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Trichotillomania: An Important Psychocutaneous Disorder

Alexander M. Witkowski; Robert A. Schwartz, MD, MPH; Camila K. Janniger, MD

Trichotillomania (TTM) is a type of alopecia due to a psychocutaneous disorder, a self-induced illness classified as an impulse control disorder but with features of both obsessive-compulsive disorder (OCD) and addictive disorders. Although most common in children, this repetitive pulling out of one's own hair can occur at any age. The target usually is hair of the scalp, eyebrows, eyelashes, and pubic area using fingers, brushes, combs, and tweezers. Therapy for TTM can be challenging.

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Trichotillomania (TTM) is an unusual type of alopecia classified as an impulse control disorder but with features of both obsessive-compulsive disorder (OCD) and addictive disorders.[1,2] Trichotillomania involves the repetitive pulling out of one's own hair, leading to such complications as notable hair loss; trichophagia; trichobezoar; anorexia; vomiting; and, in extreme cases, death.[3] It was first described by the French dermatologist Hallopeau[4] in 1889. It has been reported across all age groups and tends to have a chronic course in adults. The peak of onset in children is 3 to 5 years of age as well as early adolescence; the average age of onset is 12 years.[3,5-7] The common sites of hair pulling are the scalp, eyebrows, eyelashes, and pubic area. Common tools for hair pulling are fingers, brushes, combs, and tweezers.[3]

Mr. Witkowski is from Jagiellonian University Medical College, Kraków, Poland. Drs. Schwartz and Janniger are from Dermatology and Pediatrics, New Jersey Medical School, Newark.
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Correspondence: Robert A. Schwartz, MD, MPH, Dermatology, New Jersey Medical School, 185 South Orange Ave, Newark, NJ 07103-2714 (roschwar@cal.berkeley.edu).

Epidemiology

An exact statistical representation of the number of individuals with TTM in the general population is not available.[8,9] A number of these patients avoid visiting their physicians and going into public places where their disorder would be revealed.[9-11] In addition, adults may conceal their plucking habit with wigs, hats, and makeup. The prevalence has been noted to be 0.6% to 3.4% of the total population, with a female to male ratio of 2 to 1.[12-14] The incidence of TTM appears to be higher in children than in adolescents and adults.[15] A small percentage of patients have first-degree family members with the same disorder as well as a history of OCD, depression, and alcohol and drug abuse.[16-20]

Etiology

Although no clear biologic cause has been identified, outcome results showing favorable responses to selective serotonin reuptake inhibitors and dopamine blockers in the treatment of TTM suggest a deregulation of the serotonin and dopamine system.[3] In addition, because of the efficacy of naltrexone hydrochloride, an opiate blocker, in the treatment of isolated cases of TTM, a role for endogenous opiate activity in TTM has been implicated. Limited neurostructural and neurofunctional research has shown reduced left putamen and left ventricular volume in TTM compared to healthy controls, and an increase in right and left cerebellar and right superior parietal functioning. A decrease in frontal, parietal, and left caudate activity has been found in patients with more severe hair pulling.[15] Psychologic factors involved in TTM range from mild frustration to more intense psychologic disturbances. Some psychoanalysts view the act of pulling out hair as a symbol of castration.[21] In children, this disorder may be viewed as analogous to nail biting or thumb sucking.[22] It commonly arises when there is an introduction to psychosocial stress. Some examples

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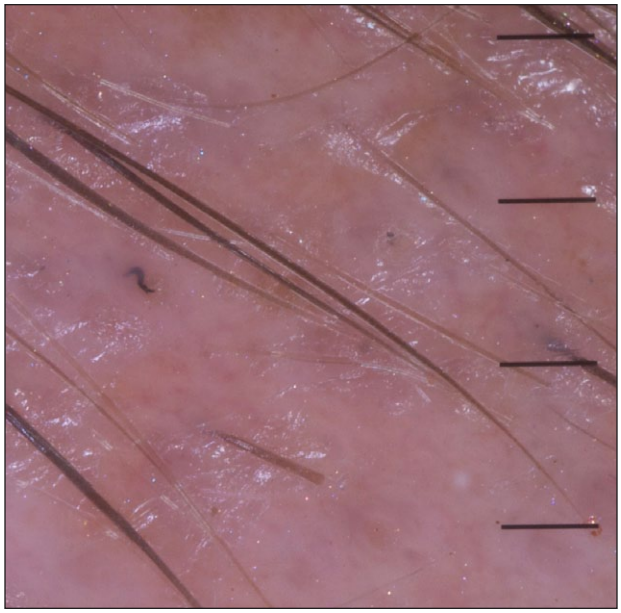

Figure 1. Trichotillomania with coiled hair seen on dermoscopy (original magnification ×10).

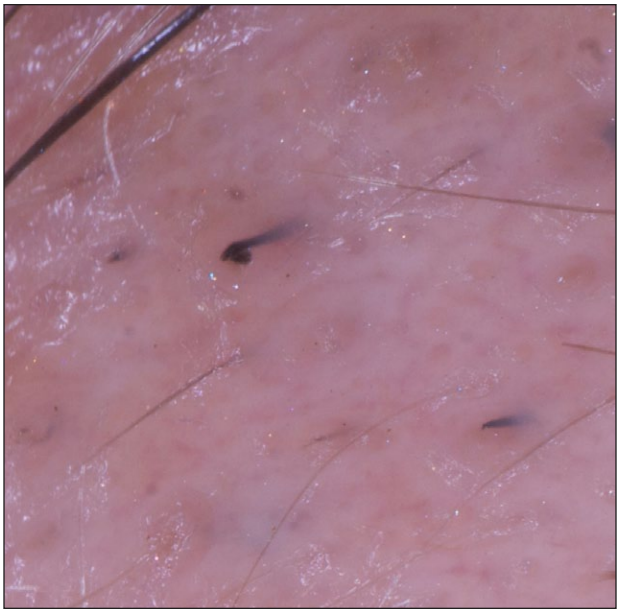

Figure 2. Trichotillomania with ingrown hair seen on dermoscopy (original magnification ×10).

in children include a disturbed family unit, moving, hospitalization, or a distorted relationship between the guardian and child.[23] There is a higher than anticipated incidence in relatives of those affected.[24] In adults, the compulsion to pull hair can arise from stress at work or home, depression, or low self-esteem. Trichotillomania also is viewed as a subtype of OCD.[25-27]

Clinical Characteristics

The hallmark of TTM is diffuse hair loss characterized by irregular nonscarring patches of alopecia that are most commonly found on the scalp with prominent involvement of the crown, occipital, and parietal regions.[8] It is most often localized to the frontoparietal scalp; however, loss of eyebrows, eyelashes, and pubic hairs also may be evident. It is common for patients to pull hairs from more than one region and on the side of the body contralateral to the dominant hand.[5,11] Hair may be pulled out individually or in clumps.[5,11,23]

Two patterns of hair pulling have been identified in TTM—automatic and focused—and have been assessed in the Milwaukee Inventory for Subtypes of Trichotillomania–Adult Version, which provides a 5-item automatic and 10-item focused pulling scale.[2,26] The automatic form occurs outside of one's awareness and is more common. It usually arises during sedentary activities such as while lying in bed, watching television, using the computer, or reading. The focused type is an intentional act centering on the actual task of pulling the hair out in response to something that is creating anxiety for the patient. Frequently, there are components of both automatic and focused pulling.[3,26]

In addition to diffuse hair loss, short broken-off hairs of varying lengths are noted. A "Friar Tuck" appearance refers to the extreme situation in which vertex and crown alopecia is marked with peripheral rim–spared hair.[16,28] In up to 48% of individuals with TTM, oral manipulation of detached hair occurs, with 10% producing trichophagy.[3] Trichobezoar can be a serious complication, leading to anorexia, obstruction, and potentially death.[26,29,30] Other less serious complications include a secondary infection at the site of hair pulling, changes in the color and texture of the hair, and muscle strain of the hand pulling the hair due to repetitive motion.[22,26,31]

Histopathology

The presence of normally growing hairs among empty hair follicles surrounded by noninflammatory dermis is prevalent in TTM. Confirmation of diagnosis is accomplished with scalp biopsy. Twenty-one percent of biopsies show torn hair follicles surrounded by exudate or focal hemorrhage with remnants of a hair bulb.[32,33] Seventy-four percent of specimens show catagen hairs that are accompanied by dilated and empty catagen basement membranes.[32] In the infundibular areas, pigment casts are found in 61% of specimens as well as perivascular lymphocytic inflammation in 53% of cases in the superficial dermis; however, a loosely arranged perifollicular inflammatory infiltrate is more typical

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of alopecia areata. Trichomalacia is common when damaged follicles fail to produce normal hair shafts.[32-34] Evidence of split hairs reflects traumatic injury to hair shafts.[33]

Dermoscopy

Dermoscopy in the evaluation of hair disorders improves diagnosis beyond simple clinical inspection.[27,35-38] Key features seen under dermoscopic evaluation are broken hairs at different levels, yellow dots, split hairs, coiled hairs from pulling (Figure 1), and ingrown hairs (Figure 2), all surrounded by noninflammation.[27] The presence of these features may facilitate the distinction of TTM from alopecia areata.[36] The use of dermoscopy may aid in clarifying the diagnosis of TTM and reduce the need for a biopsy, which can be traumatic for children.

Differential Diagnosis

Alopecia areata is the most common form of alopecia requiring distinction. Traumatic alopecia, tinea capitis, lichen planopilaris, androgenic alopecia, monilethrix, pili torti, scarring alopecia, frontal female pattern alopecia, and telogen effluvium also may mimic TTM.[7,8,15] Other possibilities include systemic lupus erythematosus, secondary syphilis, lymphoma, and thyroid disease.

Diagnosis

Recognition of TTM may be challenging.[14,26,35] Children tend to be easier to diagnose than adults because adults may be resourceful when trying to conceal their habit. Children tend to be brought to a physician by concerned guardians who may have observed hair plucking.[22,38] Dermoscopy may facilitate the diagnosis of hair disorders such as TTM, alopecia areata, and tinea capitis.[35-38]

Therapy

Because there is a substantial connection to psychopathology, it is important to devise a treatment plan in which both dermatologic and psychiatric components of the disorder can be remedied. Approaches include both nonpharmacologic as well as pharmacologic modalities. Behavioral options are more efficacious than pharmacologic interventions in children.[39,40] Current treatments include behavioral and cognitive therapy, psychotherapy, hypnosis, and psychopharmacology. Habit reversal treatment has been especially effective and involves teaching patients to recognize the impulse to pull their hair and to replace this urge with an alternative acceptable motor behavior that is not harmful.[3,14,15,41,42]

Depending on the age of the patient and possible comorbid conditions, such as an anxiety disorder or depression, one or more approaches used in combination may be beneficial.[40,43] The management depends on the age group of the patient. Preschool-aged children (age range, 0–6 years) are treated by first educating the guardians about the disorder and available treatment choices.[15] This age group has the best outcome and usually responds to behavioral therapy alone, rarely needing medication. Behavioral techniques include changing parental attitudes and behavior, response prevention, facial screening, reward system, and time-out.[14,15,44] Children aged 7 to 12 years respond well to behavioral therapy that may include habit reversal treatment and positive reinforcement.[15] Pharmacotherapy occasionally is used as an adjunct and may include selective serotonin reuptake inhibitors such as fluoxetine hydrochloride or clomipramine hydrochloride.[15,43-50] Although a behavioral approach has been favored as the first-line single modality treatment in children and adolescents, controlled studies of monotherapy and combined treatment approaches are needed.[15]

Treatment in adolescence (age range, 13–17 years) continues to revolve around education of the patient and family in addition to behavioral therapy. Habit reversal treatment, relaxation training, and negative practice training are common techniques.[15] Medication may be used as an adjunct in more complicated cases or in patients with comorbidities. Fluoxetine hydrochloride and clomipramine hydrochloride have been used most.[14,43] On occasion, hypnotherapy or psychotherapy has been helpful.[15]

Adults respond best to a combination of behavioral and cognitive therapy and pharmacotherapy.[3,14,42] Habit reversal treatment and negative practice training, which involves the ritual of grooming one's hair without pulling it out, are 2 commonly used treatment modalities that have been studied most.[42] Other drug treatment options include fluoxetine hydrochloride, citalopram hydrobromide, venlafaxine hydrochloride, clomipramine hydrochloride, valproic acid, lithium carbonate, *N*-acetylcysteine, topiramate, olanzapine, risperidone, and aripiprazole.[3,40,42,45,51-56] A therapeutic plan stratified by age of onset may guide effective treatment options.[57]

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