CASE REPORT / OLGU SUNUMU

DOI: 10.4274/tjcamh.galenos.2022.75046

Turk J Child Adolesc Ment Health 2023;30(2):189-92

A Case of Sluggish Cognitive Tempo Followed Up with a Diagnosis of Childhood Depression

Çocukluk Çağı Depresyonu Tanısı ile Takip Edilen Bir Yavaş Bilişsel Tempo Olgusu

Sefanur Altun, Burcu Kardaş, Nursu Çakın Memik

Kocaeli University Faculty of Medicine, Department of Pediatric Mental Health and Diseases, Kocaeli, Turkey

ABSTRACT

Even though children with a sluggish cognitive tempo (SCT) may exhibit symptoms similar to the attention deficit hyperactivity disorder-inattentive type, they are categorized separately because of their excessive daydreaming, mental confusion, and lethargy. Although there is a developing literature on SCT in recent years, studies and case reports on clinical manifestations are limited. This case report provides information about the clinical appearance of SCT, and to discuss its qualitative distinction with other disorders.

Keywords: Sluggish cognitive tempo, depression, childhood

ÖZ

Yavaş bilişsel tempolu (YBT) çocuklar, dikkat eksikliği hiperaktivite bozukluğu-dikkat eksikliği-baskın görünüme benzer belirtiler sergilese de aşırı hayal kurmaları, zihinsel karışıklıkları ve uyuşuklukları nedeniyle ayrı kategorize edilirler. Son yıllarda YBT ile ilgili gelişen bir literatür olmasına rağmen klinik görünümlerle ilgili çalışmalar ve olgu bildirileri sayıca azdır. Bu olgu sunumunun amacı YBT'nin klinik görünümü ile ilgili bilgi verilmesinin yanı sıra diğer ruhsal bozukluklarla niteliksel ayrımının tartışılmasıdır.

Anahtar Kelimeler: Yavaş bilişsel tempo, depresyon, çocukluk

Introduction

Sluggish cognitive tempo (SCT) is a syndrome characterized by symptoms such as daydreaming, lethargy, confusion, and apathy.[1] In the first years of its definition, it was considered a subtype of attention deficit hyperactivity disorder (ADHD). In recent studies, it's thought that SCT is a separate disorder from ADHD and maybe comorbid with ADHD.[2] SCT is currently not included in any classification system; there are no official diagnostic criteria.[3] Discussions on its diagnostic validity continue. Researchers have developed many scales on this subject.[4] The Barkley Child Attention Questionnaire (BCAQ), which was developed by Barkley to measure SCT findings, was translated into our language and its validity and reliability were demonstrated.[5]

In studies conducted in neuropsychology, it is thought that the executive dysfunction suggested in ADHD is not included in SCT and that SCT may be related to a different type of cognitive dysfunction.[6] In a population-based study, ADHD was found in more than half (59.0%) of children diagnosed with SCT, and SCT symptoms were found in 39.0% of cases diagnosed with ADHD.[7] Similarly, studies have shown that SCT is associated with internalizing symptoms such as anxiety, low self-esteem, and social withdrawal, similar to ADHD-inattentive type.[1,8,9] It has been observed that there is a positive relationship between SCT and major depressive disorder and anxiety disorders.[10] The diagnosis of SCT should be considered in the absence of hyperactivity/impulsivity symptoms, but when symptoms such as hypoactivity, drowsiness, staring, and mental confusion are present together with those symptoms in the attention and cognitive domain.[11] Our purpose in presenting this case is to emphasize the importance of the diagnostic evaluation of SCT, which can be confused with many other disorders in childhood.

Address for Correspondence/Yazışma Adresi: Sefanur Altun, Kocaeli University Faculty of Medicine, Department of Pediatric Mental Health and Diseases, Kocaeli, Turkey

Phone: +90 262 303 75 75 **E-mail:** sefanurozkan@hotmail.com **ORCID:** orcid.org/0000-0003-2946-7862

Received/Geliş Tarihi: 26.01.2022 **Accepted/Kabul Tarihi:** 10.06.2022

Case Report

An 11-year-old, 6th-grade male patient applied to our clinic with complaints of "being unhappy with his family, dissatisfied with them, slow movements, visual and auditory hallucinations, and anger and behavioral problems". Written informed consent was obtained from the patient and his family. According to the information given by his family, our patient had been under child psychiatry follow-up since the age of five and was diagnosed with a specific learning disability, ADHD, conduct disorder, generalized anxiety disorder, and childhood depression. During these follow-ups, he received psychotherapeutic intervention and various psychopharmacological treatments.

The socio-economic status of the family was good. The mother and father were in a consanguineous marriage with the paternal branch having a family history of bipolar disorder and schizophrenia. The patient was born at term because of a planned and followed up pregnancy, with a normal vaginal delivery at a weight of 3,980 grams. There were no prenatal, natal, or postnatal problems. He started using his first words after the age of two, and his first sentences emerged after the age of three. Other neuromotor developmental milestones were on time with the patient being defined as "a calm baby".

At the age of 5-6 years, the patient started to have complaints such as not wanting to go to bed alone, sleeping without turning off the lights, and being afraid when going to the toilet. At the age of seven, fluoxetine treatment was started in the center where he was followed up for these complaints. Since he did not benefit from fluoxetine in the follow-up it was discontinued and sertraline was started. The sertraline dose was increased to 50 mg/day. During the follow-up, it was learned that his fears decreased and that he had been receiving sertraline treatment for four years. With the primary school process; problems with focus, learning problems, and academic difficulties came to the fore. It was thought that these symptoms might be related to ADHD and specific learning disabilities (SLD). He was started on special education because of SLD. Methylphenidate was started for ADHD, but the family used it irregularly. There was an improvement in the academic field after special education. During the follow-up period, methylphenidate t was stopped and atomoxetine was initiated due to the development of the side effect of "boredom". Risperidone 0.5 mg/day treatment was started due to behavioral problems such as lying, damaging things, starting fights but it was soon discontinued to lack of effect and weight gain. Aripiprazole was started instead. When the patient applied to our clinic, he was receiving 50 mg/day sertraline, 60 mg/day atomoxetine, and 7.5 mg/day aripiprazole.

The patient had a history of four adenoidectomy operations due to adenoid hypertrophy. He was also diagnosed with an arachnoid cyst incidentally when he was six years older. When he was about eight years old, he was operated on in neurosurgery to relieve cerebrospinal fluid flow due to this arachnoid cyst of approximately 3.0 x 4.0 cm located in the right temporal lobe.

The patient is 11 years old when symptoms such as "slowness, visual and auditory hallucinations, and angry behaviors" persisted, he was taken to the day clinic and clinical follow-up was initiated to clarify his diagnosis and regulate his treatment. In the interviews made in the day clinic, the patient stated that he talked to animals, that he had an imaginary friend and that he thought he could know what his parents were thinking. The patient said that he thought his hallucinations might be visual illusions, that he saw those when he was tired and that he thought it might be related to what was in his mind. Due to those statements of his as well as the observations and mental examinations conducted in the day clinic, the "hallucinations" were thought to be due to intense anxiety rather than psychosis or bipolar disorder. The parents also reported that since the age of 5, the patient had complaints of inactivity, lack of energy, tiring quickly and appearing pensive.

In the observation made during the follow-up of the patient in our clinic; it was thought that he could be diagnosed with SCT because he had symptoms such as sleepiness, slow movements, seeming distracted, and staring blankly as if he was dreaming. According to the patient's mother, our patient was a child who daydreamed frequently, had difficulty staying awake and acting, and was easily confused and distracted. It was stated that since childhood, he was slow and lethargic compared to his peers, participated less in activities, and seemed uninterested. Although his academic achievement has partly improved since he received special education, the symptoms mentioned above did not change. It was learned that he had difficulty in doing his school homework because he was slow and he learned to read and write in the 1st grade but was slower than his friends. In the current evaluation, we found that there were no letter, syllable, and word errors during reading and writing and that the reading speed was appropriate to his grade. It was determined that he did not have any problems in terms of mathematical skills. It was seen that he did not have any difficulties in the conceptual area but was slow in writing. For these reasons, SLD was ruled out and the symptoms were thought to be caused by SCT. While receiving methylphenidate treatment, the symptoms of inattention decreased somewhat, but the patient discontinued the treatment because of dysphoria. The patient was being examined by a neurologist at regular intervals since the diagnosis of arachnoid cyst. No abnormal findings were found in the neurological examination and tests, and no epilepsy finding was detected in the electroencephalography tests performed on the patient.

To obtain more objective data about the patient, the BCAQ was applied. The patient got 3 or 4 points from at least three items on the scale which was judged to be compatible with SCT. Since the symptoms of attention-deficit continued despite atomoxetine treatment, methylphenidate was started by increasing the dose gradually, in addition to atomoxetine. During the follow-up of our clinic, aripiprazole was discontinued by reducing the dose due to daytime sleepiness and this adverse effect resolved. The symptoms of SCT, such as slow movement, seeming apathetic and having a difficulty acting, persisted. In the Wechsler Intelligence Scale for Children-4 test, it was determined that the patient had normal intelligence capacity.

In the child symptom screening inventory for parents and teachers, areas such as absent-mindedness and avoidance of situations requiring mental effort were frequently marked, while items related to hyperactivity were not. In addition to the signs of oppositional defiant disorder items questioning depression symptoms such as depression most of the day, lack of interest in pleasurable activities, low energy, feeling tired for no reason, and poor decision-making and concentration skills were frequently marked. In clinical interviews no cardinal symptoms were elicited and the symptoms were thought to be due to SCT. Teacher reports as well as clinical interviews also supported SCT.

In the Children's Depression Inventory (CDI) and State-Trait Anxiety Inventory for Children (STAI-C) which are both valid and reliable instruments baseline scores were; 15, 34 (trait), 46 (state); respectively.[12,13] The corresponding scores at the end of the follow-up were; 4, 30 (trait) and 35 (state); respectively.

It is planned that the sertraline treatment of the patient, whose anxiety symptoms were observed to decrease during the follow-up, will be reduced and discontinued during the outpatient follow-up.

Discussion

Here we report a patient with SCT, who was followed for a long time with various diagnoses including childhood depression, anxiety disorder, specific learning disorder, ADHD-inattentive type. Despite receiving the appropriate dose and duration of antidepressant treatment complaints such as slowness in movements, apathy to activities, proneness to fantasy and staring blankly continued. No cardinal symptoms of mood disorders including depression were elicited in interviews and CDI scores were below cut-off. Insight into his "hallucinations" was preserved and they were found to be related to anxiety levels which were elevated compared to his peers.

In a study in which elementary school students were evaluated, it was found that cases evaluated as SCT exhibited higher levels of internalization symptoms such as somatization, anxious and depressed appearance, and socialization problems.[14] In a study conducted by Hartmann, it was found that the symptoms of SCT are positively related to the symptoms of internalization in people who have a high SCT score.[15] In the studies conducted, it is stated that the symptoms of internalization persist even if the attention symptoms are controlled.[16] This condition causes difficulties in distinguishing between diagnoses such as depression and anxiety disorder. In the literature, SCT symptoms are associated with depression and anxiety symptoms, especially depressive ones.[17] Our patient, who did not experience any difficulties in the conceptual field but appeared to be slow while writing, was not evaluated as having a learning disability. These symptoms were thought to be caused by SCT. In a study by Barkley[4] in 2013, unlike ADHD, SCT was not associated with SLD. While learning difficulties related to literacy and mathematics were significantly more common in ADHD cases, this was not the case for SCT.[4]

Conclusion

As a result, psychiatric diseases such as ADHD, depression, and anxiety disorders can be observed in children who have symptoms of SCT. In the follow-up process of our case, symptoms such as anxiety, introversion, depression, unhappiness, and academic failure were followed up and treated with different diagnoses than they were. Co-diagnosis with effective dose medical treatment has partly improved, but there has been no improvement in SCT complaints such as delusion, confusion, and slowness. This case report provides information about the clinical appearance of SCT and to reveal the distinction between it and other psychiatric diseases.

Ethics

Informed Consent: Written informed consent was obtained from the patient and his family.

Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: S.A., B.K., N.Ç.M., Concept: S.A., B.K., N.Ç.M., Design: S.A., B.K., N.Ç.M., Data Collection or Processing: S.A., B.K., Analysis or Interpretation: S.A., B.K., Literature Search: S.A., B.K., Writing: S.A., B.K.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

References

1. Becker SP, Langberg JM. Sluggish cognitive tempo among young adolescents with ADHD: relations to mental health, academic, and social functioning. J Atten Disord. 2013;17:681-689.
2. Leopold DR, Bryan AD, Pennington BF, Willcutt EG. Evaluating the construct validity of adult ADHD and SCT among college students: a multitrait-multimethod analysis of convergent and discriminant validity. J Atten Disord. 2015;19:200-210.
3. Becker SP. Topical review: sluggish cognitive tempo: research findings and relevance for pediatric psychology. J Pediatr Psychol. 2013;38:1051-1057.
4. Barkley RA. Distinguishing sluggish cognitive tempo from ADHD in children and adolescents: executive functioning, impairment, and comorbidity. J Clin Child Adolesc Psychol. 2013;42:161-173.
5. Fırat S, Bolat GÜ, Gül H, Baytunca MB, Kardaş B, Aysev A, Ercan ES. Barkley child attention scale validity reliability study. J Psychiatry Neurol Sci. 2018;31:284-293
6. Barkley RA. Sluggish cognitive tempo (concentration deficit disorder?): current status, future directions, and a plea to change the name. J Abnorm Child Psychol. 2014;42:117-125.
7. Barkley RA. Distinguishing sluggish cognitive tempo from attention-deficit/hyperactivity disorder in adults. J Abnorm Psychol. 2012;121:978-990.
8. Bauermeister JJ, Barkley RA, Bauermeister JA, Martínez JV, McBurnett K. Validity of the sluggish cognitive tempo, inattention, and hyperactivity symptom dimensions: neuropsychological and psychosocial correlates. J Abnorm Child Psychol. 2012;40:683-697.

9. Becker SP, Langberg JM, Luebbe AM, Dvorsky MR, Flannery AJ. Sluggish cognitive tempo is associated with academic functioning and internalizing symptoms in college students with and without attention-deficit/hyperactivity disorder. J Clin Psychol. 2014;70:388-403.
10. Lee S, Burns GL, Snell J, McBurnett K. Validity of the sluggish cognitive tempo symptom dimension in children: sluggish cognitive tempo and ADHD-inattention as distinct symptom dimensions. J Abnorm Child Psychol. 2014;42:7-19.
11. Saxbe C, Barkley RA. The second attention disorder? Sluggish cognitive tempo vs. attention-deficit/hyperactivity disorder: update for clinicians.J Psychiatr Pract. 2014;20:38-49.
12. Öy B. Children's Depression Inventory: Applications in healthy children and in those applying to child mental health clinics. Türk Psikiyatri Derg 1991;2:137-40.
13. Özusta Ş. State-Trait Anxiety Inventory for Children: Study on adaptation, reliability and validity. Turk J Psychol. 1995;10:32-44.
14. Carlson CL, Mann M. Sluggish cognitive tempo predicts a different pattern of impairment in the attention deficit hyperactivity disorder, predominantly inattentive type. J Clin Child Adolesc Psychol. 2002;31:123-129.
15. Hartman CA, Willcutt EG, Rhee SH, Pennington BF. The relation between sluggish cognitive tempo and DSM-IV ADHD. J Abnorm Child Psychol. 2004;32:491-503.
16. Garner AA, Marceaux JC, Mrug S, Patterson C, Hodgens B. Dimensions and correlates of attention deficit/hyperactivity disorder and Sluggish Cognitive Tempo. J Abnorm Child Psychol. 2010;38:1097-1107.
17. Bolat GU, Bolat H, Ozgul S, Suren S, Yazici KU, Bacanli A, Ercan ES. Sluggish Cognitive Tempo and Attention Deficit Hyperactivity Disorder: Similarities and Differences. Turkish J Child Adolesc Ment Health. 2020;27:170-180.