

Neuroplay method combined with home-based Ayres sensory integration for autism: A case report

Otizmde ev temelli Ayres duyuşal bütünleme müdahalesi ile birleştirlmiş nöroplay metodu: Bir vaka sunumu

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Abstract

Autism is a neurodevelopmental disease that occurs in early childhood. As the frequency of early detection of autism findings increases, intervention programs involving families become common. We herein present a boy who was diagnosed with autism at 19 months of age and followed up with Neuroplay Method integrated with home-based Ayres Sensory Integration intervention, which significantly improved his autism findings.

Keywords: Autism, Early intervention, Social interaction, Neuroplay method, Ayres sensory integration therapy

Öz

Otizm erken çocuklukta görülen nörogelişimsel bir bozukluktur. Otizm bulgularının erken dönemde saptanma sıklığı arttıkça, ailelerin dahil edildiği müdahale programları yaygın hale gelmektedir. Bu olgu sunumunda, 19 aylıkken otizm tanısı almış, ev temelli Ayres Duyusal Bütünleme müdahalesi ile birleştirilmiş Nöroplay Metodu ile izlendikten sonra otizm bulguları önemli ölçüde sağaltılan bir erkek çocuk sunulacaktır.

Anahtar kelimeler: Otizm, Erken müdahale, Sosyal etkileşim, Nöroplay yöntemi, Ayres duyuşal bütünleme terapisi

Introduction

Autism is a developmental disability characterized by social and communication impairments, restricted interests, and repetitive behaviors [1]. Symbolic play implies the social use of an object in accordance with its function and features and is an important indicator of social interaction during childhood. Examination of symbolic play in children reveals that they often show repetitive behaviors and lack diversity [2]. The play behavior of some parents who have children with autism involves similar repetitive play patterns like their children [3]. Similar parallelism exists between sensory problems of the parents and the child. The prevalence of sensory problems of people with autism reportedly ranges from 69% to 93% among children and adults [4].

The Neuroplay Method (Neuroplay) is an intensive parent-mediated early intervention approach for children with autism between 12-42 months of age. The method aims to teach strategies of social interaction to parents about their children. After initial intensive training, parents are encouraged to play with their child for at least 4 hours a day. The therapist also helps them improve the home environment and choose the right toys for the child. During weekly visits, the therapist monitors the progress. This therapeutic approach, also known as Ayres Sensory Integration (ASI), was developed by A. Jean Ayres, who defined sensory integration as the process by which people register, modulate, and discriminate sensations received through the sensory systems to produce purposeful, adaptive behaviors in response to the environment [5].

In this case report, we aim to present a male patient diagnosed with autism and discuss the effectiveness of Neuroplay and ASI combinations.

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Case presentation

A two-year old male was born by normal spontaneous childbirth after an uneventful pregnancy as the only child of parents with bachelor's degrees. His parents stated that he was very restless during infancy, and he had been exposed to the screen for at least four hours a day. His motor development was normal. Later he had tended to play alone, made limited eye contact, and displayed obsessive playing behavior. Also, he reportedly avoided pressing on surfaces such as grass and sand and had not yet consumed solid food. Examination revealed that eye contact was indeed limited, and he did not respond when his name was called. The patient was diagnosed with autism in accordance with the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria. His Childhood Autism Rating Scale (CARS) score was 36. His neurodevelopmental level was evaluated with the Denver II Development Screening Test. Accordingly, his social age was determined as 6-8 months, lingual age, 6-8 months, fine motor development age, 10-12 months and gross motor development age, 17-18 months. The patient had atypical responses to the tactile stimuli of the oral and general areas. The patient could not consume solid food. He was started on Neuroplay and Ayres Sensory Integration therapy for three months, receiving 12 sessions of Neuroplay therapy and Ayres Sensory Integration therapy each.

During the therapy sessions, the Neuroplay therapist did not aim for the patient to gain any developmental skills. Instead, the parents learned social play strategies, some of which include how to make an eye contact, interact and communicate, prevent inappropriate behaviors and obsessions, support child's symbolic play, choose the right toy, use the toys while playing and improve joint attention. Ayres Sensory Integration sessions focused primarily on alleviating tactile defensiveness in the oral region. Home-based sensory activities were taught in therapy sessions. Oral massage was described to the parents to improve oral awareness. The parents were expected to massage the patient twice per day. Additionally, the child was encouraged by parents for oral-motor play before meals with non-food items like biting hard on oral toys, blowing bubbles, etc.

After 3 months of home-based intervention, Denver II scores for the social area was 14-15 months, language area, 10-13 months, fine motor area, 21-23 months, and gross motor area was normal. His latest CARS score was 26. It was observed that the patient started to gain developmental milestones while playing with his parents. His repetitive behaviors decreased, while his symbolic play and attention span increased. Although he began to respond to his name, receptive language skills were below the normal level for his age. The case was re-evaluated after treatment and he gave typical responses in all sensory areas. He started to consume solid foods.

Discussion

Low-intensity parent-mediated early intervention approaches can yield immediate effects on children's social behavior and communication. These effects can also be transmitted through late childhood [6]. These methods support caregivers to establish eye contact and joint engagement, avoid directive play and create opportunities for shared attention and

social play [7]. However, social interaction with their children with autism could be difficult for their parents as they may also have social communication problems [3]. During Neuroplay therapy, parents send the practice videos to the therapist, which in turn leads to continuous supervision. Unlike low-intensity approaches, Neuroplay recommends intensive social interaction between the parents and the child at least 4 hours per day. This approach shows similarities with naturalistic behavioral developmental interventions like Applied Behavior Analysis. Neuroplay supports children with autism in their natural environment as a novel intensive therapy and it could prove to be a very beneficial approach, especially for families who have no access to high-quality therapy. Furthermore, the risk of autism in siblings is increased 20-25 times [6,8]. Therefore, Neuroplay can be also protective for high-risk siblings.

Atypical sensory reactivity is a core feature of autism and in some cases, sensory problems may hinder social interaction [4]. Sensory-oriented treatments are usually delivered by occupational therapists. However, Ayres Sensory Integration is a play-based approach and follows the child's lead, so it could be integrated into a parent-mediated intervention such as the Neuroplay method. In our case, home-based sensory activities improved tactile defensiveness and feeding problems.

Conclusion

Patients with autism and sensory issues can improve with home-based intervention. The efficiency of Neuroplay, when combined with sensory integration therapy, may increase for such cases. This approach will prove cost-saving for many families.

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