Title: Pediatric eyelash trichotillomania secondary to blepharitis: a case report.

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Presentation Form: Case Report, poster first, paper second

General Topic: Pediatrics

Primary Topic: Anterior Segment

Abstract: An 10 year old female presents with madarosis secondary to self-admitted eyelash pulling. The underlying cause is determined to be blepharitis, and long-term follow up after a twice-daily lid hygiene regimen demonstrates excellent eyelash regrowth.

I. Case History

- Patient demographics: 10 year old Indian female
- Chief complaint: loss of eyelashes and thinning of scalp hair, “severe eyelid itching”
- Ocular History: Mild refractive amblyopia secondary to high hyperopic astigmatism OD>OS, bifocal glasses; mild dry eye and anterior blepharitis
- Medical History: unremarkable
- Medications: none
- Educational/Social History: 4th grade, doing well; the patient is very driven and excels at school and extra-curricular activities. She has difficulty making many friends, and places a lot of stress on herself to succeed. She is very mature for her age.

II. Pertinent findings

- Clinical: BCVA OD 20/25-, OS 20/20-, (mild refractive amblyopia OD secondary to high hyperopic astigmatism OD>OS), normal externals, mildly reduced stereoacuity, normal IOP.
- Physical: Madarosis of upper and lower lids of both eyes, temporal>nasal, remaining lashes broken and of varying lengths, 2+ anterior blepharitis both eyes
- Laboratory studies: deficient in vitamins D and B7, normal TSH levels
- Radiology studies: none
- Others: thinning/loss of scalp hair, followed in dermatology

III. Differential diagnosis

- Primary/leading: The primary differential diagnosis is trichotillomania, or the repeated pulling out of hair causing visible hair loss. The patient fits the demographic (young female), and is experiencing concurrent scalp hair loss.
- Others: telogen effluvium, hypothyroidism, alopecia areata of the eyelashes, alopecia totalis (all head hair), alopecia universalis (all body hair) [1]

IV. Diagnosis and discussion
• Trichotillomania (TTM) is classified in DSM-MD V as an impulse control disorder of repetitive hair pulling that results in noticeable hair loss [2]. With an estimated lifetime prevalence of 1% to 3%, the typical onset of TTM is in childhood or adolescence, and the condition afflicts more females than males [3]. According to older definitions of TTM, the hair-pulling act is preceded by a buildup of stress and angst, and followed by an immense feeling of relief. However, with more research into pediatric cases of TTM, it is becoming apparent that the same emotional cycle is not present in children who have the condition, as they likely do not yet have the mental expressivity or emotional capacity to recognize the urges that adults readily experience [4]. Another difference between pediatric and adult cases lies in the style of pulling in which the patients engage. Children tend to exhibit “automatic” pulling, which takes place beyond the awareness of the patient, while adults tend to have “focused” pulling, where the patient consciously chooses to pull their hair out [5].

• Levin et al recently studied the relationship of depression and anxiety symptoms in TTM patients in the pediatric population, and the results were noteworthy. The researchers found that 46% of children with TTM reported statistically significant depression symptoms and 39% reported statistically significant anxiety symptoms [6]. Our patient, however, exhibited no anxiety or depressive symptoms, other than being mildly stressed at school. A psychiatric consultation was recommended and discussed with the patient’s parents on several occasions at follow up visits, but the family decided that it was not necessary at that time. If the symptoms recur, then the parents were willing to explore the option of a psych evaluation.

• Treatment: Effective treatment is currently lacking, and affected individuals likely fight a lifelong battle against the urge of pulling. Current research favors cognitive behavioral therapy (CBT) with or without pharmacological therapy for the treatment of the conditions [7]. Effective CBT should be comprised of three crucial components: awareness training, stimulus control, and competing response training [8] [9]. A recent two-year follow up analysis suggests a gradual return of some symptoms throughout life for many patients [10].

• Expound on unique features: The eyelashes are not the most common site of hair pulling in trichotillomania. A recent study quoted about 39% of those suffering from TTM pull from the eyelashes, and up to 45% pull from more than one site. The most common site of pulling is the scalp, with 73% of participants reported the scalp as their main pull site [3]. This fact slightly complicates the case because of the patient’s concurrent scalp hair loss. She denies pulling her scalp hair, but one cannot help but wonder if she might be withholding this fact from her doctors. Furthermore, this patient’s pulling seemed to be completely focused secondary to symptoms of itching, at least at its onset. Typically, children tend to predominately pull automatically [4].

V. Treatment, Management

• Treatment and response to treatment: It was determined that the underlying stimulus to hair pulling was the irritation caused by anterior blepharitis, therefore a twice-daily lid scrubs regimen was prescribed. Photos were taken for documentation purposes at the presenting visit. A follow up of 3 months was
recommended. Although there is no standard of care for trichotillomania, the leading form of treatment presently is behavior therapy and/or habit reversal training [4], which we adapted to this case. Our goals in this treatment were two-fold: first, to treat the moderate blepharitis, and second, to provide a more beneficial and healthy “habit” for the patient to perform (a direct competing response). The patient was also put on vitamin D and biotin (vitamin B7) supplements by her dermatologist for her scalp hair loss, which was providing better head hair growth with less loss occurring.

- The response to treatment was favorable. At the 3-month follow up, the patient’s lashes had begun to regrow, and she reported a complete lack of urges to pull. Instead of pulling her lashes out, she just cleans them when she experiences the itching sensation. At subsequent follow-ups, the lashes continued to progressively regrow, noted on photos, which are taken at each 3-month follow up visit. Recently, at her 1-year follow up, the patient presented with complete regrowth, and reported no relapse to date.

- Other treatments in literature: Historically, pharmacological treatments have included olanzapine (atypical neuroleptic, unfavorable/extentive side effects) [11], selective serotonin reuptake inhibitors (SSRIs) (not effective, but still first-line treatment in adults) [11], clomipramine (tricyclic antidepressant, unfavorable/extentive side effects) [11], opioid antagonist (naltrexone, positive results without side effects) [12], N-acetylcysteine (glutamate modulator, effective and safe for adults, but no statistically significant effect in the pediatric population) [13], and bimatoprost (shown to be effective in adults whose mania is under control) [14].

VI. Conclusion

- Pediatric TTM is a relatively uncommon yet often debilitating condition that can lead to mental and emotional issues in adulthood. Unfortunately, treatments proven to be successful in children are few and far between, as well as clinicians comfortable with administering such treatments. When this mania presents in childhood or adolescence, it must be dealt with from a different angle than the adult form.

- As it stands, cognitive behavioral therapy and/or habit reversal training is providing the most hope for relief from repetitive hair pulling in adults and children alike. However, relapse is common, and most patients will need long-term monitoring and follow-up to ensure a TTM relapse does not occur.

- Future research is called for to provide more information regarding pharmacological treatment of TTM, including which drugs actually work when treating children, and the safety of said medications. In general, the fields of psychology and psychiatry needs to be more informed and experienced in dealing with TTM patients.

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