

Trichotillomania

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Abstract: *Trichotillomania (TTM) is a chronic impulse control disorder characterized by pulling out one's own hair, resulting in noticeable hair loss. . In trichotillomania alopecia results from deliberate efforts of the patients who is under tension or is psychologically disturbed. The condition maybe episodic and the chronic type. Efficacious treatments have been developed, in particular cognitive-behavioral interventions involving procedures collectively known as habit reversal training. Recent developments in pharmacotherapies for TTM and in combining cognitive-behavioral therapy approaches with medication hold promise.*

Keywords: cognitive-behavioral therapy, combined treatments, habit reversal training, impulse disorders, pharmacotherapy, trichotillomania, TTM

1. Introduction

Trichotillomania (also known as **trichotillois** or **hair pulling disorder**) is an impulse control disorder, characterized by the compulsive urge to pull out one's hair, which (depending on where the hair is pulled from) leads to hair loss balding and distress, and often social or functional impairment [1]. Trichotillomania is often not a focused act, but rather hair pulling occurs in a "trance-like" state [2].

The scalp is the most common area, followed by the eyelashes and eyebrows [3]. It belongs to the primary psychiatric disorders (in which the skin manifestations are self-induced), which is one of the 5 categories of psycho dermatologic disorders [4]. Patients with hair pulling represent an extremely heterogeneous group. In broad spectrum of psychopathologies (from a transient mild habit, through impulse control disorder, the OCD spectrum, various personality disorders (e.g. borderline personality, histrionic personality), body dysmorphic disorder, mental retardation to psychosis) hair pulling may be present as symptom in these disorders[5] .

Definition

Trichotillomania (TTM) is a chronic impulse control disorder characterized by pulling out one's own hair, resulting in noticeable hair loss [6].

Epidemiology

It occurs more than twice as frequently in females as in males.[7] The preponderance may be due in part to women's greater willingness to seek medical care; men may hide their hair pulling better by masking it as male pattern baldness and shaving their mustaches and beards.[5] Affected children may be seven times more than adults.[8] The age of onset is usually between 5 and 12 years with equal sex distribution or early childhood to adolescence.[9] When it occurs later in life, during adulthood or in older patients, it is associated with psychopathology and with a poorer prognosis.[5].

2. Diagnostic Criteria (DSM-5)

The American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)*, places trichotillomania in the category of obsessive-

compulsive and related disorders and notes that it is characterized by recurrent body-focused repetitive behavior (hair pulling) and repeated attempts to decrease or stop the behavior.

The specific *DSM-5* criteria for trichotillomania (hair-pulling disorder) are as follows [10]:

- Recurrent pulling out of one's hair, resulting in hair loss
- Repeated attempts to decrease or stop the hair-pulling behavior
- The hair pulling causes clinically significant distress or impairment in social, occupational, or other important areas of functioning
- The hair pulling or hair loss cannot be attributed to another medical condition (eg, a dermatologic condition)
- The hair pulling cannot be better explained by the symptoms of another mental disorder (eg, attempts to improve a perceived defect or flaw in appearance, such as may be observed in body dysmorphic disorder)

3. Causes and Pathophysiology

Both environmental and genetic causes have been suspected to be the causative factor for trichotillomania which Explanations include the following:

- Coping mechanism for anxiety or stressful events
- Co-occurring with another habitual behavior (ie, thumbsucking) in young children^[11]
- Serotonin deficiency - A link may exist between a deficiency of the neurotransmitter serotonin (5-hydroxytryptamine [5-HT]) and trichotillomania.
- Structural brain abnormalities - One study has shown that individuals with trichotillomania have decreased cerebellar volume[12] [13]. In several MRI studies that have been conducted, it has been found that people with trichotillomania have more gray matter in their brains than those who do not suffer from the disorder [14]
- Abnormal brain metabolism - Positron emission tomography (PET) scans have revealed that some individuals with trichotillomania have a high metabolic glucose rate in the global, bilateral, cerebellar, and right superior parietal areas
- Genetic susceptibility - *DSM-5* notes that there is some evidence that genetic vulnerability plays a role [10]; trichotillomania occurs more frequently in people with

obsessive-compulsive disorder (OCD) and their first-degree relatives

- Psychological factors - Several psychological theories (eg, psychodynamic, behavioral, and ethologic) have attempted to explain trichotillomania in children; such theories have included stress reduction, emotional regulation, and sensory stimulation [15][16].

Sign and Symptoms

Trichotillomania is usually confined to one or two sites, [12] but can involve multiple sites. The scalp is the most common pulling site, followed by the eyebrows, eyelashes, face, arms, and legs [17]. Some less common areas include the pubic area, underarms, beard, and chest [18]. The classic presentation is the "Friar Tuck" form of vertex and crown alopecia [7]. Children are less likely to pull from areas other than the scalp [17].

Hair is often pulled out leaving an unusual shape. Individuals with trichotillomania may be secretive or shameful of the hair pulling behavior [17]. Hair pulling can lead to great tension and strained relationships with family members and friends. Family members may need professional help in coping with this problem [18]. Other medical complications include infection, permanent loss of hair, repetitive stress injury, carpal tunnel syndrome, and gastrointestinal obstruction as a result of trichophagia [12].

Associated Conditions

There is an association with anxiety and dysthymia, [19] learning disability and iron deficiency. In the childhood and adolescent group emotional problems tend to be less severe; it is more a stressful life event. [20]. The adult and older patients show more diverse psychopathology with depression, anxiety disorders, obsessive compulsive disorder (OCD) and panic attacks, prominent substance abuse. [21].

Diagnosis and Screening

Patients may be ashamed or actively attempt to disguise their symptoms. This can make diagnosis difficult as symptoms are not always immediately obvious, or have been deliberately hidden to avoid disclosure. [12]

If the patient admits to hair pulling, diagnosis is not difficult; if patients deny hair pulling, a differential diagnosis must be pursued. [17]. The differential diagnosis will include evaluation for alopecia areata, iron deficiency, hypothyroidism, tinea capitis, traction alopecia, alopecia mucinosa, thallium poisoning, and loose anagen syndrome. [1][17]. In trichotillomania, a hair pull test is negative. [17]

A biopsy can be performed and may be helpful; it reveals traumatized hair follicles with perifollicular hemorrhage, fragmented hair in the dermis, empty follicles, and deformed hair shafts (trichomalacia). Multiple catagen hairs are typically seen [22].

Investigations

- 1) Hair microscopy may help to show the broken off and fractured hairs with blunt end. [23]
- 2) Scalp biopsy. [5][8]

Histopathologic changes vary according to the severity and duration of hair plucking.

- a) The most relevant histologic features is the presence of normally growing hairs among empty hair follicles in a non-inflammatory dermis. [24]
 - b) Follicular plugging with keratin debris can be prominent.
 - c) Strands of basaloid-appearing cells may be present in the base of plucked follicles.
 - d) Separation of the follicular epithelium from the surrounding connective tissue sheath and areas of intraepithelial and perifollicular hemorrhage in a notable absence of inflammatory cells seen if the trauma extraction is severe.
- 3) Full blood count and ferritin. [23]
 - 4) Investigations for trichobezoar. [23]

Treatment

Various therapeutic modalities which have been considered include: [5], [23] (a) Supportive psychotherapy, (b) Directive and autogenic training, (c) Behavior therapy which involves various techniques-self monitoring; coping strategies; motivation enhancement; awareness training; competing response; relaxation training. (d) Hypnotic therapy, (e) Psychotherapy and (f) Pharmacotherapy.

Behavior Therapy

The method of choice is cognitive-behavioural therapy (CBT), whose efficacy has been demonstrated in several independent studies [25]. Studies have shown the effectiveness of a habit-reversal training (HRT) as a method limiting the intensity and frequency of behaviours associated with trichotillomania [26]. A key element of the therapy is competing response training – involving patient in a motor activity that prevents the implementation of the motor pattern involved in pulling/eating hair. Other HRT elements used in the treatment of trichotillomania are: self-observation, mindfulness, impulse control techniques and – supportively – relaxation techniques and social support.

Hypotherapy

A variety of hypnotic suggestions that have been applied usually as adjuncts to other behavioral or psychotherapeutic treatment elements included pain of touching the scalp or pulling hair, [27] increased awareness of hair pulling behavior through associated hand warming, [28] and rituals other than hair pulling to decrease anxiety.

Psychopharmacology

Many drugs appear promising but actually the only drug which is found effective in controlled trials appears to be clomipramine [29].

Efficacy for the combination of serotonergic reuptake inhibitors (SSRIS) (fluoxetine, paroxetine, sertraline, citaloprem) and neuroleptics (haloperidol, pimozide, risperidone) is observed in uncontrolled studies. There are reports of successful treatment of trichotillomania with sertraline Hcl 50mg at bed time and fluoxetine 10 mgs daily. Fluocinolone shampoo 0.01 % twice weekly has been found beneficial in some cases.

Because clomipramine (50-200mg/day) appears to be the

drug whose effectiveness has been demonstrated in a double blind trial, it deserves primary consideration. Thus the first-line strategy should be a trial of clomipramine.

Venlafaxine and mitrazapine (which strongly enhance both serotonergic and noradrenergic functioning) may become alternative drugs.

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