

## A child with nonscarring alopecia

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**A** 4-year-old girl presented in her usual state of good health except for two areas of alopecia (hair loss) involving the left parietal scalp (*Figure 1*). The child was taking no medications and had no significant past medical history. Her hairstyling did not include repetitive, tight braids (*Figure 2*).

On physical examination, her scalp had no scaling or pustules. She had no palpable occipital lymphadenopathy. The result of a Wood's light examination was negative.

*What are the diagnosis and prognosis, and what are the treatment options?*



**Figure 1.** Left temporoparietal scalp with diffuse alopecia and no associated scaling or pustules.



**Figure 2.** The patient's hairstyle did not feature repetitive, tight braids.

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**DIAGNOSIS:** Trichotillomania. At least three times during the office visit, the patient reached up with her left hand and twirled and pulled at her hair at the site of involvement, confirming our clinical suspicion of trichotillomania.

## DISCUSSION

Patients with trichotillomania may present in the dermatology office but often require psychiatric intervention and co-management. This dermatologic disorder is one of several that have psychosocial aspects that must be addressed for full disease resolution. Trichotillomania was first described in 1889 by the French dermatologist François Henri Hallopeau (1). In 1987, almost a century later, it was recognized as a distinct disorder by the American Psychiatric Association (2). The lifetime prevalence is <1% if strict criteria from the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (DSM-IV-TR) are applied (3). There is a female predominance (4). The scalp is the most common site of involvement; however, hair may be pulled from any area, including the eyelashes, eyebrows, legs, and pubic region (5).

The disorder can begin in childhood, adolescence, or adulthood. One third of children with trichotillomania have onset before age 10. If hair pulling begins before age 8, the disorder is generally self-limited (4). Disease that begins in adolescence is usually chronic and is more likely to be associated with comorbid psychiatric disorders (depression, anxiety, obsessive-compulsive disorder, body dysmorphic disorder, eating disorders, and substance abuse) (2, 6). Adult onset is associated with a chronic course and poor prognosis for disease resolution.

Two clinical subtypes of trichotillomania have been defined: *automatic/sedentary* and *focused*. The automatic/sedentary type is more common and is characterized as hair pulling while engaging in other activities. Patients are usually unaware that they are pulling their hair. In contrast, the focused type involves setting aside time and attention specifically for hair pulling. Prepulling tension is relieved after pulling (2, 7).

Trichotillomania is listed in the DSM-IV-TR under "Impulse-Control Disorders Not Elsewhere Classified." The DSM-IV-TR criteria include the following:

- A) Recurrent pulling out of one's hair resulting in noticeable hair loss.
- B) An increasing sense of tension immediately before pulling out the hair or when attempting to resist the behavior.
- C) Pleasure, gratification, or relief when pulling out the hair.
- D) The disturbance is not better accounted for by another mental disorder and is not due to a general medical condition (e.g., a dermatological condition).
- E) The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning (8).

Controversy exists regarding these criteria because there is no distinction between children and adults. Children often do not meet DSM-IV-TR criteria because they do not have the tension/relief component (9, 10). It has been suggested that trichotillomania be included under anxiety disorders because it shares some features of obsessive-compulsive disorder (e.g., compulsive urges and ritualistic behaviors) (11). A new diagnostic category, displacement activity disorder, has also been proposed that would

include "nervous habits" such as trichotillomania, face picking, and nail biting (9, 12).

## Associations

Children with trichotillomania have been described as "fiddlers" and obtain a calming effect from tactile stimulation via the fingertips. Pulling the hair of siblings, pets, dolls, and stuffed animals has also been reported (9). Family psychosocial stressors are present in many patients with trichotillomania. Commonly reported stressors include separation from a familiar object (e.g., moving to a new house) or person (e.g., when parents divorce), birth of a younger sibling (sibling rivalry), recent illness/hospitalization, school, and sexual abuse (9). Child abuse has also been associated with trichotillomania (13).

Approximately 30% of patients with trichotillomania engage in trichophagia (eating hair) (2). In 1% of trichophagia patients, a trichobezoar develops that requires surgical removal (2). If the tail of the bezoar extends into the small intestine, numerous complications may occur, such as anemia, intestinal obstruction, intussusception, ulceration, and perforation (9).

## Differential diagnosis

Alopecia is clinically and histologically categorized as scarring or nonscarring depending on whether or not hair follicles are destroyed. The scarring alopecias include diseases such as lupus erythematosus, lichen planopilaris, pseudopelade of Brocq, and folliculitis decalvans (14). The most common nonscarring alopecias include androgenetic alopecia (male-pattern baldness), telogen effluvium (e.g., associated with childbirth, thyroid disorders, drugs, or stress), alopecia areata, tinea capitis, traction alopecia, and alopecia caused by medication such as chemotherapy. Additionally, some alopecias can be nonscarring but in chronic cases can become scarring if interventional therapy is not successful for disease control (e.g., tinea capitis with secondary bacterial infection, trichotillomania).

## Diagnosis

History and physical examination can establish the diagnosis of the most common nonscarring alopecias (*Table*). An appropriate hair loss workup can be quite expensive and may include thyroid function tests, fungal scrapings and culture, hair pull, a complete blood count, and antinuclear antibody titers. A scalp biopsy may be helpful in equivocal diagnoses; however, it is wise to refer the patient to a hair expert so the correct type of biopsy and the correct biopsy site are chosen. Additionally, clinicopathologic correlation is of the utmost importance; therefore, biopsies should be evaluated by a hair expert or a dermatopathologist.

On physical examination, clues for diagnosing trichotillomania include hairs of varying lengths, broken short hairs, vellus or indeterminate hairs, and empty follicular orifices. Trichotillomania biopsies reveal trichomalacia (an incompletely keratinized, distorted, and pigmented hair shaft), empty follicles, and dilated ostia with minimal inflammation.

## Treatment

No medication is approved specifically for the treatment of trichotillomania. Given the similarity of trichotillomania to obsessive-compulsive disorder (11), it is not surprising that anti-

**Table. Nonscarring alopecias commonly seen in the clinical setting**

Type of alopecia	History/symptoms	Findings upon examination/testing
Tinea capitis	<ul style="list-style-type: none"> <li>• Increased scaling of scalp</li> <li>• Variable pruritus</li> <li>• Increased hair breakage</li> </ul>	<ul style="list-style-type: none"> <li>• Erythematous scaly patches on scalp with decreased number of hairs</li> <li>• Postoccipital lymphadenopathy</li> <li>• Positive fungal culture from scalp swabbing</li> <li>• Wood's light test result positive for dermatophyte ectothrix infections (outside the hair shaft); however, this test is useless for endothrix infections (inside the hair shaft), which are the most common type currently in the USA</li> </ul>
Androgenetic alopecia	<ul style="list-style-type: none"> <li>• Frequently, a family history of hair loss, given autosomal dominant transmission</li> <li>• Bitemporal recession in men and progressive thinning of the vertex of the scalp in women</li> </ul>	<ul style="list-style-type: none"> <li>• Miniaturization of hairs (finer, less pigmentation) to vellus hairs. The percentage of time spent in telogen is lengthened, while anagen times are shortened.</li> </ul>
Telogen effluvium	<ul style="list-style-type: none"> <li>• Recent traumatic event (childbirth, weight loss, psychological stress)</li> <li>• Medications (beta-blockers, angiotensin-converting enzyme inhibitors, anticonvulsants, antipsychotics [lithium])</li> </ul>	<ul style="list-style-type: none"> <li>• Diffuse thinning</li> <li>• Increased shedding (greater than the normal 50 to 100 hairs per day)</li> <li>• Hair pull: increased telogen hairs</li> </ul>
Alopecia areata	<ul style="list-style-type: none"> <li>• Well-defined patches of hair loss, which resolve spontaneously</li> </ul>	<ul style="list-style-type: none"> <li>• Smooth epidermis with visible hair follicles</li> <li>• Hairs that have regrown white</li> <li>• "Exclamation point" hairs, in which the hair is broader at the end than at the scalp level</li> <li>• Nail pits</li> </ul>
Traction alopecia	<ul style="list-style-type: none"> <li>• History of tight hairstyling, including braids or ponytails worn the same way for days, months, or years</li> </ul>	<ul style="list-style-type: none"> <li>• Symmetrical thinning at sites of greatest tension on the hair (e.g., temples for tight ponytails)</li> </ul>

depressants such as selective serotonin reuptake inhibitors (15, 16), buspirone, trazodone, and bupropion (17) are most commonly used. The use of lithium in the treatment of trichotillomania has also been reported (18, 19). Additionally, antipsychotics such as pimozide (20) and olanzapine (21) have been useful.

Habit reversal therapy is a type of cognitive behavior therapy that has proven effective in the treatment of trichotillomania. A study done in 1980 by Azrin et al showed a decrease in hair pulling of 74% (22). This therapy involves teaching patients about their disorder and providing relaxation techniques and specific muscle-tensing activities. Theoretically, the habit of muscle tensing replaces the habit of hair pulling.

Finally, hypnotherapy has been reported useful by some authors (23).

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