Chapter 11
Treating Stuttering in Children With Autism Spectrum Disorder

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ABSTRACT

The number of case reports of children with autism spectrum disorder (ASD) who stutter is increasing. The duration of intervention for stuttering in children with attention-deficit hyperactivity disorder (ADHD) is often greater than for children who only stutter. Whether there is a similar pattern in children with ASD who stutter should also be examined. In this study, the factors influencing the prognoses of two children with stuttering and ASD were investigated. One child's stuttering had improved and had almost been eliminated, and the other's stuttering continued. The results of the investigation showed that a significant increase in language ability and the absence of physiological problems assisted in eliminating stuttering. The child who continued to stutter originally showed a higher than average language level and high anxiety. Preventing and eliminating anxiety that accompanies ASD, in addition to intervention for stuttering, may be indispensable to reduce stuttering and improve fluency.

INTRODUCTION

The relationship between stuttering and comorbid disorders has long been discussed (Arndt & Healey, 2001; Blood & Seider, 1981; Briley & Ellis, 2018; Donaher, Healey, & Zobell, 2009; Donaher & Richels, 2012; Druker, Hennessey, Mazzucchelli, & Beilby, 2019; Graham, 2006; Homzie, Lindsay, Simpson, & Hasenstab, 1988; Nippold, 1990; Nippold & Schwarz, 1990). In particular, much attention has been paid in recent years to the coexistence of neurodevelopmental disorders. It has been suggested that the overlap between Autism Spectrum Disorders (ASD) and Attention-Deficit/Hyperactivity Disorder (ADHD) is an important phenomenon for understanding the mechanism of stuttering (i.e., Briley & Ellis, 2018).

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Epidemiological data on such comorbidities are scattered, but it is problematic that the results vary widely depending on the measurement method (Blood, G. W., Ridenhour, V. J., Qualls, C. D., & Hammer, C. S., 2003). In Japan, 15-18% of those with stuttering had comorbid neurodevelopmental disorders such as ASD and ADHD (Miyamoto, 2020; Tomisato, Oishi, Asano, Watanabe, & Ogawa, 2016).

In addition to clarifying the pathogenesis of stuttering and investigating the causes of stuttering, a significant finding in the research on stuttering and comorbid disorders is that the clinical features of comorbid disorders differ from those of non-comorbid cases. In other words, it is presumed that other coexisting disabilities may require a different support and as such, these specific differences need to be clarified. It has been speculated that children who stutter with other comorbid disabilities may need additional support, and it is necessary to clarify the specific differences compared to children who stutter but do not have a comorbid disability (Briley, P. M. & Ellis, C., 2018). What the differences are depends on the type of comorbidities. In this chapter, we will focus on ASD as an example of a disorder that overlaps with stuttering. An interesting aspect of the research on comorbidity with ASD is that it includes those studies that have identified children who stutter with overlapping ASD, as well as those that have identified children with ASD who have not received a diagnosis of stuttering.

BACKGROUND

First, there are some things we know from genetic research. In studies on highly consanguineous families from Pakistan, the loci on chromosomes 3, 12, and 16 were identified as more definitive evidence for linkage in stuttering (Riaz, Steinberg, Ahmad, Pluzhnikov, Riazuddin, Cox, Drayna, 2005; Raza, Riazuddin, Drayna, 2010). Loci on Chromosomes 2, 3, 14, and 15 were identified in a large polygamous family from Cameroon, West Africa, and gave evidence of playing a causative role in stuttering (Raza, Gertz, Mundorff, Lukong, Kuster, Schaffer, & Drayna, 2013). In a genetic study of families in which many individuals who stutter were born, several chromosomes were found to be associated with stuttering, including chromosome 2 (Suresh, Ambrose, Roe, Pluzhnikov, Wittke-Thompson, Ng, … Cox, 2006). Chromosome 2 has already been associated with the development of ASD (Buxbaum, Silverman, Smith, Kilifarski, Reichert, Hollander, … Davis, 2001). When analyses were performed on chromosome 2 from subjects with a narrow diagnosis of autism with phrase speech delay, the results suggested an increasing likelihood of linkage. This relationship between autism and stuttering through linkage gene study had been appeared interesting (Buxbaum et al., 2001).

A study of high-functioning individuals with autism and Asperger's Syndrome reported that their speech contained more repetitions of sounds, syllables, and words and more "revisions" of words than those of the typical developmental group (Shriberg, Paul, McSweeny, Klin, Cohen, & Volkmar, 2001). This "revision" symptom is distinguished from stuttering-like disfluencies in the assessment of stuttering speech symptoms and is classified as "Other Disfluency (ODs)," which is a very important feature when expressing the disfluency of ASD.

Since revision is closely related to linguistic ability, it is predicted that syntactic errors may be the reason for the high incidence of revision in ASD. In addition to this symptom, some have reported that Atypical Disfluencies (ADs) are common in ASD speech (Hietala & Spillers, 2005; Scaler Scott, Grossman, Abendroth, Tetnowski, & Damico, 2007; Sisskin, 2006). ADs here (E.g. in this manuscript, in Scaler Scott et al., etc.) refers to the repetition of final words. Hietala and Spillers (2005) describe the repetition of a syllable at the end of a word (e.g., baseball-ball), the repetition at the end of a word of a