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CASE REPORTS

Trichotillomania, obsessive-compulsive symptoms, and methylphenidate – Is there a link?

Tricotilomania, sintomas obsessivo-compulsivos e metilfenidato – Que relação?

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ABSTRACT

Introduction: Psychostimulants, especially methylphenidate (MPH), are established treatments for attention-deficit/hyperactivity disorder (ADHD) in children and adolescents. Their common side effects are well known, and, although trichotillomania (TTM) and obsessive-compulsive symptoms (OCS) are not formally listed among them, they are reported in the literature. This study describes a case of TTM and OCS associated with the use of MPH.

Clinical Case: A nine-year-old boy was referred to the Infant and Adolescence Psychiatry consultation due to obsessive thoughts and TTM. He presented to the first appointment already medicated with immediate-release MPH.

Discussion: The time span between MPH intake and the presentation of TTM and OCS, together with their resolution in the absence of MPH, raised clinical suspicion of an association between MPH and these conditions.

Conclusion: Although TTM and OCS can coexist with ADHD, it was not until MPH exposure that they were observed in the present case.

Keywords: methylphenidate; obsessive-compulsive symptoms; psychostimulant; trichotillomania

RESUMO

Introdução: Os psicoestimulantes, particularmente o metilfenidato, são tratamentos estabelecidos para o tratamento da perturbação de hiperatividade e défice de atenção (PHDA) em idade pediátrica. Os efeitos adversos desta classe farmacológica são bem conhecidos e, apesar da tricotilomania e sintomas obsessivo-compulsivos não estarem formalmente identificados entre eles, estão descritos em casos na literatura. O presente estudo reporta um caso de tricotilomania e sintomas obsessivos-compulsivos associados ao uso de metilfenidato.

Caso Clínico: Um rapaz de nove anos de idade foi referenciado à consulta de Pedopsiquiatria por pensamentos obsessivos e tricotilomania. À data da primeira consulta, encontrava-se já medicado com metilfenidato de libertação imediata.

Discussão: A associação temporal entre o início da toma de metilfenidato e a apresentação de sintomas e a resolução dos mesmos após a suspensão do fármaco sugerem uma relação causal.

Conclusão: Embora estas entidades possam ser comórbidas, neste caso o quadro surgiu após a exposição a metilfenidato.

Palavras-chave: metilfenidato; psicoestimulante; sintomas obsessivo-compulsivos; tricotilomania

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INTRODUCTION

Methylphenidate (MPH) is considered the first-line psychopharmacological treatment in children and adolescents with attention-deficit/hyperactivity disorder (ADHD) and is associated with significant improvement in 70-80% of cases.[1] Several clinical trials, systematic reviews, and meta-analyses have investigated the efficacy and safety of this agent.[2] Nausea, decreased appetite, weight loss, and sleep disturbances are among the most frequently reported side effects, but MPH has also been reported to cause unusual side effects, such as trichotillomania (TTM) or obsessive-compulsive symptoms (OCS).[3-5]

The present study reports the case of a nine-year-old boy with ADHD under treatment with MPH who presented with TTM and OCS.

CASE REPORT

A nine-year-old boy was referred to the Child and Adolescent Psychiatry consultation by his pediatrician for "borderline intelligence quotient, language delay, ADHD, obsessive thoughts, and TTM."

He had been previously referred to this consultation at the age of three years due to language delay, social isolation, and poor interaction with peers. At that time, the boy was diagnosed with global developmental delay and referred to speech therapy. At the age of seven, he was referred to the Developmental Pediatrics consultation due to learning difficulties, with no reference to anxiety and/or obsessive symptoms. At the age of eight, the boy was prescribed immediate-release MPH as ADHD treatment. In the follow-up consultation, six months later, no side effects were reported, and the mother's main concern was the son's poor academic performance. The mother denied any attention improvement with MPH. It was not until the subsequent assessment, one year after MPH introduction, that the mother reported increasingly severe concerns about "microbes" by the boy, accompanied by hand washing compulsion and reassurance seeking. On the first Child and Adolescent Psychiatry consultation, these OCS were evident and affecting the boy's daily life and routines. When questioned, the mother stated that these behaviors first manifested right after MPH introduction, but she did not report them because they could be transient. However, symptoms became worse, with the boy talking about germs all the time and permanently feeling anxious about possible infestations/contaminations, only transiently relaxing immediately after hand washing or bathing. He also had TTM, with areas of hair loss. In the first appointment with the psychiatrist, he decided to stop MPH treatment and made no therapy switch. Psychoeducation and cognitive-behavioral therapeutic approaches were applied, and the boy was reassessed one month later. No additional TTM episodes were reported, and the boy seemed less anxious and able to talk about more enjoyable subjects. However, although less intense and invasive, concerns about "microbes" were still present. OCS and TTM resolved four months after MPH suspension. As there was no evidence of improvement in attention, behavior, or academic performance with MPH, alternative psychostimulants were not considered. In addition, remarkable improvement was noted with behavioral approaches and stimulation of the child's autonomization.

DISCUSSION

Trichotillomania is defined as repetitive and recurrent hair pulling, resulting in areas of hair loss, associated with attempts to reduce or stop this behavior. TTM falls under the category of "obsessive-compulsive and related disorders" of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.[6]

OCS feature a pattern of thoughts, urges, images, or impulses (obsessions) that lead to the performance of repetitive behaviors or mental acts (compulsions). These interfere with daily activities, are time-consuming, and cause significant distress.[6]

Although some studies document comorbidity between ADHD and OCS, such as TTM, and that these symptoms may be exacerbated with the use of psychostimulant medications, OCS and TTM have rarely been reported as side effects of MPH.[7,8]

In this particular case, the cause-effect relationship between OCS and TTM and the introduction of MPH was striking since the patient did not manifest these symptoms prior to drug administration. Furthermore, there was an association between MPH suspension and symptom improvement and cessation.

In 1998, Martin *et al*. reported the case of three boys aged between seven and twelve years who developed TTM within one to six months of MPH treatment start. Similar cases were reported in two children of eight and nine years old in 2017.[9-11]

A search in PubMed retrieved only seven case reports of patients developing OCS with stimulant medications. The type of OCS varied across reports, with some authors describing typical OCS – such as repeated hand washing, wiping the furniture and walls with shirt sleeves, checking rituals, and reassurance seeking – and others reporting compulsive atypical OCS, like stealing and hoarding, thoughts of stabbing and killing people, compulsion in the form of drumming, smelling people, food, and clothes, ordering and symmetry, locking and unlocking and excessively writing about mechanics of locking and unlocking, and tying and untying shoelaces repeatedly.[6-8]

Although the pathophysiology of these side effects remains unclear, the literature suggests that serotonergic and dopaminergic system dysfunction is implicated.[12,13] Psychostimulants increase the concentration of dopamine, which, together with serotonin, is one of the neurotransmitters involved in the etiology of compulsive behaviors, specifically TTM. Therefore, the association between OCS/TTM and ADHD could be a complication of stimulant treatment or the expression of latent neurobiological vulnerability.[2,12,14,15]

CONCLUSION

Physicians should investigate the presence of ADHD in children with behavioral concerns (e.g., inattention, hyperactivity, impulsivity, oppositionality) or poor academic performance through the use of validated assessment tools and observers from different settings (home, school, community) together with self-observation, to be able to establish a correct diagnosis and decide on the potential use of medication. Physicians following patients with a previous ADHD diagnosis should review the diagnostic process, as well as current symptoms and treatment needs.

In this case, the child's follow-up allowed to conclude that medication was not necessary. MPH was not associated with attention improvement nor its suspension was associated with attention worsening. Although the first-line treatment of ADHD in the considered age group consists of medication, the patient responded to non-pharmacological strategies, including parental training, classroom management, and peer interventions, with attention improvement.

This study reports the case of a boy who developed TTM after initiating MPH and experienced disease remission after stopping therapy. The chronological sequence and dramatic response to medication discontinuation suggest that TTM was probably related to MPH. Furthermore, the boy had no prior history of medical illness, trauma, or TTM. Therefore, before considering the diagnosis of comorbid TTM and OCS, the association with stimulants should be suspected in cases of children who are on these drugs and present with new-onset TTM and OCS, and MPH suspension should be considered in their initial management.

AUTHORSHIP

Marta P. Antunes - Conceptualization; Visualization; Writing – original draft; Writing – review & editing

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