# A Case of Pervasive Developmental Disorder Complicated by Social Anxiety Disorder Responding Well to Fluvoxamine Therapy

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**We recently encountered a patient with pervasive developmental disorder not otherwise specified (PDDNOS), in whom complication by social anxiety disorder (SAD) was diagnosed at age 19, and who responded well to fluvoxamine therapy. The patient was a 19-year, 10-month-old male. He first visited our department at the age of 11 years and 3 months with the chief complaint of maladaptive behavior at school, when he was diagnosed as having PDDNOS. He was subsequently managed as an outpatient, with symptomatic alleviation in response to treatment. Recently, he visited our department again with the chief complaint of phobia of eye contact with other people. Based on the diagnosis of PDDNOS complicated by SAD, fluvoxamine therapy was initiated, which resulted in alleviation of the phobia against his own glance. Our experience with this case suggests that treatment with selective serotonin reuptake inhibitors can be effective in patients with PDDNOS complicated by SAD. Further study of patients with PDD associated with SAD, including evaluation of drug therapy, in additional cases is warranted.**

**Key words: pervasive developmental disorder not otherwise specified, social anxiety disorder, selective serotonin reuptake inhibitors**

## INTRODUCTION

Pervasive developmental disorder (PDD) is characterized by disturbed social activity, disturbed communication of one's will, and limited behavior, interest and activity. The disorder may affect not only children, but also adolescents and adults. In Japan the number of patients with this condition visiting outpatient psychiatric clinics has been increasing markedly. Pervasive developmental disorder is known to be often accompanied by obsessive-compulsive disorder, mood disorder, etc. It is not uncommon for individuals without previous diagnosis of pervasive developmental disorder to visit psychiatric clinics with one of these accompanying disorders during or after adolescence, and to be definitively diagnosed as having pervasive developmental disorder. We recently encountered a patient with pervasive developmental disorder not otherwise specified (PDDNOS), in whom complication by social anxiety disorder (SAD) was diagnosed at age 19, and who responded well to fluvoxamine therapy. Verbal consent of the patient and his guardian was obtained orally in advance, and information about the patient contained in this paper has been modified for protection of the patient's privacy, to an extent that would not disturb the scientific discussion significantly.

## CASE REPORT

The patient was first brought to our facility when he was 11 years and 3 months old (in the first year of junior high school). At that time, the chief complaints were: (1) discontinuation of actions when he could not understand lessons at school, or when the lesson schedule was suddenly changed (unable to walk or stand up under such situations, even when urged by the teacher), and (2) occasional self-injury under such situations. However, on each occasion, the boy began to behave normally some time later, as if nothing had occurred. Such problematic behavior was seen only at school and not at home. He belonged to a four-member household composed of himself and three other members: father (age, 51), mother (age, 42), and younger brother (age, 10). There was no particular genetic predisposition in his family. His disease history included nothing noteworthy.

The course of the patient after birth was as follows. He was born with a birth weight of 4100 g by cesarean section. There was no sign of physical growth retardation during infancy or childhood and no sign of any delay in speech development. The extent of independence in terms of the basic activities of daily living was within the normal range for his age, and suggested no problem. During infancy and early childhood, he showed no tendency towards shyness or pursuit of people around, living in a relatively indifferent manner. However, he exhibited some degree of affection for the people around surrounding people. He showed an abnormal degree of engagement in playing with monorail toys. During the 2-year period at a kindergarten, he often cried; however, the people around could usually not fathom a reason. He lacked calmness and was unable to play with other children or to attend athletic meets. Also during the first and second years of elementary school, he frequently got

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angry if he could not do something, and tended to hide himself in spaces within the school or under the desks or to run away from the scene. In the later years of elementary school, although these symptoms alleviated to some extent, they largely persisted. In addition, acts of causing self-injury, such as pulling of own hair, began to be noted. He had some friends, but spoke little, had a tendency towards being a perfectionist, and lacked flexibility. He occasionally got angry when unable to understand jokes. It was thus very difficult for him to assimilate a given atmosphere. Oxyecomia was also noted. His school performance was at an intermediate level.

On the basis of his course after birth and the current symptoms, we diagnosed him as having PDDNOS, in accordance with the DSM-IV-TR. While maintaining a supportive relationship with the patient and his parents, we explained the features of this disorder to the parents and his teacher, so as to facilitate their understanding of the patient condition and arranging of appropriate environments for the patient. As a result, the initial symptoms alleviated over time, and the boy could spend his years in junior high school without problems. WISC-R assessment during the first visit revealed a TIQ = 77, VIQ = 79, and PIQ = 82. He was followed at our facility once every few months, and our management came to an end when he entered the senior high school at age 15.

He visited our facility again at the age of 19 years and 10 months, immediately after graduating from a senior high school that provided special arrangements for children with psychiatric disorders, a year later than he would have been expected to, because of his school-phobia. At that time, he complained of difficulty in making eye contact with other people. The patient complained: "I am afraid of the gaze of people. I am afraid of being watched. I don't mind being watched by someone I know well, but cannot endure being watched by unknown people even by only a few people. I am also anxious while traveling by train. When walking on streets, I cannot keep a straight gaze when someone passes by; I worry that the passerby may find me strange, a feeling that upsets me. I know that those people are not actually gazing at me and that I am overreacting. But, I am consumed by such worry and cannot go outdoors." When asked about the time when such symptoms began to appear, he answered: "They began to appear during junior high school and became gradually worse." He showed no signs of phobia against his own glance.

On the basis of these findings, we diagnosed this patient as having SAD complicating PDDNOS. We proposed fluvoxamine therapy to the patient and his parents. During a follow-up visit, assessment with LSAS-J (Liebowitz Social Anxiety Scale, Japanese version, cutoff score: 50) revealed a total score of 104 (fear/anxiety 59, avoidance 45), and assessment by WAIS-III revealed a TIQ = 71, VIQ = 72, and PIQ = 75.

The effects of fluvoxamine against SAD and its adverse effects were explained to the patient and his parents, and they provided their consent and desire for treatment with this drug; therefore, therapy with fluvoxamine 50 mg was initiated the following month. No adverse reactions (e.g., nausea) to the therapy were noted; therefore, the dose level was increased to 100 mg at 2 weeks after the start of treatment. About 4 weeks after the start of treatment, the effect of the treatment began to be noted, and the patient reported: "I am scarcely concerned with the gaze of people now and I can go outdoors." Later, he began attending the Disabled Support Center, seeking a chance for employment. The total LSAS-J score improved to 67 (fear/anxiety 35, avoidance 32) in the assessment conducted 7 weeks after the start of treatment. Five months after the start of treatment (during fluvoxamine 100 mg therapy), the patient began attending a center that provided work to the disabled.

## DISCUSSION

In the patient presented herein, SAD complicated PDD during adolescence, making it difficult for the patient to go outdoors, but treatment with fluvoxamine resulted in alleviation of the complication. PDD is known to be frequently complicated by obsessive-compulsive disorder, mood disorder, etc. To date, however, complication of PDD by SAD has been reported in only one case from Japan, and there are no case reports from Western countries. The case previously reported in Japan also showed alleviation of the disorder in response to fluvoxamine therapy, like the present case. However, a major symptom in the previously reported patient was phobia against his/her own glance rather than phobia against eye contact with other people. Both phobia against eye contact with other people and phobia against his/her own glance are symptoms of social phobia, but different psychopathological concepts are believed to underlie the two types of phobias [1, 2].

In the present case, in the presence of PDDNOS as the underlying disease, the patient showed typical symptoms of anxiety during social scenes (e.g., "fear of being shamed before other people"), which is known to occur in patients with SAD primarily after adolescence. In addition, the patient also showed an evident tendency for self-reflection about the irrationality of his symptoms. Manifestation of such typical clinical signs of SAD by this patient suggests that although the patient had PDD-associated disorder of social activity, the disorder was mild-to-moderate, and his intelligence level was between borderline and the lower limit of the normal range.

In this case, the total LSAS-J score after treatment was 67, lower than the pre-treatment total score (104). LSAS-J scores between 50 and 70 are considered to correspond to moderate SAD, and scores between 70 and 90 are viewed as reflecting more severe symptoms, possibly causing problems in the occupation and social activities of the patients. LSAS-J scores of over 90 are rated as severe SAD. The total LSAS-J score in this case suggests that treatment with the SSRI improved the symptoms, resulting in conversion from severe to moderate SAD. Furthermore, the patient's fear of others' gaze, difficulty in going out, and the volition to resume social activities alleviated or improved after treatment with the SSRI, which also suggested that the SSRI was probably effective.

In regard to drug therapy for SAD, two selective serotonin reuptake inhibitors (SSRIs), i.e., fluvoxamine

and paroxetine, are covered by the National Health Insurance in Japan. Numerous reports presenting evidence of the effectiveness and tolerability of these two drugs have been published, primarily from Western countries [3, 4]. However, sufficient evaluation has not yet been conducted about the effectiveness or tolerability of SSRIs against anxiety, depressed mood, obsessive-compulsive symptoms, etc., seen in children and adults with PDD [5, 6]. Bearing in mind the above-mentioned two points related to the current status of use of SSRIs for SAD and PDD, we used fluvoxamine as drug therapy for the present case, while carefully bearing in mind the possibility of SSRI-induced activation and agitation, and evaluated its efficacy and adverse effects carefully.

It would be desirable to conduct further studies on PDD complicated by SAD and to evaluate drug therapy, etc., in a larger number of cases.

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