Received: 18 May 2023 | Revised: 8 July 2023 | Accepted: 27 July 2023

DOI: 10.1002/ccr3.7800

CASE REPORT

Clinical Case Reports Open Access WILEY

A case of trichotillomania and bulimia nervosa in a patient with adult-onset attention-deficit/hyperactivity disorder (ADHD)

Rakshita Ramesh Bhat[1,2] | **Faheem Vellekkat**[2,3] | **Ivany Lestari Goutama**[2,4] | **Praneet Singh Gill**[2,5] | **Gauri Kakar**[2,6] | **Hafsa Jabeen**[2,7] | **Krishnan Gireesh**[2,8] | **Vivek Sanker**[2,9] | **Umang Gupta**[2,10]

[1]Bangalore Medical College and Research Institute, Bangalore, India

[2]Team Erevnites, Trivandrum, India

[3]Indira Gandhi Medical College and Research Institute, Puducherry, India

[4]Faculty of Medicine, Tarumanagara University, Jakarta, Indonesia

[5]Government Medical College, Patiala, India

[6]Jawaharlal Nehru Medical College, Wardha, India

[7]Dow Medical College, Karachi, Pakistan

[8]School of Behavioural Sciences, Tamil Nadu, India

[9]Noorul Islam Institute of Medical Sciences, Trivandrum, India

[10]Nepalgunj Medical College, Nepalgunj, Nepal

Correspondence
Umang Gupta, Nepalgunj Medical College, BP Chowk-12, Nepaligunj Banke, Nepal.
Email: dr.umaang@gmail.com

Key Clinical Message

Identifying any potential comorbidity such as bulimia nervosa (BN) and ADHD in trichotillomania patients is essential for a thorough treatment plan. Combining a multidisciplinary approach was found to be feasible and effective in the treatment.

Abstract

Trichotillomania is frequently considered an isolated disorder; nevertheless, emerging evidence suggests that other psychiatric conditions, including obsessive-compulsive disorder (OCD), eating disorders, and attention-deficit/hyperactivity disorder (ADHD), are often found to coexist. Several studies showed that eating disorders, such as bulimia nervosa, were found in chronic hair-pullers, while OCD was considered a factor in predicting the prevalence of eating disorders, as well as the severity of trichotillomania in the populations. While the relationship between trichotillomania and OCD has been quite well-documented, the evidence of its association with bulimia nervosa and ADHD remains limited. Here, we report a case of trichotillomania with comorbid bulimia nervosa, major depressive disorder, and ADHD.

KEYWORDS

ADHD, bulimia nervosa, trichotillomania

1 | INTRODUCTION

Trichotillomania is a condition characterized by the repetitive pulling of hair, which can lead to hair loss, distress, and impairment in daily functioning.[1] This condition has a global prevalence of 1%–2% in the general population.[2,3] Although trichotillomania is typically considered an isolated disorder, emerging evidence suggests that it may be associated with other psychiatric conditions, including obsessive-compulsive disorder (OCD), eating disorders, major depressive disorder (MDD), anxiety disorders, substance use disorder, and attention-deficit/hyperactivity disorder (ADHD).[2–5]

In a recent study, researchers examined the predictors of having OCD in a trichotillomania population. They found that having an eating disorder diagnosis was linked to a higher risk for OCD, depending on the severity of the eating disorder.[6] This suggests that OCD may be a factor in predicting the prevalence of eating disorders in trichotillomania populations.[7]

ADHD is also commonly comorbid with other psychiatric conditions. Up to 75% of adults with ADHD meet diagnostic criteria for at least one more psychiatric disorder.[8] ADHD is a condition that affects the development of the brain and is identified by signs of inattentiveness, hyperactivity, and impulsivity. In approximately 60% of cases, these symptoms can continue into adulthood.[9] Despite this growing body of evidence, the relationship between trichotillomania, bulimia nervosa, and ADHD remains poorly understood. In light of the limited research on this topic, this case report aims to provide a detailed description of a patient with trichotillomania who also has comorbid bulimia nervosa, MDD, and ADHD.

2 | CASE REPORT

The index case is a 25-year-old graduate with a past history of attention-deficit hyperactivity disorder (ADHD) and major depressive disorder (MDD) who was brought to the outpatient department by her mother with symptoms of involuntary hair pulling and binge-eating attacks with excessive exercise. She was diagnosed with ADHD at the age of 15 and had been experiencing symptoms consistent with ADHD for approximately 1.5 years. The patient was absent-minded and distracted during classes, and her academic performance was suboptimal, particularly in mathematics. Her teachers believed that her poor academic performance was not due to a lack of effort or low intelligence, but rather to a lack of concentration. She was often fidgety and found it difficult to stay still. Substance abuse was ruled out as a differential diagnosis considering the patient's age and symptom profile. The diagnosis of ADHD was made by a team consisting of a pediatrician, a psychiatrist, and a counselor. The treatment plan was also devised by this team. She was prescribed Methylphenidate 10 mg daily and was compliant with her medication for the next 2 years. She had periods of remission during this time, and her symptoms improved significantly. The patient was lost to follow-up after about 2 years. She did not seek medical advice for her ADHD symptoms, stating that she had "learned to live with it."

At the age of 22, the patient was diagnosed with major depressive disorder (MDD). She had been experiencing symptoms such as feelings of worthlessness, insomnia, and weight loss for about 4 months. She had multiple psychosocial stressors, including academic stress and personal relationship issues. Additionally, the patient's ADHD symptoms had worsened. She was prescribed bupropion sustained-release tablets and restarted on methylphenidate, but the treatment was not satisfactory. She had minimal improvement in depressive symptoms, and her ADHD symptoms did not improve. She was therefore taken off bupropion and continued on methylphenidate. Escitalopram and clonazepam were also added to her treatment plan. The dosage of Escitalopram was started at 5 mg and then slowly increased to 10 mg. Subsequently, her symptoms started showing slight improvement. The patient was on the same medication for 8 months. Later, Methylphenidate was replaced with Lisdexamfetamine due to sustained hyperactivity symptoms, which showed a better response after 4 months. Clonazepam was slowly tapered and stopped after that. The antidepressants were also gradually tapered and stopped.

Later on, she insidiously began experiencing intermittent binge-eating attacks with excessive exercise for the past 4 months. Her current BMI is 20.7 kg/m^2. She binged mainly on junk food, and each episode lasted 45 min to an hour. She consumes around 7000–8000 kilocalories per binge. She exercises excessively in order to compensate for the excessive eating. She has an intense fear of gaining weight and is constantly preoccupied with thoughts of weight loss, despite the binging. She does not experience emesis, diuresis, or diarrhea. She does not have any knuckle calluses, parotid swelling, dental erosion, or pharyngeal tears. The patient is amenorrhoeic and has not had her menstrual cycles for 6 months. Prior to this, she had irregular cycles (40–45 days). Her Beta-hCG, prolactin, serum E2, and TSH levels were within normal limits, and her ultrasound of the pelvis did not reveal anything out of the ordinary. Medical causes for amenorrhea were ruled out, and it was attributed to excessive exercise.

For the last 2 months, due to increased stress about her examinations, symptoms of involuntary hair pulling and bulimia further worsened. On examination, she had patches of baldness over her head, mainly over the crown region (Figure 1). She would pull strands of hair as she felt restless and began pacing around the room. Initially, it occurred 3–4 times daily but later progressed to 8–10 episodes for the past 2 months due to exam stress. Other than scalp hair, this behavior did not involve the eyebrows, armpits, or pubic area.

She was therefore restarted on Escitalopram 10 mg, which showed a good response to bulimia but an unsatisfactory response to impulsive hair pulling. She is still being followed up for further dose adjustments in medications and cognitive behavioral therapy (CBT) for habit reversal.

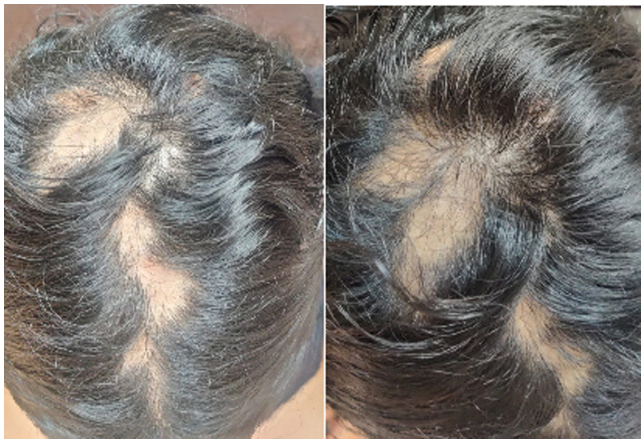

FIGURE 1 Physical examination of the patient's scalp showed patches of baldness over the head, mainly over the crown region.

3 | DISCUSSION

Similar to our present case report, trichotillomania usually presents first during childhood or adolescence and has a chronic course, with a female predominance of over four times that of males.[10] It typically manifests as isolated patches of hair loss, which are frequently observed over the scalp's crown, occipital, and parietal areas. The eyelashes, brows, pubic hair, or other body hair are other areas that are usually affected.[11] The involvement of scalp hair was seen in our patient with patches of baldness mainly over the crown region, which appears to be unique and correlates with the literature. Other than scalp hair, this behavior did not involve the eyebrows, armpits, or pubic area.

According to the DSM-V, five outline criteria must be met for the diagnosis of trichotillomania, which include[1,2]:

1. Recurrent pulling out one's hair resulting in noticeable loss of hair
2. Increasing sudden feeling of tension before pulling hair out or while in attempt for resisting
3. Sense of pleasure, rewarding, or relief after behavior
4. The disturbance is neither accounted by another mental disorder nor due to other general medical condition
5. Causing clinically significant distress or impairment in social, occupational, or other important areas of function.

Patients frequently have a history or concurrent diagnosis of other psychiatric conditions, including anxiety or depression, similar to OCD-related illnesses.[12] Although trichotillomania and obsessive-compulsive disorder (OCD) share many characteristics, trichotillomania is a distinct clinical condition with grave social repercussions and potentially fatal effects if there is also associated hair consumption. According to literature, eating disorders should also be included in the spectrum of OCDs, just like trichotillomania.[13,14] The existence of trichotillomania usually indicates a more severe form of generalized impulse control disorder, which could involve various related conditions, including eating disorders. A subjective sense of compulsion and trouble controlling repetitive activities are two traits shared by OCD and eating disorders.[6,15]

About 20% of chronic hair-pullers are found to have eating disorders.[10] Our case was identified to have intermittent binge-eating attacks with compensatory behavior like excessive exercising along with trichotillomania. In another study of smaller populations with trichotillomania, Houghton et al. reported a prevalence range of 2%–14% for bulimia nervosa.[5] Trichotillomania and eating disorders are both considered to belong to a limited subset of diseases that also exhibit impulsive and compulsive elements and have comparable pathophysiological causes, such as cortico-striatal dysfunction, in addition to having comparable phenomenology and functionality.[14,16] A recent study discovered that there is a 16-fold higher chance of developing bulimia nervosa in females than males with OCD, which is consistent with our patient's findings.[17]

Studying the comorbidity of eating disorders and trichotillomania is crucial for developing new therapeutic techniques to complement existing treatments like CBT. Innovative approaches could focus on addressing shared underlying vulnerabilities such as impulsivity or difficulties with emotional regulation. 79% of those who had trichotillomania also had one or more mental health comorbidities, with anxiety/depressive disorders, OCD, PTSD, and ADHD being the most prevalent.[12] ADHD in general is one of the most prevalent neurodevelopmental diseases in children. Both trichotillomania and ADHD are difficult to define as both disorders share some common symptoms, in which people with trichotillomania may have a hard time resisting the urge to pull their hair, fidget or squirm in their seats, while similarly, people with ADHD also have trouble focusing and easily distracted or impulsive. The dysfunction of the reward system has been suggested as a potential factor in hair-pulling behavior, with the dopaminergic system also implicated in the pathophysiology of trichotillomania.[18] Bhanji and Margolese reported a case report in which trichotillomania was effectively treated with the dopamine/norepinephrine reuptake inhibitor, bupropion.[19] Nevertheless, in our patient, bupropion was found to be ineffective.

The predominance of ADHD features in our patient mandated the management to mainly include stimulants such as Methylphenidate or Lisdexamfetamine. Taking stimulant medications does not affect the severity of trichotillomania severity as suggested by a study

conducted on 308 patients with trichotillomania for comorbid ADHD.[20] A study by Golubchik et al. showed that Methylphenidate was effective in the management of nine adolescents with trichotillomania and comorbid ADHD.[21] Methylphenidate showed improvement in ADHD features, but symptoms of trichotillomania were relatively resistant to management, which is consistent with the results of our present case.

Selective serotonin reuptake inhibitors (SSRIs) are commonly used for the management of both trichotillomania and eating disorders, with effective results in the reduction of the symptoms of trichotillomania, as seen in various literatures.[22–24] Since our patient also had a comorbid MDD, it was apt to add Escitalopram to the management. Despite being the first-line treatment option, studies indicate that while antidepressants may help alleviate depression and anxiety symptoms associated with trichotillomania, they do not produce consistent positive outcomes for the condition itself.[25] A study that analyzed the effectiveness of SSRIs in treating trichotillomania using randomized controlled trials reported a moderate level of improvement for all antidepressants utilized in the treatment.[23]

Furthermore, it was seen that our patient did have an improvement in the symptoms on this management for a few months but subsequently worsened due to exam stress for the last 2 months. This was consistent with the findings of Golubchik et al., who noted that exposure to stressful life events was one of the key factors contributing to treatment-resistant trichotillomania.[21] Thus, it appears that certain factors, such as stressful life events like examinations or conflicts between parents and children, may have a substantial impact on the effectiveness of treatment for trichotillomania. However, the vast majority of evidence indicates that the management of trichotillomania is most effectively achieved by combining pharmacologic and non-pharmacologic treatment with ongoing follow-up and monitoring.[23]

Case reports available in literature on trichotillomania with comorbid eating disorders:

Study; Country; Year	Demographic features	Duration of illness	Comorbid conditions	Treatment given	Result
A case of trichotillomania with binge eating disorder; China; 2021[26]	25 years old, Female	10 years	OCD, Depression, Anxiety Disorder, Binge-eating disorder	Fuvoxamine, Bupropion, N-Acetylcysteine	All symptoms resolved, on follow-up
Oxcarbazepine for the treatment of trichotillomania; Italy; 2010[27]	43-year-old Female	Since adolescence	Binge-eating disorder	Oxcarbazepine	All symptoms resolved
Trichotillomania and Anorexia Nervosa in an Adolescent Female; Canada; 1996[28]	17 years old, Female	2 years	Anorexia Nervosa	Did not consent to treatment	Discontinued evaluation after diagnosis
Obsessive-compulsive disorder, trichotillomania, and anorexia nervosa; Kansas; 1994[29]	18-year-old Female	6 years	Major Depression, Anorexia nervosa, OCD	Fluoxetine, cognitive behavioral and interpersonal psychotherapy.	Symptoms improved
Hypno-behavioral Treatment of Self-Destructive Behavior: Trichotillomania and Bulimia in the Same Patient; Texas; 1986[30]	22-year-old Female	1 year	Bulimia Nervosa	Hypno-behavioral approach	All symptoms resolved

4 | CONCLUSION

Despite its infrequency, trichotillomania can substantially have a negative impact on mental status, life quality and psychosocial function, leading toward patient behavioral aberrancies. Identifying any potential comorbidity is essential to implement a thorough treatment plan. By identifying and characterizing subgroups of individuals based on their unique clinical features and comorbidities, we can gain more insight into the underlying mechanisms of this condition and develop more refined biological, genetic, and therapeutic

studies. In this case report, we present a patient with a diagnosis of trichotillomania and bulimia nervosa with ongoing adult onset of ADHD as well as a history of major depressive disorder. Pharmacological treatments were planned and prescribed according to existing co-morbidities to approach the patient's clinical condition effectively. Current evidence also supports the use of a multidisciplinary approach including dermatologists, psychiatrists, counselors, and even family members to effectively support and treat the expanding and diverse patient group presenting with trichotillomania and its multifaceted nature.

AUTHOR CONTRIBUTIONS

Rakshita Ramesh Bhat: Conceptualization; formal analysis; methodology; visualization; writing – original draft; writing – review and editing. **Faheem Vellekkat:** Conceptualization; data curation; funding acquisition; project administration; validation; visualization; writing – original draft; writing – review and editing. **Ivany Lestari Goutama:** Formal analysis; investigation; methodology; validation; visualization; writing – original draft; writing – review and editing. **Praneet Singh Gill:** Conceptualization; data curation; investigation; methodology; writing – original draft; writing – review and editing. **Gauri Kakar:** Validation; visualization; writing – original draft; writing – review and editing. **Hafsa Jabeen:** Formal analysis; methodology; supervision; writing – original draft; writing – review and editing. **Krishnan Gireesh:** Formal analysis; project administration; validation; visualization; writing – original draft; writing – review and editing. **Vivek Sanker:** Conceptualization; investigation; methodology; project administration; supervision; validation; visualization; writing – original draft; writing – review and editing. **Umang Gupta:** Visualization; writing – original draft; writing – review and editing.

CONFLICT OF INTEREST STATEMENT

None declared.

DATA AVAILABILITY STATEMENT

The data that support the findings of this article are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

Ethical approval was not required for the case report as per the country's guidelines.

CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

ORCID

Rakshita Ramesh Bhat https://orcid.org/0000-0002-2656-0044
Faheem Vellekkat https://orcid.org/0009-0006-5937-6792
Ivany Lestari Goutama https://orcid.org/0000-0002-3097-5859
Praneet Singh Gill https://orcid.org/0009-0005-4515-4542
Gauri Kakar https://orcid.org/0009-0006-4981-9932
Hafsa Jabeen https://orcid.org/0000-0001-9975-6585
Vivek Sanker https://orcid.org/0000-0003-0615-8397
Umang Gupta https://orcid.org/0000-0002-7911-8663

REFERENCES

1. *Diagnostic and statistical manual of mental disorders: DSM-5™*. 5th ed. American Psychiatric Publishing, Inc; 2013. xliv, 947.
2. Keuthen NJ, O'Sullivan RL, Ricciardi JN, et al. The Massachusetts General Hospital (MGH) hairpulling scale: 1. Development and factor analyses. *Psychother Psychosom*. 1995;64(3–4):141-145.
3. Chamberlain SR, Menzies L, Sahakian BJ, Fineberg NA. Lifting the veil on trichotillomania [Internet]. *Am J Psychiatry*. 2007;164. 568-574. [cited 2023 May 14]. Available from: https://pubmed.ncbi.nlm.nih.gov/17403968/
4. Chamberlain SR, Odlaug BL, Boulougouris V, Fineberg NA, Grant JE. Trichotillomania: neurobiology and treatment. *Neurosci Biobehav Rev*. 2009;33(6):831-842.
5. Houghton DC, Maas J, Twohig MP, et al. Comorbidity and quality of life in adults with hair pulling disorder. *Psychiatry Res*. 2016;239:12-19.
6. Zucker N, Von Holle A, Thornton LM, et al. The significance of repetitive hair-pulling behaviors in eating disorders. *J Clin Psychol*. 2011;67(4):391-403.
7. Keuthen NJ, Curley EE, Scharf JM, et al. Predictors of comorbid obsessive-compulsive disorder and skin-picking disorder in trichotillomania. *Ann Clin Psychiatry*. 2016;28(4):280-288.
8. Kessler RC, Adler L, Barkley R, et al. The prevalence and correlates of adult ADHD in the United States: results from the National Comorbidity Survey Replication. *Am J Psychiatry*. 2006;163(4):716-723.
9. Jensen P. Book Review: Barkley, R. A., Murphy, K. R., & Fischer, M. (2008). ADHD in Adults: What the Science Says. New York: Guilford. *J Atten Disord*. 2009;13:97-98.
10. Christenson GA, Pyle RL, Mitchell JE. Estimated lifetime prevalence of trichotillomania in college students. *J Clin Psychiatry*. 1991;52(10):415-417.
11. Franklin ME, Flessner CA, Woods DW, et al. The child and adolescent trichotillomania impact project: descriptive psychopathology, comorbidity, functional impairment, and treatment utilization. *J Dev Behav Pediatr*. 2008;29(6):493-500.
12. Grant JE, Dougherty DD, Chamberlain SR. Prevalence, gender correlates, and co-morbidity of trichotillomania. *Psychiatry Res*. 2020;288:112948.
13. Greenberg E, Grant JE, Curley EE, et al. Predictors of comorbid eating disorders and association with other

obsessive-compulsive spectrum disorders in trichotillomania. *Compr Psychiatry*. 2017;78:1-8.
14. Sallet PC, de Alvarenga PG, Ferrão Y, et al. Eating disorders in patients with obsessive-compulsive disorder: prevalence and clinical correlates. *Int J Eat Disord*. 2010;43(4):315-325.
15. Richter MA, Summerfeldt LJ, Antony MM, Swinson RP. Obsessive-compulsive spectrum conditions in obsessive-compulsive disorder and other anxiety disorders. *Depress Anxiety*. 2003;18(3):118-127.
16. Boisseau CL, Thompson-Brenner H, Caldwell-Harris C, Pratt E, Farchione T, Barlow DH. Behavioral and cognitive impulsivity in obsessive-compulsive disorder and eating disorders. *Psychiatry Res*. 2012;200(2–3):1062-1066.
17. Cederlöf M, Thornton LM, Baker J, et al. Etiological overlap between obsessive-compulsive disorder and anorexia nervosa: a longitudinal cohort, multigenerational family and twin study. *World Psychiatry off J World Psychiatr Assoc WPA*. 2015;14(3):333-338.
18. Carrion VG. Naltrexone for the treatment of trichotillomania: a case report. *J Clin Psychopharmacol*. 1995;15(6):444-445.
19. Bhanji NH, Margolese HC. Alternative pharmacotherapy for trichotillomania: a report of successful bupropion use. *J Clin Psychiatry*. 2004;65(9):1283.
20. Chesivoir EK, Valle S, Grant JE. Comorbid trichotillomania and attention-deficit hyperactivity disorder in adults. *Compr Psychiatry*. 2022;116:152317. doi:10.1016/j.comppsych.2022.152317
21. Golubchik P, Sever J, Weizman A, Zalsman G. Methylphenidate treatment in pediatric patients with attention-deficit/hyperactivity disorder and comorbid trichotillomania: a preliminary report. *Clin Neuropharmacol*. 2011;34(3):108-110.
22. Gadde KM, Ryan Wagner H, Connor KM, Foust MS. Escitalopram treatment of trichotillomania. *Int Clin Psychopharmacol*. 2007;22(1):39-42.
23. McGuire JF, Ung D, Selles RR, et al. Treating trichotillomania: a meta-analysis of treatment effects and moderators for behavior therapy and serotonin reuptake inhibitors. *J Psychiatr Res*. 2014;58:76-83.
24. Koran LM, Ringold A, Hewlett W. Fluoxetine for trichotillomania: an open clinical trial. *Psychopharmacol Bull*. 1992;28(2):145-149.
25. Johnson J, El-Alfy AT. Review of available studies of the neurobiology and pharmacotherapeutic management of trichotillomania. *J Adv Res*. 2016;7(2):169-184.
26. Zhao X, Wang S, Hong X, et al. A case of trichotillomania with binge eating disorder: combined with N-acetylcysteine synergistic therapy. *Ann Gen Psychiatry*. 2021;20(1):46.
27. Leombruni P, Gastaldi F. Oxcarbazepine for the treatment of trichotillomania. *Clin Neuropharmacol*. 2010;33(2):107-108.
28. Pinhas L, Geist R, Katzman DK. Trichotillomania and anorexia nervosa in an adolescent female: a case study of comorbidity. *J Adolesc Health*. 1996;19(2):141-144.
29. Pryor TL, Martin RL, Roach N. Obsessive-compulsive disorder, trichotillomania, and anorexia nervosa: a case report. *Int J Eat Disord*. 1995;18(4):375-379.
30. Hall JR, McGill JC. Hypnobehavioral treatment of self-destructive behavior: trichotillomania and bulimia in the same patient. *Am J Clin Hypn*. 1986;29(1):39-46.

How to cite this article: Bhat RR, Vellekkat F, Goutama IL, et al. A case of trichotillomania and bulimia nervosa in a patient with adult-onset attention-deficit/hyperactivity disorder (ADHD). *Clin Case Rep*. 2023;11:e7800. doi:10.1002/ccr3.7800