



Case of an Adult with Attention Deficit/Hyperactivity Disorder: The Course of Treatment for Improvement in Processing Speed

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Authors' contributions

This work was carried out in collaboration between all authors. Author JO designed the study, wrote the protocol and wrote the first draft of the manuscript. Author RS performed the psychological assessment and analysis. Authors SF, RN and HM managed the analyses of the study. Authors TO and YK managed the literature searches. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Aims: Adult attention-deficit/hyperactivity disorder (ADHD) is one of the developmental disabilities that have a negative causal relationship with the ability to socialise. The diagnosis and effective treatment of adult ADHD is difficult, and this study aims to introduce useful diagnosis and treatment method, focusing on the processing speed of an adult ADHD patient.

Presentation of Case: A 35-year-old male, who frequently altered his occupation, visited our hospital. Three types of psychological assessment were used on him: Adult ADHD Self Report

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Scale (ASRS-v1.1), Autism-Spectrum Quotient Japanese version (AQ-J), and the Wechsler Adult Intelligence Scale (WAIS)-Third edition.

Results: Significant changes only started manifesting when cognitive behaviour therapy (CBT), which focused on processing speed, was used.

Conclusion: Various types of CBT have been employed, but the approach we chose to apply is comparatively easier to carry out.

Keywords: Attention-deficit/hyperactivity disorder (ADHD); cognitive behaviour therapy; depression; working condition; processing speed.

1. INTRODUCTION

Social adaptation of adult attention-deficit/hyperactivity disorder (ADHD) has emerged as a topic of considerable clinical and political interest, which is partly owing to evidence that psychiatric disorders are associated with working condition [1,2]. Adult ADHD may be the cause which cannot often fit society and work. Nevertheless, the diagnosis and treatment of adult ADHD are not well understood, especially in primary care samples [3]. Stimulants like atomoxetine or methylphenidate are usually the first choice of drug; however, as many as 20% of patients do not respond to them. Stimulants may also worsen comorbid sleep, mood, and anxiety disorders, and they are associated with problems of ECG abnormality. Ng demonstrated Bupropion, a dopamine and norepinephrine reuptake inhibitor, may help ADHD management [4]. However, its effect has not been established yet, and even today the mainstream of ADHD's pharmacologic treatment are stimulants.

Taking into account a well-established point of view, it can be said that psychological therapies such as cognitive behaviour therapy (CBT) are more efficient than pharmacologic treatment for adult ADHD [4,5]. Waiss et al. [6] reported that CBT therapy could be effective in adults with ADHD, even in patients who are not able to use stimulants. Manos reported the importance of utilising psychosocial therapy and medication therapy for effective treatment of adult ADHD [7,8]. In Japan, however, psychotherapy such as CBT is often not taken in psychiatric treatment. Furthermore, there are few clinical studies pertaining to occupational health. Therefore, in this case report, we discussed the effect of CBT on adult ADHD, with an emphasis on processing speed.

2. PRESENTATION OF CASE

A 35-year-old trader, who had been working in a housing company for six months, visited our

hospital to receive psychiatric therapy. His chief complaint was that he could not concentrate on his work as he was busy. He complained of a decline in will and concentration, and the manifestation of anxiety and impatience. Before his visit, he had been treated for panic disorder nine years ago, depression six years earlier, and adjustment disorder a couple of years back. During his previous treatment, he realised that it was proving to be ineffective due to its short duration. On diagnosis of ADHD, psychiatric therapy, comprising the medication, CBT, and counselling, was utilised.

2.1 Past History

The subject was operated upon for pneumothorax at the age of 26 years. His elder brother had schizophrenia, and his father succumbed to subarachnoid haemorrhage three years ago.

2.1.1 Physical examination and clinical data

Clinical laboratory findings (blood, urine, and biochemical data) relating to the patient were within the normal range. His nutritional condition was up to the mark, and the electrocardiogram showed no specific findings.

2.1.2 Birth and occupation

The subject was born in Miyagi prefecture and was the younger of two brothers. His mother put up significant efforts to tend to his sick brother. After graduating from an industrial high school, he entered the industrial training school. Thereafter, he worked part-time, and soon became the salesman of a real estate business. He did not encounter any problem during his initial period of employment but started experiencing frequent bouts of panic seizure after the pneumothorax operation in his fourth year as an employee. After his father passed away, the burden of running the entire household fell on his shoulders. Following that, he continued to be treated for depression intermittently for nine years.

2.2 Mental Test

The patient scored four, which is the cut-off, on the Adult ADHD Self Report Scale (ASRS-v1.1). It revealed that he possessed habits characteristic of ADHD [9,10]. Autism-Spectrum Quotient Japanese version (AQ-J): His score of 18 points (< 33) fell substantially below the cut-off. Only the score of "attention in the detail" was the equal score to the adult autism-spectrum cluster by the lower rank item [11].

Wechsler Adult Intelligence Scale (WAIS)-Third edition [12] is an established measure of intelligence. It comprises 13 subtests subdivided into verbal (seven) and performance (six) scale. The Vocabulary, Similarities, Information, and Comprehension subtests formed the verbal comprehension portion. Arithmetic, Digit Span, and Letter-Number Sequencing contribute to working memory. Picture Completion, Block Design, Matrix Reasoning and Picture Completion make up the perceptual organization. Finally, Digit Symbol and Symbol Search constitute processing speed.

Assessment of ADHD: Initially, the subject's mother mentioned that she did not observe any issues in relation to her younger son. However, when she attended the Diagnostic Interview for ADHD in adults (DIVA), conducted by the clinical psychologist, she realized that he did possess typical ADHD [13] habits. The patient at the start felt that carelessness was a part of his personality. After appearing for DIVA, he felt that to delay preparations applied to the feature of ADHD (Figs. 1 and 2).

2.3 Clinical Course

Fig. 1 shows the patient's clinical course and treatment. Before the treatment for ADHD began, he felt that his work efficiency was bad. Confusion and irritation were also nagging him. His depressive mood forced him to retire. Fig. 2 shows the change of three psychological tests. When he undertook WAIS-III [14], it was conspicuous that his processing speed was low in particular. With the initiation of medication (atomoxetine) in Fig. 1, his psychological condition became stable, and he regained employment as he showed a more active participation. But thereafter, his earlier problems reemerged. He often could not understand the details of work and was scolded, so he felt depression, anxiety, restlessness, and suffered from headaches. Consequently, he asked for an increase in the dosage of atomoxetine but retired

due not to feel the effect of the medicine. From the first medical examination, 1 year later he asked for another treatment; CBT was introduced as per the book "Mastering Your Adult ADHD: A Cognitive-Behavioral Treatment Program: Workbook (Treatments That Work)" [15]. For his severe complications caused by getting up from the decline of working efficiency by being confused, he took 20-30 min of counseling and cognitive-behavioral treatment program and brought his ADHD feature to his awareness. CBT was conducted to be easy for ADHD patient to work focusing on the environment arrangement and list up to give the processing speed up. After one month of CBT training, he got a job in the disabilities' quota in the city office. He explained that he was ADHD to the coworker based on his knowledge. And he made expand space around his desk and space in the shelf to put the forms. Two months later, the amount of the atomoxetine was increased to 120 mg from 80 mg. The patient could now concentrate on work, and the processing speed, too, improved at 23 months from the first medical examination (Fig. 2). Though confusion at the workplace reduced, he still felt that he could not work like as well as his colleagues.

3. DISCUSSION

The results of the present study support the importance of diagnosis and treatment of adult ADHD, even if one has adapted to society to a certain degree. The patient changed his occupation six times during a nine-year period because of depression, anxiety, and confusion. After diagnosis and treatment for ADHD, he was able to continue work without experiencing the above-mentioned issues.

From the viewpoint of occupational health, the authors pointed out the problems:

The patient was not diagnosed with ADHD for 9 years prior to his visit to our hospital. As is often the case, his parents were aged and died subsequently, so we could not have access to the necessary information required to diagnose adult ADHD. Parents, also, do not remember or misunderstood the symptoms. First, in this case, he and his mother told that there were no problems with the time of infancy. But both were comparing the problem at the time of infancy with his elder brother with schizophrenia. The clinical psychologist asked the problem at the time of infancy specifically using DIVA [13] and so on, and we found out that he had the problem-related ADHD.

Improvement with the help of treatment was observed in the patient at the ASRS and WAIS-III test stages, but his condition was aggravated at first, as is evidenced by the results of the AQ-J test. He said that he could work, but according to his own methods and not as well as the others. The data of first AQ-J was resulted when he had not worked yet, second data was taken after he got the work. Going out to society and comparing with the co-worker might lower his value by estimate himself objectively. We explained to him about that thing, and supported that he had been estimating himself objectively.

worker of the ADHD feature got, he feels easier to work, for example by preparing the exclusive form shelf, and emptying space around him. He told that notice of his disorder to the co-worker was effective, but he said he would heist of notice it when he would change work in the future.

Previous research reports that adult ADHD patients often suffer from unemployment, financial difficulties, and an unsuccessful personal life [3]. It is known that medical treatment such as atomoxetine is effective to a certain extent [16], but there is also the issue of side effects such as adverse hepatic and cardiovascular events [17]. It is known that CBT is effective in adult ADHD [12], but it is difficult to do so by primary care. Experts are necessary for

It is of vital importance to inform one's co-workers about one's condition. In this case, he apprised them of the fact that he was afflicted with adult ADHD. By explanation to the co-

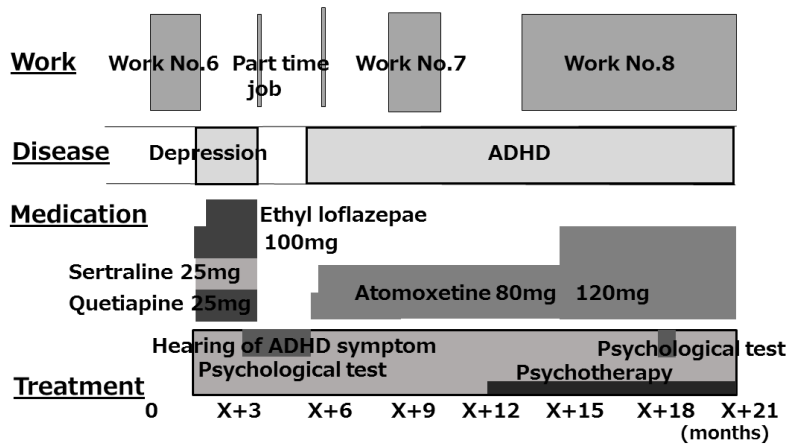


Fig. 1. Clinical course and treatment of the case
ADHD: Attention Deficit and Hyperactivity Disorder

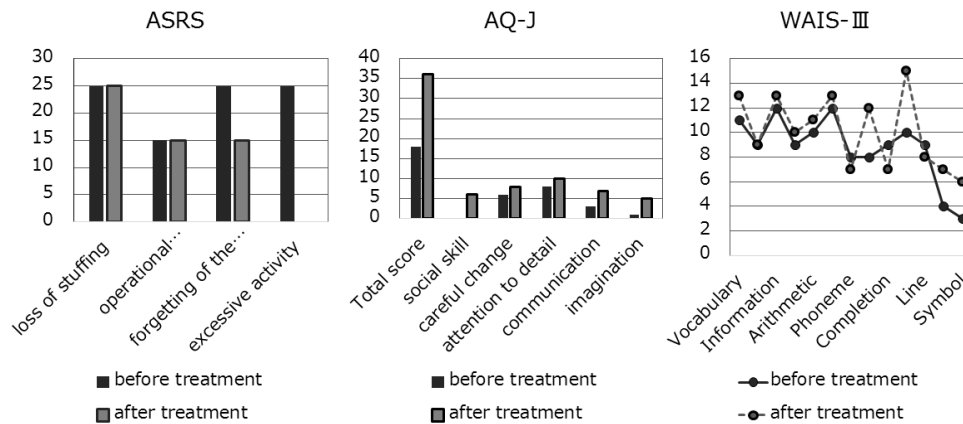


Fig. 2. Results of psychology test of the case
ASRS: Adult ADHD Self-Report Scale
AQ-J: Autism-Spectrum Quotient Japanese version
WAIS-III: Wechsler Adult Intelligent Scale-Third Edition

CBT, and special places such as telephone consultation may be necessary in some cases. CBT using books we made can be done by ordinary psychiatrists in the psychiatric outpatient clinic. It can be said that CBT is easy to incorporate into psychiatry medical treatment in Japan.

4. CONCLUSION

This study about treatment focusing on improvement in processing speed may improve adult ADHD adaptation to work. Although adult ADHD treatment is mainly medication in Japan, CBT using the textbook is thought to be useful for the treatment of ADHD.

CONSENT

In this case report, i got permission from him / her. Also, we make changes to the extent that contents are not changed so that individuals are not identified.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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