

Emergence of Stuttering in an Attention Deficit Hyperactivity Disorder Patient Treated with Methylphenidate

Mazlum Copur¹, Sidar Copur²

¹Istanbul Arel University, Faculty of Arts and Sciences,
Department of Psychology, Istanbul - Turkey

²Koc University, Faculty of Medicine, Istanbul - Turkey

How to cite this article: Copur M, Copur S. Emergence of stuttering in an attention deficit hyperactivity disorder patient treated with methylphenidate. Dusunen Adam The Journal of Psychiatry and Neurological Sciences 2018;31:222-224. <https://doi.org/10.5350/DAJPN2018310212>

Address reprint requests to / Yazışma adresi: Sidar Copur, Zuhtupasa Mah., Fahrettin Kerim Gökay Cad., No.46, A-2 Blok D.52, Kadıköy/Istanbul, Turkey

Phone / Telefon: +90-212-543-7016

E-mail address / Elektronik posta adresi: sidar1996@yahoo.com.tr

Date of receipt / Geliş tarihi: August 22, 2017 / 22 Ağustos 2017

Date of the first revision letter / İlk düzeltme öneri tarihi: September 29, 2017 / 29 Eylül 2017

Date of acceptance / Kabul tarihi: November 12, 2017 / 12 Kasım 2017



Dear Editor,

According to Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5), there are certain criteria that must be met in order for the diagnosis of childhood-onset fluency disorder to be made: sound and syllable repetitions, sound prolongations, interjections, audible or silent blocking, circumlocutions, broken words, words formed with an overload of physical tension, or word repetitions (1). Emergence of stuttering typically occurs between ages 2 and 7 (90% of the cases), and 65-80% of stuttering cases resolve spontaneously. Stuttering is a multifactorial disorder in which genetic, neurophysiological, psychological and environmental factors have an influence (2).

Stuttering can be divided into 3 categories depending on the reasons of its emergence: developmental, neurogenic, and psychological. The

most common type of stuttering, developmental stuttering, the exact etiology of which is unknown, arises early in childhood. Possible causes of developmental stuttering include genetic, linguistic, motor and neuronal factors. On the other hand, reasons of neurogenic stuttering are degenerative central nervous system (CNS) diseases, brain tumors and traumatic brain injury, utilization of drugs, dialysis, and dementia (3).

A.D., a seven-year-old male student in a primary school, was diagnosed with Attention Deficit Hyperactivity Disorder (ADHD), according to the Diagnostic Criteria of DSM-5. He was prescribed short acting methylphenidate 5mg in the morning and 5mg at noon. Stuttering arose on the next day the patient started taking the medication. Troubles during the pronunciation of the first syllables and repetitions of some syllables were observed. After taking the

medication for 10 days, his parents and teachers stated that attention and hyperactivity symptoms were significantly improved; however, the patient was suffering from stuttering for a roughly 2-hour period following the medication intake. After this period, stuttering symptoms diminished noticeably. Therefore, methylphenidate treatment was terminated. However, methylphenidate treatment, 10mg in the morning and 5mg at noon, was reinstated after a break of 10 days due to his parents' and teachers' observations regarding a worsening in the symptoms of hyperactivity and lack of attention compared to the pre-medication period. The patient started to suffer from stuttering on the same day. Ten days later, his parents reaffirmed that the patient mostly suffered from stuttering during a 2-hour period after medication intake, while the symptom of stuttering became imperceptible after that period. In addition, obvious stuttering symptoms were observed during clinical examination of the patient after he had used the medication with the prescribed dosage. According to the diagnostic criteria of DSM-5, the childhood onset fluency disorder (stuttering) that the patient was suffering from is classified as neurogenic-type stuttering. Methylphenidate treatment was stopped after 4 months when the patient started to suffer from stuttering all day long. Symptoms of stuttering completely disappeared after 10 days and no relapse was recorded in the examinations performed every 2 months throughout the following 6 months.

In the literature review conducted regarding the association between methylphenidate and stuttering, we found a study testing methylphenidate as a treatment option for stuttering, suggesting that

methylphenidate is suitable for treating the condition (3). Similar results were established by two case reports indicating improvement in stuttering symptoms when treated with methylphenidate (11- and 18-year-old patients) (4,5).

On the other hand, worsening of stuttering in patients suffering from developmental stuttering when treated with dopamine agonists such as levodopa and detection of a significant increase in cerebral dopamine levels in stutterers indicate the possibility of an emergence of stuttering in patients treated with methylphenidate (6,7). There are two studies focusing on this topic: a case reporting the emergence of stuttering in a 7-year-old patient when treated with short acting methylphenidate and another study reporting the occurrence of stuttering in a 3-year-old patient diagnosed with ADHD when treated with pemolin and methylphenidate (4,8).

The fact that methylphenidate has contradictory influences on stuttering in different cases demonstrates that stuttering develops by different mechanisms in each case, which can alter the outcomes of methylphenidate treatment.

Recent studies demonstrate a higher prevalence of stuttering in ADHD patients compared to the general population (6,7,9). These findings indicate that the co-existence of ADHD and stuttering should not be overlooked. The case we are presenting is significant for being one of the few studies revealing an exacerbation of stuttering. Contradictory outcomes from different studies about the association of methylphenidate and stuttering demonstrate the need for further comprehensive research in this field.

REFERENCES

1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. Fifth Ed. Washington, DC: American Psychiatric Publishing, 2013.
2. Sadock BJ, Sadock VA, Ruiz P. Kaplan and Sadock's synopsis of psychiatry, behavioral sciences/clinical psychiatry. Eleventh Ed. Philadelphia: Wolters Kluwer, 2015.
3. Sathya JMA, Victor SP. Types and tools available for fluency disorder - speech therapy. International Journal of Engineering and Computer Science 2015; 4:12423-12428.
4. Devroey D, Beerens G, Van De Vijver E. Methylphenidate as a treatment for stuttering: a case report. Eur Rev Med Pharmacol Sci 2012; 16(Suppl.4):66-69.
5. Bozatli L, Berberoglu KK, Ceylan C, Gorker I. Improvement of stuttering with use of methylphenidate in a child who was diagnosed with concomitant stuttering and ADHD. Anatolian Journal of Psychiatry 2016; 17(Suppl.3):71-73. (Turkish) **[CrossRef]**

6. Anderson JM, Hughes JD, Rothi LJ, Crucian GP, Heilman KM. Developmental stuttering and Parkinson's disease: the effects of levodopa treatment. *J Neurol Neurosurg Psychiatry* 1999; 66:776-778. **[CrossRef]**
7. Wu JC, Maguire G, Riley G, Lee A, Keator D, Tang C, Fallon J, Najafi A. Increased dopamine activity associated with stuttering. *Neuroreport* 1997; 8:767-770. **[CrossRef]**
8. Alpaslan AH, Coskun KS, Kocak U, Gorucu Y. Stuttering associated with the use of short-acting oral methylphenidate. *J Clin Psychopharmacol* 2015; 35:739-741. (Turkish) **[CrossRef]**
9. Blood GW, Ridenour VJ, Qualls CD, Hammer CS. Co-occurring disorders in children who stutter. *J Commun Disord* 2003; 36:427-448. **[CrossRef]**