME) conferences and workshops as well as through CME articles and Web-based training modules. These venues would offer training to all dermatologists and would close the gap.

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PRACTICE GAPS

Trichoscopy in Clinical Care

The role of dermoscopy in the evaluation of pigmented lesions is largely accepted worldwide, and most dermatologists today use a dermoscope in their daily practice. The role of dermoscopy in the diagnosis of hair disorders is also established, but only a few dermatologists use their dermoscope to look at the scalp of their patients. This is a professional practice gap.