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Onset of Dermatillomania after Treatment with Methylphenidate in a Child with ADHD: A Case Report

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Abstract **Case Report**

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder characterized by inattention, hyperactivity, and impulsivity. Dermatillomania, or skin picking disorder, is a behavioral condition often associated with obsessive-compulsive symptoms. Studies have shown that methylphenidate (MPH), a common treatment for ADHD, may induce obsessive-compulsive behaviors, including skin picking. In this report, we describe the case of a 15-year-old patient who developed dermatillomania a few weeks after starting MPH for ADHD. Despite discontinuation of MPH, the symptoms persisted and improved only with the addition of escitalopram, highlighting a potential link between MPH use and the emergence of dermatillomania.

Keywords: ADHD, methylphenidate, dermatillomania, OCD, psychostimulants, skin picking.

INTRODUCTION

Dermatillomania is a potentially recurrent disorder that can lead to injuries and scarring of the skin tissue due to repetitive skin picking. It is classified under the obsessive-compulsive spectrum disorders in the DSM-5 [1]. Recent studies estimate its prevalence to range between 1.5% and 5.4%, with the condition being observable across all age groups. This disorder causes significant challenges in social and professional life, and clinical evaluation requires a thorough physical and psychiatric examination [2]. Dermatillomania may also co-occur in children with other psychiatric conditions, including attention deficit hyperactivity disorder (ADHD) and trichotillomania [3, 4].

ADHD is a neurodevelopmental disorder characterized by inappropriate inattention, hyperactivity, and impulsivity for the developmental stage. Research on ADHD has identified methylphenidate (MPH) as the most commonly used pharmacological therapy [5].

MPH is the first-line psychopharmacological treatment for children and adolescents with ADHD, resulting in significant improvement in 70–80% of affected children [6]. Among the most frequently reported side effects of MPH treatment are nausea, reduced appetite, weight loss, and sleep disturbances [6]. In addition to these common side effects, MPH has also been associated with rare adverse effects such as hallucinations [7, 8], hypersexuality or inappropriate sexual behaviors [9], skin rashes [10], manic/psychotic reactions [11], and obsessive-compulsive symptoms [12].

Here, we present the case of a 15-year-old patient with ADHD who developed dermatillomania following treatment with methylphenidate.

PATIENT AND OBSERVATION

A 15-year-old patient first consulted a child psychiatrist at the age of 10 due to irritability, hyperactivity, and academic difficulties. The patient had no personal or family psychiatric history, no other medical or surgical history, and no history of substance use disorders. During the psychiatric evaluation, ADHD and a specific learning disorder were diagnosed based on DSM-5 criteria. The patient underwent a biological workup (complete blood count and thyroid panel), as well as EEG, ECG, and brain CT, all of which were unremarkable. Initial interventions included psychomotor and speech therapy, followed by treatment with methylphenidate at a dose of 10 mg/day, later increased to 15 mg/day after four months, resulting in significant clinical improvement in ADHD symptoms.

The patient's mother reported noticing that, within the first months of treatment, he began touching and pressing the skin around his fingernails. These

behaviors gradually increased in duration and intensity. Soon after, he started picking at his cuticles with his nails and, becoming increasingly preoccupied with his hands, began biting the skin on his fingers several times daily. This behavior led to the development of multiple scars and calluses, which he would then continue to pick at.

This symptomatology caused significant distress and feelings of shame for the child, yet it was never reported to his treating physician. Methylphenidate treatment was continued for four years, with ADHD symptoms stabilizing, but the skin-picking behaviors persisted. Due to difficulties obtaining methylphenidate, the treatment was discontinued for a year, during which the skin-picking behaviors slightly decreased in intensity. A few months later, the patient developed anxiety symptoms and was prescribed escitalopram at 10 mg/day, which resulted in significant clinical improvement in both anxiety and skin-picking behaviors.

At the psychiatric evaluation, the patient was calm, with no depressive or anxious symptoms, no delusional ideas, and no perceptual disturbances. Regarding his skin-picking, he reported better control over the urge. He did not exhibit any other obsessive-compulsive symptoms. On physical examination, scars, calluses, and short nails were observed (figure 1). An organic cause was ruled out.

The diagnosis of dermatillomania was confirmed, and treatment was supplemented with cognitive-behavioral therapy.

Figure 1: Lesions Caused by Skin Picking

DISCUSSION

In our case, the patient did not exhibit any obsessive-compulsive symptoms or dermatillomania prior to starting methylphenidate treatment. However, after initiating the medication, dermatillomania symptoms appeared and persisted for four years. This observation led us to consider the possibility of methylphenidate-induced dermatillomania.

A similar case [13] reported a 7-year-old patient treated with methylphenidate for ADHD who developed identical symptoms within the first week of treatment, including bleeding lesions. Methylphenidate was discontinued, leading to a reduction in skin-picking behavior, though the behavior persisted even after stopping the medication. The patient was subsequently treated pharmacologically for persistent skin-picking. Citalopram and risperidone were prescribed, resulting in the disappearance of the behavior after three months, with complete healing of the affected areas.

This case resembles our patient's experience, as the skin-picking behavior slightly decreased after discontinuation of methylphenidate but still persisted. Introducing escitalopram in our case demonstrated a noticeable improvement in the patient's skin-picking behavior.

Skin-picking behavior has been previously reported as an adverse effect of medications, particularly in patients undergoing dopaminergic treatment for Parkinson's disease [14].

In substance use disorders, methamphetamine and cocaine use can induce skin itching, sensations of something crawling under the skin, and compulsive skin-picking behaviors [15].

Another case described an 8-year-old boy diagnosed with ADHD without any prior psychiatric history. Initially treated with methylphenidate at a dose of 10 mg/day, the patient developed severe headaches and insomnia, leading to a switch to atomoxetine (ATX) at 10 mg/day, later increased to 25 mg/day. After two months of atomoxetine treatment, the patient began picking the skin on his fingers and toes. Atomoxetine was discontinued, and the skin-picking behavior progressively resolved within one month [16].

Another Case [17] of a 10-year-old girl diagnosed with ADHD and separation anxiety, without prior obsessive-compulsive symptoms, was treated with

methylphenidate at 18 mg/day for one year, later increased to 27 mg/day. After the first week of the dosage increase, her parents observed obsessive-compulsive symptoms, including excessive handwashing, symmetry concerns, and reassurance-seeking behaviors. She also developed a facial tic and began picking the skin around her nails. She was subsequently treated with sertraline, which led to significant clinical improvement.

Based on preclinical studies, brain imaging, and neurochemical findings, as well as the effective use of antidopaminergic agents as adjunctive treatments for OCD, dopamine is thought to play a role in the pathophysiology of OCD [18], alongside serotonin [19]. Neuroimaging studies in patients with OCD and related disorders consistently show hyperactivity in the orbitofrontal cortex and striatum [20, 21]. This hyperactivity has been hypothesized to result from an imbalance between excitation and inhibition, possibly due to increased glutamatergic excitation or reduced GABAergic inhibition, which leads to the compulsive behaviors observed in related disorders [22].

Behavioral therapy, including habit reversal therapy (HRT), is a non-pharmacological treatment option for dermatillomania [23, 24]. Selective serotonin reuptake inhibitors (SSRIs) such as fluoxetine, citalopram, fluvoxamine, and sertraline are among the most studied medications for the treatment of dermatillomania [25]. Other pharmacological treatments include lamotrigine, atomoxetine, methylphenidate, and inositol [23, 25].

Several authors have reported managing methylphenidate (MPH)-induced obsessive-compulsive symptoms by discontinuing the medication [12] or replacing it with dexamphetamine [26].

In our case**,** even after discontinuation of methylphenidate, obsessive-compulsive symptoms persisted and only improved following treatment with escitalopram.

CONCLUSION

In conclusion, the possibility of developing dermatillomania or obsessive-compulsive symptoms following treatment with methylphenidate warrants the attention of clinicians. Although this medication is widely used to treat ADHD, rare psychiatric side effects, such as dermatillomania or OCD, can occur in some patients. It is crucial for healthcare professionals to be aware of these risks, closely monitor the emergence of such symptoms, and adjust treatments accordingly.

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