

Trichotillomania: Behavioral Symptom or Clinical Syndrome?

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Trichotillomania is defined literally as a "penchant (mania) for pulling one's own hair" (1). Hair pulling as a symptom has been reported to occur in association with many conditions, including normal development, personality and developmental disorders, and psychosis (2). In contrast, the syndrome of trichotillomania appears to arise de novo and is characterized by urge-driven, repetitive hair pulling, increased tension when pulling is resisted, and a sense of relief after pulling (DSM-IV). Substantial distress and noticeable hair loss are also diagnostic; the condition is frequently chronic and unremitting (2). The pathology of trichotillomania spans both neurological and psychosocial domains, and we present here a case that illustrates many of the complexities of the phenomenology and treatment of this disorder (3-5).

CASE PRESENTATION

Ms. A, a 27-year-old, single white woman, came to the Massachusetts General Hospital Trichotillomania Clinic for evaluation and treatment of her chronic hair pulling. Her chief complaint was that she "had been suf-

fering with this disorder for 13 years and wanted to better manage it."

History of Present Illness

Ms. A recalled that her hair pulling began at approximately age 14, when she noted an "ingrown scalp hair" and pulled it. She then developed a "fascination with the hair root," as well as a sense of "release" when the hair was pulled. Sporadic, brief episodes of pulling a few hairs per day gradually progressed over several years to the point where she had numerous daily episodes taking up to several hours each day. Pulling was worsened during the period preceding her menses, during periods of confinement such as when she was ill or in the winter months, and when she was upset or under increased stress, including school- and work-related pressures (6). Ms. A also reported increased hair pulling in certain situations (such as talking on the phone) and during periods of "forward thinking" in which she was worrying about how to handle an upcoming decision or event. The hair pulling seemed to be cued by a sensory "itch" in her scalp that caught her attention and elicited the urge to pull. She frequently used tweezers to dig and pull at hairs, especially when her depilation became severe and there were only very short early-regrowth hairs available to pull. These early-growth hairs were most strongly associated with the sensory urges.

The hair pulling itself was a surprisingly complex and ritualized process. Ms. A would often use a mirror to search carefully for just the "right" hair to pull and then tug it out quickly, attempting to get the entire hair, including the root. She would then bite the hair root and bulb, chew, and then swallow the root, spitting the rest of the hair onto the floor. She described a "good" root as including capillaries and red blood; a "bad" root did not include blood and did not "pop" when chewed. Two "really good" roots were usually sufficient to stop the pulling temporarily. Eventually, however, she would feel driven to "find another one similar to the pulled one." She would continue to pull, sometimes for hours at a time, until the "perfect" hair was found and she obtained a sense of rightness or completion.

As Ms. A's hair pulling worsened and her hair loss increased, she began wearing a

bandanna to cover areas of hair loss, then a scarf, and after several years, a wig to cover up the progressive baldness. She reported that she had been a very promising athlete, particularly in swimming and track, but gave up competitive athletics because of an intense fear that her trichotillomania would be exposed. Similarly, although she was a student of considerable academic potential, her grades periodically worsened because studying was directly associated with hair pulling. She was forced to make the difficult choice between having more hair or better grades; as with most adolescents, in whom appearance is intimately tied to self-esteem and sense of competence, she frequently chose her hair (3). Ms. A's hair pulling also caused difficulties with social relationships. She was extremely uncomfortable about dating because of fear that her date would discover her "shameful habit." She was engaged to be married when she first came to the Trichotillomania Clinic but had not let her fiancé see her without her wig, despite the fact that their relationship had continued for over 5 years.

Past Psychiatric History

Ms. A was initially evaluated at age 14 by her pediatrician for a "bald spot" on her posterior scalp. Even when questioned directly, she steadfastly denied pulling her hair, but the pediatrician correctly diagnosed the condition as "self-inflicted." After several visits, Ms. A felt "backed into a corner" and admitted to pulling her hair, but she minimized the impact of this problem to her doctor and her mother. She was told that she would most likely "outgrow her pulling habit," and a monitoring treatment approach was suggested. When that failed, she was taken to a hypnotist and had several sessions of hypnotherapy in which suggestion and visualization techniques were used. She was able to stop hair pulling for a total of 4 days after this treatment.

Between the ages of 16 and 19 years, Ms. A had weekly psychodynamic psychotherapy sessions with a clinical social worker. The focus of the treatment was on uncovering the stress or problem that presumably led to the hair pulling. During this time, several family meetings were also held, but no particular family problems that appeared to

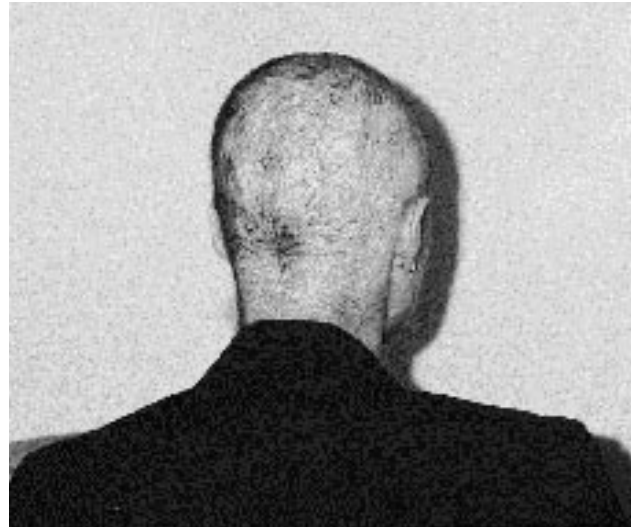
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FIGURE 1. Posterior View of the Patient Wearing a Wig Before Treatment for Trichotillomania



FIGURE 2. Posterior View of the Patient With the Wig Removed Before Treatment for Trichotillomania



be related to her hair pulling were found. In addition, she saw a psychiatrist at age 17 and was prescribed diazepam (2.5 mg/day) for "stress"; she remained on this regimen for approximately 1 year. Neither the psychotherapy nor the diazepam had an appreciable effect on her hair pulling, and she entered college as a bald woman.

She next sought treatment from a behavioral therapist and again had weekly sessions for over 3 years (from ages 19 to 22). First, she underwent five sessions of biofeedback training to decrease stress. Subsequently, she was taught several techniques of behavioral treatment, including some elements of awareness training (such as keeping a diary of her hair pulling), aversive therapy (wearing a rubber band on her wrist and snapping it when she felt urges to pull her hair), and some components of habit reversal training (7), but apparently she did not receive an integrated program of behavior therapy. Ms. A reported that these behavior therapy sessions were also of little help, since she continued to pull her hair so much that she remained bald.

After graduating from college, she had a brief trial of clomipramine treatment, reaching a maximal dose of 100 mg/day. She continued clomipramine therapy for over 6 months without benefit, possibly because aversive side effects limited dosage adjustments.

Past Medical History

Ms. A enjoyed good health generally. Her past medical history was unremarkable, and she had no acute or chronic conditions. There were no previous medical or psychiatric hospitalizations. She had been treated several times with topical antibiotics for superficial scalp infections resulting from her hair pulling and picking at her skin. When she presented herself for evaluation and treatment she was taking only oral contra-

ceptives. Ms. A had a childhood history of motor tics and intermittent repetitive behaviors, including eye blinking, finger sniffing, nail biting, and skin picking. She also recalled some counting rituals, but these did not cause distress or interference and could not be considered to represent obsessive-compulsive disorder (OCD).

Family, Personal, Social, and Substance Use History

Ms. A's family history was notable for severe nail biting and skin picking by her mother and skin picking by her sister. Her maternal grandfather had a tendency to rock in his seat, and her younger brother was described as "extremely introverted, neat, and overly organized," with a pronounced sensitivity to sounds. Her 14-year-old nephew had a motor tic disorder and had just been diagnosed with trichotillomania. A maternal aunt suffered from depression, and an uncle had had a "nervous breakdown."

As mentioned above, Ms. A attended college and obtained a bachelor's degree. She was engaged to be married when first evaluated. She now works successfully in a retail business.

There is no history of cigarette smoking or substance abuse. She is a very light consumer of alcohol and caffeine.

Mental Status Examination

On mental status examination, Ms. A was a healthy-appearing, professionally attired woman wearing a wig (figure 1). Her scalp was nearly totally bald, with areas of scarring, scabs, and wisps of dark hair (figure 2). She was articulate, with normal speech and affect. There was no psychomotor agitation or retardation. Her thought process was rational, and there was no evidence of psycho-

sis. There were no hallucinations or delusions. Cognition was normal. Overall, there were no neurovegetative symptoms. She appeared to have mild depressive and anxiety symptoms. There were no suicidal or homicidal thoughts. Her judgment and insight were good.

Course of Treatment

At initial evaluation, Ms. A reported pulling scalp hairs up to 3 hours per day, typically divided into 15–30 brief, focused episodes. She was found to have moderate levels of depression, anxiety, and hair-pulling symptoms; her Beck Depression Inventory (8) score was 13, her Beck Anxiety Inventory (9) score was 16, and her Massachusetts General Hospital (MGH) Hairpulling Scale (10, 11) score was 18. On the MGH Trichotillomania Impact Scale (unpublished), the psychosocial impact of her disorder was noted to be severe with respect to need to cover up areas of hair loss, sense of unattractiveness, and loss of control.

Ms. A was presented with several treatment options including both behavioral and pharmacologic interventions. She elected a trial of combination therapy with paroxetine (20 mg/day) and behavioral treatment initially directed at self-monitoring and habit reversal techniques (7). She was also referred to the Trichotillomania Learning Center, a national nonprofit self-help organization founded to help hair pullers, to obtain further information and support regarding her condition (Trichotillomania Learning Center, 1215 Mission St., Suite 2, Santa Cruz, CA 95060; telephone: 408-457-1004).

At 2-week follow-up, Ms. A reported that she had reduced her hair-pulling episodes to two or three per day, for a total of less than 10 hairs pulled. She said that she "felt less rewarded when pulling the hair bulb" and that she was no longer "constantly fighting

the urge to pull." She rated herself as overall "very much better." However, at her next visit several weeks later, she had suffered a substantial setback. She had begun to pull hairs from her legs in addition to those on her head. She felt that the exacerbation was due to mounting stress regarding her upcoming wedding—after a disagreement with her mother over her wedding plans, she "went home and pulled her hair in frustration." Her MGH Hair-pulling Scale score had increased to 22, her Beck Depression Inventory score was 12, and her Beck Anxiety Inventory score was 7. Self-monitoring instructions were reviewed, the paroxetine dose was increased to 40 mg/day, and lorazepam (0.5 mg t.i.d.) was prescribed to be used as needed for increased anxiety.

Several weeks later, Ms. A reported that her hair pulling was "way down." Her MGH Hair-pulling Scale score was 4, her Beck Depression Inventory score was 0, and her Beck Anxiety Inventory score was 3. She had decreased the paroxetine dose to 20 mg/day because of "excessive fatigue" but was continuing to use the lorazepam with some regularity. The paroxetine dose was increased to 30 mg/day in an attempt to maintain improvement, and the habit reversal techniques were reviewed.

At her next visit, she once again reported increased hair pulling related to stress at home and at work. She complained of pulling her hair so long a few days previously that her elbow and hand hurt. Despite this, her rating scale scores remained stable (MGH Hairpulling Scale score=6, Beck Depression Inventory score=4, Beck Anxiety Inventory score=0). However, the paroxetine dose was increased to 50 mg/day, and she participated in several sessions of behavioral treatment. When Ms. A returned to the clinic several weeks later, she remained concerned over worsening hair pulling and attributed it to worries about her nephew, who had been recently diagnosed with a tic disorder and also had begun to pull his hair. Clomipramine (25 mg/day) was added to her regimen. At follow-up several weeks later, she again reported improvement in her hair pulling, with decreased urges. This pattern of waxing and waning symptom severity continued for several months. During this time, she gradually withdrew the clomipramine by tapering her dose (because of sedation) but maintained the dose of paroxetine (50 mg/day) and the occasional use of lorazepam.

Ms. A now reported less urge-driven hair pulling but felt that she was frequently pulling "out of boredom." Despite the perception that it was less urge-driven, her hair pulling had increased dramatically (her MGH Hairpulling Scale score had increased

FIGURE 3. Posterior View of the Patient With Hair Regrowth After Successful Treatment for Trichotillomania^a



^aNote residual areas of alopecia.

to 20). She would pull her hair while sitting at her desk throughout the day and also spent 15–30 minutes twice a day in a bathroom stall pulling and tweezing her scalp hair. She was also pulling more in the evening; a typical pattern was to return home from work and spend 1–2 hours in the bathroom pulling out scalp hairs with a pair of tweezers, and then, after her husband had gone to bed, to return quietly to the bathroom and resume picking at her scalp. She described her scalp as "complete stubble," which at times horrified her and at other times she accepted as inevitable. The paroxetine dose was increased to 60 mg/day with reinforcement of the need for increased behavioral monitoring and use of habit reversal techniques. She complied with those recommendations and 1 month later reported that she was pulling hair only minimally and that her symptoms were in "good control."

Ms. A maintained this level of remission for several months before suffering another relapse. This time, haloperidol (0.25 mg/day) was added to her medication regimen, on the basis of her childhood history of tics and reports suggesting that neuroleptics could play an adjunctive role in the treatment of trichotillomania (12, 13). After 2 weeks, the dose was increased to 0.50 mg/day because of persistent, strong hair-pulling urges. Ms. A said that the haloperidol "definitely helped" reduce the urges and sensations associated with pulling. Following this increase in dosage, her MGH Hair-pulling Scale score was 11, her Beck Depression Inventory score was 3, and her Beck Anxiety Inventory score was 1. Despite improvement, she continued on haloperidol treatment for only 3 months because she did not think the benefits outweighed the potential risks of long-term use.

At about this time, Ms. A began to attend meetings of a local trichotillomania support

group. She had previously been in contact with the Trichotillomania Learning Center and had attended several symposiums on the disorder, but she had resisted talking with other women about her trichotillomania because she felt ashamed of her hair pulling. Once she started attending the support group meetings, she found it very helpful to be able to share her experiences and to derive comfort from "all being in the same boat."

Ms. A reported that she was beginning to gain control of the numerous and complex factors that provoked and maintained her hair pulling. She reported that the medication had successfully reduced her hair-pulling urges, and the behavior therapy had improved her ability to resist any remaining impulses. She wanted to try a period of time without medication to determine how she would fare, and so her paroxetine dose was gradually tapered over the subsequent several weeks.

When Ms. A was examined 10 months later, her progress was impressive. She had given up wearing her wig and had a short, thin but full head of hair (figure 3). Her initial improvement was clearly in response to her drug treatment, but her long-term success was attributed to a combined process of interventions including medications, behavior therapy, and shared psychological experiences through the support group meetings.

DISCUSSION

Ms. A presented a very complex set of affective and behavioral symptoms, with hair pulling as a core behavioral symptom. Is this trichotillomania, and if so, how representative is her case?

Dr. Christenson: This case is illustrative of many common features of trichotillomania in that Ms. A is a young adult woman who started pulling her hair as an adolescent and had a very chronic, unremitting course. Trichotillomania has been traditionally considered to be rare, but actually it may not be uncommon. Although a large systematic study of the general population has yet to be conducted, a survey of 2,579 college freshmen (14) found that 0.6% of both female and male respondents had had trichotillomania (according to strict DSM criteria) at some point during their lives. If one broadened the definition of trichotillomania to include all repetitive hair pulling that results in visible hair loss, then the

prevalence increased to 3.4% of females and 1.5% of males, or 2.5% of the total sample. Other studies have found comparable rates, with a female-to-male ratio of approximately 2:1 (15). In clinic samples, however, females are encountered far more commonly than males, at a ratio of nearly 10:1 (16).

The onset of Ms. A's symptoms during adolescence is consistent with that observed in large clinical samples, in which the average age at onset is around 13 years (5). This patient's hair pulling initially involved her scalp and later her legs as well. The scalp is the most commonly affected hair site for trichotillomania, although lash, brow, pubic, facial, and extremity hair may also be affected (5). As with this patient, the majority of patients pull from more than one site. The patient's oral manipulation of pulled hair is also quite common. Some form of oral behavior (mouthing, chewing, or ingestion) has been reported to be present in 48%–77% of patients, with hair chewing or biting (usually of the hair bulb or root) present in one-third of cases and complete ingestion (trichophagy) of at least some pulled hair in 5%–18% of patients (5, 16, and unpublished manuscript by C.S. Mansueto).

This patient spent a great deal of time and energy coping with the aftermath of her hair pulling, as do many patients. She disguised her baldness with head coverings and, eventually, a wig. She hid her alopecia from her future husband for over 5 years, and she avoided situations in which exposure was threatened. This avoidance is nearly universal in trichotillomania. Avoidance of windy conditions, swimming, hairdressers, intimate relationships, and scenarios in which others might look down on an affected scalp (e.g., bleachers, restaurants) is common (17). Of concern, women with trichotillomania frequently avoid dental, ophthalmologic, gynecologic, and other medical examinations because of fear that their hair pulling will be discovered (18).

How should primary care physicians and other clinicians approach the care of patients with hair pulling?

Dr. Swedo: The most important job of the primary care physician is to recognize the hair pulling as trichotillomania. This requires a careful history and physical examination by an empathic clinician. Because the patient feels such shame and humiliation, it may be quite

difficult for her to admit that she is pulling her hair. Often she will continue to deny that she is responsible for her bald patches until she is confronted with irrefutable evidence. Scalp biopsies are sometimes necessary to provide such proof. Many patients have told us that they have hidden the disorder for so long, from so many people, that they just cannot bring themselves to admit it to their physicians—even when they are seeking help for the hair pulling.

In large part, this shame and secrecy is the result of isolation and the feeling that “I must be the only one crazy enough (or weak-willed enough) to do such a nasty, destructive thing to myself.” The Trichotillomania Learning Center has been tremendously helpful in this regard. As in Ms. A's case, the support group provides not only information and support but also tangible proof that trichotillomania is a common condition shared by many women.

What are the complications of chronic hair pulling?

Dr. O'Sullivan: Medical and psychological complications of trichotillomania can be severe and are typically underrecognized. The present case demonstrates several of the more obvious ones, namely, alopecia, scarring, skin infections, and trauma to the hair itself. Many women use implements such as tweezers to extract hairs and often cause local skin trauma as well. Other medical morbidities include bowel obstruction secondary to trichobezoars and a range of musculoskeletal and neurological difficulties caused by the repetitive pulling, including muscle strain and overuse injuries such as carpal tunnel syndrome (18). Often patients (and consequently, their physicians) do not recognize the association between the hair pulling and their complaints of chronic back, neck, or arm pain.

Psychological morbidity varies but can sometimes be severe. Self-esteem in young women with trichotillomania has been found to decrease as the frequency of the pulling increases (3). For adolescents, development of positive self- and body images, autonomy, self-control, and confidence is frequently hampered by chronic hair pulling. Surprisingly high rates of body image dissatisfaction, including body dysmorphic disorder, are found in this group (3). OCD co-occurs in 13%–27% of cases, leading some researchers to consider similarities between the two disorders (2, 5, 14, 17, 19). Other psychi-

atric comorbidity includes major depression (51.6%), generalized anxiety disorder (27%), and alcohol abuse/dependence (19.4%) (5).

This patient began pulling her hair at about age 14. Are there different types of pulling related to the age at onset, and how does this affect the course of the illness?

Dr. Swedo: The literature divides trichotillomania into cases with onset in early childhood and those that begin during adolescence or later (2, 20). In the majority of cases of early-onset trichotillomania, symptoms begin before 2 years of age, often during infancy. The hair pulling appears similar to rocking or thumb sucking in that it occurs mainly at bedtime, when the child is tired or bored, and during periods of separation and other stresses. The hair pulling is frequently linked to other self-soothing behaviors and is often considered to be a habit disorder rather than classic trichotillomania. As with other early-childhood habit disorders, this type of hair pulling frequently remits by the time the child enters school. Parental support and palliative measures are usually sufficient to treat early-onset hair pulling, although occasionally behavior therapy is required.

Trichotillomania that begins later in childhood (after age 8) or during adolescence is similar to the adult disorder in that it is typically chronic and potentially severe. This type of hair pulling would be characterized as a habit disorder only rarely. More often, as in Ms. A's case, the hair pulling is characterized by a set of ritualized behaviors and accompanied by considerable psychological distress, and it would appropriately be termed trichotillomania.

Are there different styles of hair pulling, and if so, what are the implications for treatment?

Dr. Christenson: Trichotillomania appears to be associated with two predominantly different styles of hair pulling (6, 21). One type has been referred to as “focused” hair pulling, which has phenomenological similarities to compulsive rituals in OCD. This style of hair pulling is associated with mounting tension before pulling or when one is attempting to resist pulling and relief after the completion of the hair pulling. The patient's attention is focused on the act of pulling, which distracts her from attending to necessary tasks. Focused hair pulling may also be associated with more elaborate pulling rituals

such as a need for hair-pulling symmetry. Approximately one-quarter of patients describe this as their predominant style of hair pulling (22). In the present case, some of the patient's hair pulling appears to have characteristics of focused pulling, such as the need to acquire "good roots," the search in front of the mirror for hairs with specific textural qualities, and the protracted pulling with tweezers.

The other major style of hair pulling has been referred to as "automatic" or habitual pulling. As its name suggests, this type of pulling is not associated with a prodromal sensation or hair-pulling urge. It appears to be the predominant style of hair pulling in approximately three-quarters of patients with trichotillomania (22, 23). In this case, the patient appears to display automatic pulling when she is bored and when she is engaged in certain activities like watching TV or working at her desk. Automatic pulling often occurs in the context of sedentary, contemplative activities in which focused attention to a specific task is required, but the patient is generally inactive. Such activities include watching television, reading, driving, speaking on the telephone, and lying in bed at night in a state of contemplation or anticipation (5, 6).

As in this case, many patients have a mixed clinical picture with elements of both focused and automatic pulling. Perhaps that is why, to date, no predictors for response to treatment have been found. Medications and behavioral techniques appear to work equally well (or poorly) for both types of hair pulling.

This patient noted a premenstrual exacerbation of her hair pulling. How common and significant an association is this?

Dr. Keuthen: In a retrospective study conducted at the MGH Trichotillomania Clinic (24), we asked 59 women who met the DSM-III-R criteria for trichotillomania to rate frequency and intensity of urges, hair-pulling frequency, ability to control hair pulling, and efforts to resist the hair pulling at three time points in their monthly cycle (a week before menstruation, during menstruation, and a week after menstruation). Statistically significant differences occurred across time for all of these variables except for efforts to resist hair pulling. Premenstrual symptom exacerbation was noted, which was alleviated during menstruation or shortly thereafter.

These findings are consistent with reports of symptom increases in other psychiatric disorders during the luteal phase of the menstrual cycle. They suggest the need for increased attention to pulling behavior in the premenstrual period.

Hair pulling seems to embody both "compulsive" and "impulsive" characteristics. What evidence is there that trichotillomania is a disorder of impulse control?

Dr. Stein: Unresolved difficulties in defining and contrasting compulsivity and impulsivity make this a complex question (25). Presumably, a disorder may be characterized as impulsive on various grounds, including the phenomenology of symptoms, the nature of comorbid conditions and traits, and the disorder's neurological underpinnings. In DSM disorders of impulse control, for example, there is typically increased tension or arousal before the impulsive behavior and pleasure, gratification, or release at the time of the behavior—features that are present in many but not all patients with hair pulling (5 and DSM-III-R). Further, while some studies find no evidence of a greater prevalence of impulsive personality disorder in persons with trichotillomania, there is some evidence of more impulsive traits in these patients, at least compared with OCD patients (19, 26). Finally, the response often seen in trichotillomania patients after treatment with a selective serotonin reuptake inhibitor (SSRI)—a rapid decrease in symptoms, possibly even at a low dose, with subsequent relapse during periods of stress—is not reminiscent of the pattern in OCD but is somewhat similar to that seen in patients with impulsive personality disorders (27).

The patient had approximately 10 years of various forms of treatment without response. Would you be willing to speculate on possible reasons for the notable lack of success of prior treatment efforts?

Dr. Mansueto: While it is impossible to know why the patient apparently did not benefit from prior treatment efforts, there are a few points worth mentioning in this regard. First, there is little evidence to suggest that either general insight-oriented psychotherapy or biofeedback applied as a general stress reduction technique is useful for trichotillomania. Ms. A's report that she received 3 years of behavior therapy without benefit is more troubling. It is

possible that she was not receiving a proper integrative program of behavior therapy or that despite weekly visits for over 3 years, she was not compliant with the therapist's recommendations. However, it must be acknowledged that for reasons as yet undetermined, there are substantial numbers of women with trichotillomania who at any particular time may not be helped by medications, behavior therapy, support groups, or any combination of these approaches.

What seems to be the secret for the successful treatment of Ms. A at this time?

Dr. Mansueto: There are a number of potentially critical ingredients in the most recent treatment effort that may account for the patient's success. Chief among these is the fact that she was treated with a combination of therapies. The medications were able to decrease her hair-pulling urges to a level where behavior therapy techniques could be used, and these techniques were also critical in decreasing the automatic hair pulling. In this case, the strategy was habit reversal training (7), a comprehensive therapeutic approach and the most extensively tested of the behavioral interventions for trichotillomania. Among the array of specific techniques associated with habit reversal training are training in 1) identification of the settings, situations, cues, and movements that tend to encourage and provoke hair pulling and 2) competing response training, in which the patient is taught to practice some behavior incompatible with hair pulling (usually fist clenching) in response to these precursor cues to hair pulling. Self-monitoring and relaxation training are also often included as part of habit reversal training. Such behavioral strategies can provide useful tools for the patient who is attempting to gain control of hair pulling.

Finally, the importance of Ms. A's participation in the trichotillomania support group should not be underestimated. For many individuals, the benefits of feeling connected to others who share a problem that provokes so much shame and isolation can be vital to achieving success.

After 10 months, the patient has maintained control over her hair pulling. Should it be assumed that she is "cured"?

Dr. Mansueto: Unfortunately, clinical observation suggests that trichotillomania patients are highly susceptible to relapse. I am aware of patients who

have returned to hair pulling many years, even decades, after they had stopped. Indeed, relapses are so common that it is probably better to prepare the patient to expect and prepare for the return of symptoms rather than expect a trouble-free remission.

Relapse prevention has received considerable attention in the behavioral literature and can be a crucial component of the effective long-term treatment of hair pulling (28). Through individualized strategies (e.g., follow-up sessions, record keeping, daily affirmations, planned lapses), patients are helped to maintain their commitment to relapse prevention. In addition, they are encouraged to view increases in their hair pulling as temporary lapses (not relapses) that often respond to renewed applications of previously effective self-control strategies. A preconceived plan to deal with such lapses is likely to make the difference between short-term improvement and durable relief.

What drug treatments appear to be most efficacious for trichotillomania?

Dr. Stein: A range of psychotropics (including antidepressants, lithium, and naltrexone) and psychotherapies (including psychodynamic psychotherapy, behavior therapy, and hypnotherapy) have been reported to be successful in uncontrolled studies of hair pulling (29–34). However, few of these studies have had their findings confirmed by systematic controlled trials, and there are only limited data on the comparative efficacy of different modalities or of different medications in the management of trichotillomania.

Swedo et al. (35) found that clomipramine, a serotonin reuptake blocker, was more effective than desipramine, a noradrenergic reuptake inhibitor, in the short-term treatment of trichotillomania, indicating that (as in OCD) antidepressants with serotonergic effects might be the most effective agents. However, despite promising open-label trials of the SSRIs in trichotillomania, two controlled studies of these agents (36, 37) have had negative results.

As in the present case, there is sometimes a relatively rapid response to an SSRI, which is then lost over time (17). The response of this patient to augmentation of an SSRI with a dopamine blocker is also consistent with previous clinical reports (12, 13). The possibility that the patient had childhood tics is of particular interest in this context, given recent reports that when SSRIs are ineffective in OCD patients with comorbid

tics or in Tourette's disorder patients with comorbid OCD, augmentation with dopamine blockers may decrease OCD symptoms (38).

Dr. Christenson: I agree with Dr. Stein's assessment of the current state of our knowledge regarding treatment of trichotillomania. The limitations of the literature necessitate a certain degree of creativity in clinical settings, particularly when a first treatment approach proves ineffective (17). Although combined treatments have not been systematically studied, we have found that many patients require both medication treatment and an additional nonpharmacologic approach such as habit reversal or hypnosis.

As Dr. Stein notes, pharmacologic augmentation strategies—including adding dopamine antagonists, naltrexone, clonazepam, or perhaps lithium to a serotonergic agent—can be useful (21). In the case of patients whose hair pulling is prompted by scalp pruritus, augmentation of oral serotonergic agents with topical steroids has been noted to be effective (39). Another intriguing observation is that topical capsaicin produced scalp tenderness and a greater awareness of hair-pulling activity (40), which may assist a patient in controlling the behavior.

What assessment instruments can be used for measuring trichotillomania severity and response to treatment?

Dr. Keuthen: The most commonly used assessment tools for chronic hair pulling include clinician rating scales, patient self-monitoring logs, and “natural” measures (33, 35). The MGH Hair-pulling Scale used in the case of Ms. A is a seven-item, self-rated scale with empirical documentation of acceptable reliability and validity (10, 11). The seven items are rated on a 5-point scale (4=the worst score; 0=the best) and include frequency of urges, intensity of urges, ability to control the urges, frequency of hair pulling, attempts to resist hair pulling, control over hair pulling, and associated distress. Patients' self-monitoring records can provide specific counts of hairs pulled and urges, but they require patients' compliance in recording. A benefit of self-monitoring is that the act of recording frequently reduces the occurrence of the identified problem. Other investigators argue for the use of “natural” measures such as photography.

Currently there is no consensual standard for assessment in this disorder. Given its fluctuating course and

the problems inherent in many existing assessment measures, I would recommend the use of multiple outcome measures until a “gold standard” assessment index is identified.

How might the treatment of a child with hair pulling differ from that of an adolescent or an adult?

Dr. Mansueto: The literature on the behavioral treatment of trichotillomania in younger patients is sparse (41). Clinical experience suggests, however, that there are substantial differences between treating these patients and treating adults.

When an infant is brought for treatment, the intervention should usually be directed toward the parents, helping to calm their anxieties by informing them about the typically benign nature of early-onset hair pulling. If the hair pulling persists beyond preschool years, causes substantial secondary social effects, or is upsetting to the child, direct treatment should be considered.

With school-age children and young adolescents, there are some important questions to be answered before formulating a treatment plan. How accurate is the information about hair pulling that is provided by the child? What function does the pulling seem to serve in the child's life? How motivated is he or she to stop the pulling? Is the child capable of following directions and actively participating in treatment? How capable are the parents in cooperating with a behavioral program? In general, parents can be asked to provide information about the circumstances in which hair pulling is likely to occur. They can provide support for the child in substituting activities incompatible with hair pulling, monitoring therapeutic progress, and providing incentives, usually in the form of rewards for controlling pulling. But the child is the primary agent in the therapy, and if he or she does not want to participate, behavioral techniques are less likely to be helpful.

Some special considerations are worth noting in dealing with pediatric patients. These involve the degree of enmeshment of one or both of the parents in the child's symptoms and the potential for hair pulling to become the scene for a battle for control between parent(s) and child. Because these are not infrequent issues complicating the treatment picture, therapeutic attention to family issues may constitute an essential component of the treatment of a pediatric patient. This can be a chal-

lenging endeavor, but in my experience, early intervention can be successful and satisfying.

Dr. Swedo: I agree with Dr. Mansueto's assessment of the concerns regarding treatment of children and adolescents. In addition, I would like to remind the reader that medications are not appropriate for the treatment of the vast majority of infants and children with early-onset hair pulling. This is because there are no controlled trials demonstrating efficacy in this age group, the condition is typically benign and self-limited, and there are legitimate concerns about the effects of psychotropic drugs on the developing brain.

During the school-age years, the use of medications might be considered, although there are only limited data suggesting that drug treatment is helpful. Thus, behavior therapy techniques are usually considered to be the first-line treatment. If the decision is made to treat with medications, clomipramine and certain SSRI antidepressants are approved for use in older children and adolescents, although no medication is approved for use in trichotillomania at present.

Obviously, efforts are underway to find more effective medications to treat trichotillomania. What directions are being taken in behavior therapy?

Dr. Mansueto: Trichotillomania has not had the attention of behavioral researchers that would seem to be warranted by its prevalence and potential for causing considerable suffering. Our group is currently investigating the utility of a comprehensive behavioral model for trichotillomania that highlights the diverse and idiosyncratic nature of hair pulling (41). This model considers 1) the instigating cues (both environmental and self-generated) that can provoke the pulling, 2) the hair-pulling sequence itself (including activities in preparation for pulling, such as searching for particular target hairs), 3) after-pulling behaviors involving the use of the hair and/or hair root (such as biting and swallowing), and 4) the consequences that maintain and strengthen these behaviors (e.g., tension release, pleasurable sensations, finding the "right" hair or root, elimination of unwanted hairs). Each patient is assessed in accordance with the model, and this information is used to develop an individualized behavioral treatment strategy. Critical elements within modalities (cognitive, affective, motor, sensory, and environmental) are then targeted

for change by specific behavioral techniques. Extensive clinical experience with this approach suggests its efficacy; however, this has not yet been confirmed by systematic investigation.

Although trichotillomania is currently classified as an impulse control disorder in DSM-IV, it has phenomenological elements that bear similarities to simple habits, compulsive behaviors, and motor tics. How might these phenomenological aspects relate to theories of etiology?

Dr. O'Sullivan: The case of Ms. A demonstrates several important aspects of the phenomenological complexity characterizing trichotillomania. In this case, hair pulling was frequently associated with tension preceding and relief following hair pulling, thus meeting the criteria for trichotillomania in DSM-III-R and DSM-IV. At other times, however, Ms. A's hair pulling had phenomenological similarities to tic symptoms, including prodromal urges, sensory paresthesias, and a certain "rightness" about the pull that relieved a type of "psychic itch" (4, 12, 42, 43). Occasionally, her hair pulling was lacking in associated affective symptoms, being an automatic behavior similar to a habit. These presentations have important features in common, but they differ in potentially important ways as well.

A neuroethological perspective suggests similarities of hair pulling to grooming displacement activities in animals, with cues to pulling having similarities to releasers in fixed action patterns (44, 45). In fact, veterinary models of trichotillomania in various animal species have been proposed (46). Thus, etiological mechanisms may be diverse, and the origins of the "downstream" phenotype of hair pulling may be heterogeneous.

Various neurobiological studies have attempted to determine functional and structural substrates of trichotillomania. Abnormalities have been noted in neuropsychological functioning, specifically regarding visuospatial functions, suggesting some overlap with OCD (47, 48). A functional neuroimaging study that used positron emission tomography (49) has shown resting brain metabolic differences in global, bilateral cerebellar, and right parietal regions. Pharmacologic challenge studies using *m*-chlorophenylpiperazine have been inconclusive regarding similarities to OCD (50). Recently, a structural magnetic resonance imaging study revealed decreased left putamen

volumes in women with trichotillomania compared to normal control subjects, a finding consistent with previous studies of Tourette's disorder but unlike brain abnormalities described in OCD (4). Thus, there is a developing neurobiology of trichotillomania which suggests that this symptom complex may be etiologically related to a number of different neuropsychiatric disorders.

So, should we conceptualize hair pulling as a behavioral symptom or a clinical syndrome?

Dr. O'Sullivan: This case illustrates the complexity of hair-pulling behavior as well as the psychological and behavioral sequelae that result from hair pulling. Early reports of a symptom and syndrome conceptualization (51) and later embellishments (52) have considered this issue as well. Although hair pulling may be a symptom with numerous etiologies, chronic uncontrolled hair pulling, or trichotillomania, typically has substantial psychological sequelae. Intervention efforts that focus merely on the symptom of hair pulling are likely to be inadequate treatment for the majority of patients.

Dr. Swedo: Strictly defined, trichotillomania is a behavioral syndrome with specific diagnostic requirements set forth in DSM-IV. Unfortunately, the symptom of chronic hair pulling is often labeled trichotillomania and confused with the larger syndrome. Chronic hair pulling is not the same as trichotillomania, and it is important to attempt to distinguish between the two. Chronic hair pulling can result from a variety of conditions, including habit disorders, scalp pruritus, anxiety, and psychosis, and it often occurs outside the person's awareness. In contrast, the hair pulling of trichotillomania appears to arise de novo and is accompanied by a sense of tension preceding the hair pulling and relief following the successful completion of the act. As with other syndromes, it is likely that trichotillomania has multiple causes and a spectrum of severity and symptom patterns. Distinguishing between the symptom and syndrome may be essential for evaluating treatment strategies and establishing prevalence rates. For individual patients, this is clearly necessary in order to provide optimal care.

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