


# Suicide Leap of an 11-Year-Old Girl with Autism Spectrum Disorder

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## Abstract

Autism Spectrum Disorder (ASD) has been linked with risk of suicide, and several cases of suicide attempts by adolescents with ASD have been reported. However, there is scant research on therapeutic approaches to prevent suicide re-attempts by children with ASD who have already attempted suicide. We report our experience of treating an 11-year-old girl with adjustment disorder comorbid with ASD who was transported to our hospital after sustaining injuries from the suicide leap. Initially, she was diagnosed with adjustment disorder brought on by poor interpersonal relationships at school, and, upon reviewing the patient's personal history, her underlying ASD characteristics became apparent. To prevent a re-attempt, it was crucial to reduce her risk factors and enhance her protective factors. To reduce her risk factors, we manipulated the environmental factor that triggered the patient's suicide attempt. In addition, to reinforce her protective factors, we intervened in the parent-child relationship and addressed her hesitation to ask for help, which we identified as a predisposing factor since early childhood. Over the course of her treatment, she did not exhibit suicidal ideation or re-attempt suicide.

## Keywords

autism spectrum disorder, child, treatment, prevention for suicide re-attempt, suicide predisposing factor

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## Introduction

Neurodevelopmental disorders associated with suicide attempts include Autism Spectrum Disorder (ASD) and Attention-Deficit/Hyperactivity Disorder (ADHD). While research on ADHD-related suicide has been increasing since the 1980s, few studies have been conducted on ASD-related suicide.<sup>1</sup> However, in the wake of recent reports by Mikami et al,<sup>2,3</sup> more medical reports of suicide attempts by adolescents with ASD are finally being conducted. Case studies of ASD-related suicide attempts by adolescents have reported that background factors such as bullying increase the risk of patients with ASD attempting suicide,<sup>4</sup> that first-time suicide attempts are more likely to be fatal,<sup>3</sup> and that adjustment disorder comorbidity can increase the risk of ultimate suicide completion.<sup>3,5,6</sup> However, there is no information on approaches to prevent re-attempts by elementary school, aged children with ASD who have attempted suicide.

Therefore, we report our experience of treating an 11-year-old girl (in the 6th grade of elementary school) with comorbid adjustment disorder and ASD after she was injured in a suicide leap from a great height.

The purpose of this case report is to discuss the clinical features of a child with ASD in relation to her suicide attempt and our approach to prevent further suicide attempts.

## Case

The patient is an 11-year-old girl who was transported to our hospital after sustaining injuries in a suicide leap

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from a great height. On the day of her hospitalization, our department was asked to carry out a psychiatric evaluation. During our initial examination, the patient reported that she was struggling with interpersonal relationships at school, and found it difficult to speak to anyone about it, so she thought she had no choice but to die. She said that she was glad that she survived, was sleeping at night, and was not having trouble thinking clearly. However, she reported that she sometimes did not have an appetite.

We then interviewed her mother to learn about the patient's personal history. The patient was born at 38 weeks of gestation, with no indications of delayed language or physical development during childhood. However, as an infant she did not follow her mother or point to objects of shared interest. In nursery school, she often played alone, and always played with LEGO toys, lining them up in a row. In elementary school, she was isolated and always seemed to be worried. Furthermore, she would panic when something unexpected occurred and did not respond well to changes in her environment (ie, changes in classroom). She also exhibited stubbornness and unwillingness to change her mind. However, her grades were not a problem.

Initial psychiatric examination of the patient revealed that she exhibited signs of anxiety, depressed mood, and decreased motivation (though not every day) caused by the stress of her interpersonal relationships at school. However, she did not exhibit signs of diminished interest or pleasure, inhibition of thought, insomnia, or malaise.

Based on DSM-5 criteria, we diagnosed her with an adjustment disorder, mixed anxiety, and depressed mood comorbid ASD (which corresponds to Asperger's syndrome in DSM-IV-TR) when she was 11 years old. Her blood and EEG tests upon admission revealed no obvious anomalies. Her intelligence quotient (IQ) score due to Wechsler Intelligence Scale for Children-Fourth Edition indicated an overall 93 with no intellectual disability. Her score on the Autism-Spectrum Quotient (AQJ)<sup>7</sup> was 27/50. The AQJ was found to have acceptable reliability and validity, including the same cut-off (26) as the AQJ for screening normally intelligent adolescents and adults with Pervasive Developmental Disorders (PDD).<sup>7</sup> The PDD Autism Society of Japan Rating Scale (PARS)<sup>8</sup> indicated an early childhood peak score of 9 and a childhood score of 15. The PARS was developed to screen PDD for all ages; its cut-off point is 5 in early childhood peak score, and 7 in childhood scores. The scores of AQJ and PARS supported the diagnosis of ASD.

In this study, the psychosocial factor underlying the suicide attempt seemed to be maladjustment at school. However, this factor alone cannot explain the suicide

attempt; ASD characteristics also seem to have played a major role in her suicide attempt. From an early age, she was unable to easily seek help her feelings to her family, and her family could not understand her unexpressed troubles in depth.

After the patient was discharged from the critical care center, the mother and child came for outpatient visits every other week. Two months after our initial examination, we explained the characteristics of ASD and the troubles the patient was experiencing to them. Specifically, we explained that she had failed to form interpersonal relationships and had been troubled due to not being able to talk to anyone. It was observed that the patient started to share her feelings with her family as a result of the intervention of the parent's and child psychoeducation and the parents-child interaction.

Three months after our initial examination, the patient scored 13 on the Center for Epidemiologic Studies Depression Scale (CES-D).<sup>9</sup> The CES-D evaluates depressive symptoms, and has been used for assessment of depression in children.<sup>10</sup> The cut-off point was a score of 15/16, with higher scores indicating greater symptoms of depression. Furthermore, the patient no longer exhibited suicidal ideation, and was able to harmoniously live at home with her family. However, as it may have been problematic for her to return to her former school, she began attending a special class during her truancy.

Six months after our initial examination, she scored 3 on the CES-D. The patient was able to attend the adaptive instruction classroom without any problems and seemed relieved to have a place to go where she felt comfortable away from home. At that point, she exhibited no suicidal ideation or other inclination to self-harm. It has now been 2 years since our initial examination, and the patient has not re-attempted suicide.

Institutional review board approval was not required for the anonymized 5 case reports below based on institutional policies. Informed consent was obtained from the children and her guardian.

## Discussion

This case study involved an 11-year-old girl with adjustment disorder comorbid with ASD, who was treated after she became injured due to a suicide leap from a great height. This is the first case study that focuses on a therapeutic approach for preventing suicide re-attempts by a child with ASD.

Mikami et al studied the relationship between ASD and found that 12.8% of adolescents who attempted suicide had ASD, and within this group, male subjects were significantly more likely to attempt suicide.<sup>3</sup> In addition,

Mayes et al reported that the frequency of suicide-related behavior in the ASD group was 28 times higher than in the typical development group,<sup>11</sup> suggesting that ASD and suicide attempts are highly related.

Among adolescents with ASD, suicide-related behavior is commonly comorbid with depression.<sup>4,11,12</sup> Meanwhile, adjustment disorders are observed in approximately 80% and 70% of suicide attempts by adolescents<sup>3</sup> and adults<sup>13</sup> with ASD, respectively. This suggests that, not only depression, but also adjustment disorders are major risk factors for suicide among individuals with ASD. Additionally, the ASD group tends to employ more fatal means compared to the typical development group.<sup>3,13</sup> Therefore, in ASD cases, it is necessary to intervene earlier (at the time of adjustment disorder diagnosis), as well as treat patients with understanding and the cooperation of family.

In this case, adjustment disorder caused by the stress of poor interpersonal relationships at school was indicated. Although this was the patient's first suicide attempt, it may have been fatal due to leaping from a great height. We identified 2 major factors that played a role in this case. First, the patient repeatedly failed to build interpersonal relationships at school, and therefore suffered a decline in self-esteem. Second, from an early age, she was unable to easily seek help by showing her feelings to her family, and her family was unable to understand her unexpressed feelings well. We believe, in this case, that hesitation to ask for help which had been continuing since early childhood was a predisposing factor for the suicide attempt. In addition, impulsivity has been reported to be associated with suicide attempts.<sup>14,15</sup> In fact, some characteristics of the girl, such as impulsiveness and stubbornness, made it difficult for her to change her thought processes, which played a significant role in this case.

In ASD cases, patiently explaining the characteristics of ASD has therapeutic significance in itself.<sup>16</sup> Furthermore, creating an environment where the patient feels comfortable away from home and relieving loneliness help prevent further suicide attempts.<sup>16</sup> This is why 2 months after our initial examination, we explained to the mother and child the characteristics of ASD and the troubles that the patient was experiencing; additionally, we partnered with a special class in which the patient could feel comfortable while being away from home.

As shown above, there are 3 points in this case report that are worth noting. First, in ASD, psychosocial factors such as low self-esteem due to repeated failure to build interpersonal relationships, and/or poor communication with the patient's parents since childhood increase the risk of suicide. Second, in ASD, adjustment disorders that do not lead to depression may be associated with the

risk of suicide. Third, in ASD cases, recognizing the characteristics of ASD for the patient and their guardians has therapeutic significance. General practitioners should make efforts to bridge the awareness gap that have existed between the patients and their guardians since childhood. These 3 points should always be considered when examining a suspected case of ASD, for early diagnosis ASD, and while initiating treatment and intervention with awareness of patients' psychosocial factors of suicide.

To prevent suicide re-attempts, it is critical to reduce risk factors, reinforce the protective function of families,<sup>5,17</sup> and rebuild parent-child relationships so that adolescents can easily seek help from their families.<sup>5</sup> To mitigate the risk caused by her adjustment disorder, we manipulated the environmental factor that triggered the patient's suicide attempts, her interpersonal relationships at school, by enrolling her in a special class in cooperation with the local community. In addition, to reinforce protective factors, it is crucial to utilize a psychiatric treatment method in which the child, family, and therapist carefully intervene with the patient's early developmental history.<sup>5</sup> We intervened in the parent-child relationship after repeatedly listening to the patient's personal history and addressing her hesitation to ask for help.

In child and adolescent suicide cases, there is a high risk of a re-attempt within 6 months of the first attempt.<sup>1</sup> Since the onset of this approach, which was over 2 years ago, there have been no further suicide attempts.

### Author Contributions

Study conception: Takahashi, Mikami, Akama, Onishi, Yamamoto, Matsumoto.

Acquisition of data (case): Takahashi.

Interpretation of data (case): Takahashi, Mikami, Akama, Onishi, Yamamoto, Matsumoto.

Drafting of the manuscript: Takahashi, Mikami.

Critical revision of the manuscript: Takahashi, Mikami, Akama, Onishi, Yamamoto, Matsumoto.

### Declaration of Conflicting Interests

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