

[Research Report]

A case of autism spectrum disorder in which benzodiazepines anxiolytics are very effective in Childhood-Onset Fluency Disorder (Stuttering)

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[Summary]

I experienced a case in which Benzodiazepine anxiolytics succeeded in childhood-onset fluency. The case was autism spectrum disorder, and it had mild dysarthria since childhood. The case was accompanied by social anxiety disorder just before the end of high school. Since visiting our hospital, he has been prescribing a large amount of benzodiazepine drugs.

There is a possibility that there are potentially many cases where benzodiazepines have a strong effect on childhood-onset fluency disorder, as in this case.

This suggests that childhood-onset fluency disorder is a partial epilepsy that is not yet known and originates from the basal ganglia where no abnormalities appear in the electroencephalogram. There may also be a childhood-onset fluency disorder as a psychogenic non-epileptic seizure.

[key words] childhood-onset fluency disorder, autism spectrum disorder, benzodiazepine derivatives, partial epilepsy, psychogenic non-epileptic seizure

[Introduction]

Childhood-onset fluency disorder has been actively studied in Europe and America as a serious disease. It has been regarded as an inherited disease because of its high family accumulation. Childhood-onset fluency disorder develops between the ages of 3 and 6 years, and is observed in 5% in childhood but 1% in adults (33). Since there are many examples of remission until adulthood, there is a possibility

that it is similar to partial epilepsy. In addition, men are four times more likely than women since childhood 33).

Compared to the normal average, if the parent has childhood-onset fluency, the child is three times more likely to have childhood-onset fluency 33).

Fluency disorder may occur in adults due to cerebral infarction or extremely severe head bruise 18,37).

Currently, the search for loci for childhood-onset fluency is rapidly progressing through studies of many cases in families. Many loci for childhood-onset fluency have been discovered 12,29,30,32,33), and childhood-onset fluency is a syndrome caused by a number of factors 33).

[Case]

(Case) 56 years old, male, right-handed (father / mother / sister also right-handed)

(Family history) There is no childhood-onset fluency disorder or epilepsy in siblings and close relatives.

When father was in high school, father took a walk without going to school, so grandfather, who was very strict, took his to a university hospital psychiatry and was diagnosed with personality disorder (no medication).

His father was simply an autism spectrum disorder. Although his father was harsh to his mother, it was very kind to his children, and he never remembered the case being angry by his father.

His father had the same morbid heat and cold as he did.

(Characteristics) nervousness, gentle, honest, friendly, hard working.

(History) Nothing to mention

(Current medical history / life history) There is nothing to mention in the perinatal period because the child was a 25-year-old father and a 24-year-old mother. Parents and relatives have never been told about infantile / infant epilepsy such as febrile seizures.

It is possible that the father did not work, the mother worked alone to cover the household budget, and the stress caused by this family discomfort was on the case.

Until kindergarten, he was very crying, and every day especially in the evening, he kept crying for hours without reason. Also, when he was in kindergarten, he was taken down from the kindergarten bus and he couldn't walk as close as possible from the bus stop to my house. The kindergarten has only been open for a year, He participated only a little in kindergarten.

When he was in kindergarten, a girl talked to me but he couldn't speak.

Growth was fast, when he entered elementary school, the tallest was the second highest in class.

When he became an elementary school student, he stopped crying at all and ran from his house to school (about 15 minutes). He was not good at interpersonal relationships. He had no friends until the first grade of elementary school. In the second grade of elementary school, a friend of a classmate was made by intermediary between parents, and after school, they began to play together like everyday. The friend had a very gentle personality.

Since the days of elementary school, there were some dysarthria such as "ki" and "chi" that could not be distinguished. Although it is said that it continues today, for

example, he did not know how to pronounce "Earth"(In japan, it pronounce "chityu" .

He often pronounced "kichu" .). The cases still have unclear pronunciation and are not good at telephones.

In the lower grades of elementary school, when the class was held, there was a continuing habit of attaching "Anne" first, and teachers often pointed out that, but it was not easy to improve. If you put it at the beginning of the statement, it is easy to say so the statement.

He have never been bullied because he was in the countryside or because his mathematics was very good.

"In the evening, his head became dull and his sense of reality diminished." "At dinner, the chopsticks stopped for a few or ten minutes. No, maybe even more." Often happened in lower grades. These seizures ended at the end of the fourth or fifth grade.

He was not good at exercising because he couldn't tap into my power during the exercise. In third grade, he was accused of awkward running and was given the nickname "Dotchin Battan" and his way of running.

He hasn't trained anything, but he knows that he can have biceps in his third grade in elementary school. It is thought that bicep was noticeable because of low body fat and muscle.

He was told when he was in elementary school that surprising responses were much stronger than ordinary people 40). The head circumference was large. Also, he was very scared to go to the toilet at night when he was in elementary school. The god fear was stronger than in elementary school.

In the fourth grade of elementary school, he notice that his abdominal muscles are

very strong and it is safe to hit his abdomen strongly. Also, notice that almost can not do abs exercise.

In the fourth and fifth grades of elementary school, running became a topic where the faces were distorted and laughed.

Growth is fast, height growth almost ends in the first year of junior high school, and there are times when the 50m run is the fastest in the first year of junior high school. Short sprinting was fast, but long sprinting was not good.

In junior high school, he was teasing for stutter my best friend several times, but he was a good friend and didn't mind much. In the second year of junior high school, sleep paralysis occasionally occurred.

He noticed that the first word did not appear in the first year of high school. It is presumed that repeated stuttering has changed to difficult stuttering.

As a result, he is struggling with the flow. He often left early before the Japanese language class and repeatedly fell out of school because the first words did not appear during the Japanese language class.

In high school, learn how fluency becomes more serious when stress builds up. The mathematics system was very good, but English was very poor. He didn't study science and mathematics at all, only English, but English always had the worst score. The national language was also poor. The case thought that the language system was inherently weak. It was a hot topic since junior high school when English pronunciation was funny.

At the end of the third year of high school, social anxiety disorder (interpersonal tension) developed. At the time of the second exam, he was overwhelmed and fell to T University, which was the school he wanted. Due to social anxiety disorder, the prep school quits in two months and returns to the hometown. And he went home. After a short break, he entered the local former Imperial University.

When he was in university, he was embarrassed to read English during an English class and could not read it because of disfluency.

Also, during college, due to social anxiety disorder, it was very difficult to attend classes where people were crowded, so he spent many years.

Because of fluency and social anxiety, he was unable to make friends during college.

In the second half of his university days, he learned from the net that the stellate ganglion block was effective for fluency and received them. In particular, stellate ganglion block had very strong effects on both fluency and social anxiety.

College 4th year, year when he left school for more years, a motorcycle accident called a frontal collision with an opposing car, fractured his skull, and he was hospitalized for 2 months (amnesic after trauma was four and a half days). At this time, head MRI was performed, but there was nothing to mention.

After this accident, he visited this hospital because of fluency and social anxiety. The author becomes the attending physician and begins to administer benzodiazepines. Although cloxazolam, flurazepam, lorazepam, clorazepate, flunitrazepam, flutoprazepam, ethyl lofrazepate, clonazepam, alprazolam, etc. were prescribed, other than ethyl lofrazepate, clonazepam, alprazolam showed good effects on fluency disorder. Alprazolam is presumed to have an anticholinergic effect, but the fluency disorder worsened severely when taken¹⁴). Ethyl lofrazepate and clonazepam could hardly feel the effect of weak action.

I prescribed amitriptyline, but if he take 1 tablet, he sleep for 24 hours, and the fluency disorder will become severe and severe for about 3 days, and the dose will be completed once.

And, tandospirone was prescribed, no efficacy was observed for fluency disorder and social anxiety disorder. In addition, meprobamate³⁶) was prescribed, but only slightly effective for fluency disorder and social anxiety disorder.

Carbamazepine^{15,16,35}), phenytoin, sodium valproate, eperisone, haloperidol^{22,23}), and sulpiride were prescribed in a very short term according to the wishes of the case. He couldn't. In the case of carbamazepine, the fluency disorder got worse. As a result of various explorations, we settled on prescriptions for bromazepam 20mg/day, diazepam 15mg/day, etizolam 3mg/day.

Benzodiazepines are dramatically effective for fluency disorder, but social anxiety disorder is a problem because it is effective but not sufficient for social anxiety

disorder. m was disappointed that he had to do it in the company. Because he was a programmer, he spoke a little, but he had social anxiety disorder.

In order to relieve interpersonal tension, he had to take a large amount of benzodiazepines. He was not taking benzodiazepines on his days off. Also, it was a life of a round trip between the company and the apartment.

[Discussion]

Since the case was Autism Spectrum Disorder, the stress tolerance was low, and anxiety disorder and muscle tension were abnormally strong from an early age, which caused symptoms such as dysarthria, inability to exercise abdominal muscles, and awkward running It is also speculated. However, the case is still indistinguishable between “ki” and “chi”, and it is not clear when typing “tichuu” or “kickuu” with the keyboard.

Because the case has some kind of epilepsy, benzodiazepines may be effective for

fluency disorder. However, since the strong muscular tone due to anxiety disorder is solved by benzodiazepines, a mechanism that can be effective for fluency disorder is also conceivable.

It is also possible that it was a childhood-onset fluency disorder as a psychogenic non-epileptic seizure due to stress.

No literature suggesting an association between epilepsy and fluency disorder was found. However, there is a paper (38) that states that the antiepileptic drug levetiracetam is effective in cases of combined fluency and partial epilepsy, but this may be the case.

In the United States, brain surgery is performed for fluency disorder. This is because the organic dysfunction of the basal ganglia is considered to be the basis of fluency disorder (4,13).

Recently, vagus nerve stimulation therapy is frequently performed because epileptic seizures are less likely to occur due to vagus nerve stimulation (39). This mechanism may be the reason why drought and stellate ganglion block and benzodiazepines are successful in patients with fluency disorder.

Because of its dependence, benzodiazepines are almost treated as narcotics in the West and may be arrested for possession without a prescription. In Europe and the United States, research on fluency has been very active since a long time ago, but there is a possibility that a paper showing the efficacy of benzodiazepines for fluency is not found.

In Europe and the United States, alprazolam and clonazepam are frequently prescribed, although they are benzodiazepines. However, alprazolam has an anticholinergic effect, and immediately after taking it, the fluency disorder is severe and severe as in cases (14). The patient had also taken clonazepam, but could not feel the effect. In Europe and the United States, alprazolam is the most frequently used benzodiazepine drug because of its low dependence, and it is considered that benzodiazepine drugs are recognized as aggravating fluency.

Clonazepam, an antiepileptic drug, is a benzodiazepine drug that has been used for a long time, and is prescribed relatively frequently in the West. For this reason, there are some papers (10,11,28,34) showing the efficacy of clonazepam for social anxiety disorder and panic disorder, but no paper showing the efficacy for fluency disorder has been found.

Similarly, clobazam, an antiepileptic drug, is a benzodiazepine drug that was released relatively recently, but no paper has been found to show its effectiveness against fluency disorders. It was noted that pagoclone is effective for fluency disorder, but it has a pharmacological action close to that of benzodiazepines and is not released due to concerns about its dependence (17,24).

As in the case of benzodiazepines, there are only a few or a large number of benzodiazepines that have dramatic effects on fluency disorder. In Europe and the United States, benzodiazepines are close to narcotics and less dependent than alprazolam and clonazepam. Judgment is difficult because it is rarely prescribed. There are reports that fluency disorder has become mild due to SSRIs (fluoxetine 3), (paroxetine 5,7), (sertraline 9). However, there are papers (6,8,21) that sertraline causes fluency. Cases with these SSRIs did not cause fluency disorder. Childhood-onset fluency often becomes severe with stress and there is no abnormality in the electroencephalogram, so there may be a possibility that it is close to a non-convulsive status epilepticus (27).

[conclusion]

Even if you take carbamazepine (15,16,35), which is reported to be effective for partial epilepsy and is effective for fluency disorder, the fluency disorder in the case becomes serious.

The mechanism of action of carbamazepine and benzodiazepines is different. Benzodiazepines, which are effective for fluency disorder in cases, are effective for partial epilepsy.

Childhood-onset fluency seems to be a partial epilepsy that is not yet known, starting from the basal ganglia (31) where no abnormalities appear in the electroencephalogram.

---- This is an announcement in accordance with ethical principles of research and research ----

[Reference]

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Toshiro Takami: 1 case that had been diagnosed as halitosis

---- Nasal Secretion Deficiency Syndrome (new concept of ozena) ----

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