1. INTRODUCTION

In children, exposure to media such as television, videos, computers, and touch-screen devices is associated with delayed cognitive development and hyperactivity and attention disorders. Although it has been recommended that child be kept away from the media during the early developmental period, many modern parents use the media as a way to calm their children. Consequently, these children lack the opportunity to form selective attachments by reduced social engagement. These children's symptoms occasionally mimic autism spectrum disorder (ASD). However, few studies have examined the symptoms children develop with early media exposure. Here, we present a boy exposed to the media during his early development who was diagnosed with attachment disorder. He was unable to make eye contact and was hyperactive and had delayed language development, like children with ASD. His symptoms improved dramatically after he was prevented from using all media and encouraged to play in other ways. After this treatment, he would make eye contact, and talked about playing with their parents. Simply avoiding the media and playing with others can change the behavior of a child with ASD-like symptoms. It is important to understand the symptoms caused by attachment disorder and early media exposure.

Abstract: Many studies have reported many adverse effects of children's use of media. These effects include reduced cognitive development and hyperactivity and attention disorders. Although it has been recommended that child be kept away from the media during the early developmental period, many modern parents use the media as a way to calm their children. Consequently, these children lack the opportunity to form selective attachments by reduced social engagement. These children's symptoms occasionally mimic autism spectrum disorder (ASD). However, few studies have examined the symptoms children develop with early media exposure. Here, we present a boy exposed to the media during his early development who was diagnosed with attachment disorder. He was unable to make eye contact and was hyperactive and had delayed language development, like children with ASD. His symptoms improved dramatically after he was prevented from using all media and encouraged to play in other ways. After this treatment, he would make eye contact, and talked about playing with their parents. Simply avoiding the media and playing with others can change the behavior of a child with ASD-like symptoms. It is important to understand the symptoms caused by attachment disorder and early media exposure.

Keywords: attachment disorder, media, television, autism spectrum disorder

2. CASE REPORT

A boy of non-consanguineous Japanese parents was born at term after a normal pregnancy. He is an only child. His father is an office worker and his mother is a housewife. No one in his family has ASD, epilepsies, or any other neurological disorder. His language and social development proceeded normally until 18 months of age. When he was 5 years old, his parents noted that he sometimes did not react. An electroencephalography (EEG) recorded at 5 years of age showed diffuse irregular polyspikes and spikes and waves predominantly in frontal area during sleep (Figure 1A). Brain magnetic resonance imaging (MRI) results were normal at 5 years of age (Figure 1B). He was diagnosed with frontal lobe epilepsy based on EEG abnormalities. His seizure symptoms disappeared 3 months after starting treatment with valproic acid. In addition to epilepsy, he also had many neurobehavioral problems. He was constantly running around, imitating the action hero Kamen Rider, romping, and shouting. His physical condition was essentially normal. He would not make eye contact. He talked fluently about media items only. He would not answer any questions. His parents said that he had spent most of his time watching videos of action heroes since he was 6 months old. He did not play in any other way. We administered the Childhood Autism Rating Scale (CARS) (8), which is a 15-item behavior rating scale and helps to identify children with ASD. Each item covers a particular characteristic and behavior of children with autism. Scores of less than 29, between 30 and 36, and above 36 on the CARS are considered indicative of normal, mild to moderate autism, and severe autism, respectively. His CARS score was 37 at his first visit.

Received for publication January 29, 2018; accepted February 19, 2018.
Address correspondence and reprint requests to Yurika NUMATA-UEMATSU, M.D., Ph.D. Department of Pediatrics, Tohoku University School of Medicine, 1-1 Seiryo-machi, Aoba-ku, Sendai 980-8574, Japan and Fax: +81-22-717-7290.
score of CARS as 37 indicates that he is a child with feature of severe
autism. When we asked him to draw his mother’s face, he drew
something that did not resemble a face (Figure 2A). Although he
seemed to be exhibiting ASD-like symptoms, he liked to play with
his evaluator rather than alone and he would seek the company of
someone to play with him; he did not resist physical contact or
exhibit aberrant reactivity to sensory stimuli. We believed that his
condition was different from a disabling condition such as ASD
with its associated social and qualitative communicative impair-
ments. We believed that his condition developed in the absence of
adequate caregiving. Based on these findings, we diagnosed him
with attachment disorder, which proposed by Zeanah CH (7). We
also believed that his symptoms had been strongly affected by the
media. We informed his parents not to let him watch any more
television and to physically play (e.g., tickle each other or catch and
run). He practically liked play with clay, tickling each other, and
chase after his father in the park. After 2 weeks with no exposure to
media, he began making eye contact, talking about playing with his
parents. He could listen to others and sit quietly. His CARS score
was 26.5 two months after he had stopped watching media and
started physical play. After 2 months, he could draw his mother’s
face (Figure 2B).

3. DISCUSSION

Children with early media exposure can often have ASD-like
symptoms and be treated dramatically by preventing from using all
media and encouraged to play in other ways. Many studies have
summarized the risks of media exposure in children(1-4). Early
media exposure can also affect parent–child interactions and at-
tachment. Conversely, if a child is allowed physical play with his/
hers parents and forms parent–child attachment, the child does not
need to watch television. Children with no opportunity to develop
an attachment relationship, as if like our patient, are at increased
risk of a variety of social and behavioral problems, including an
autistic-like pattern (9). Our patient's CARS score, which is a useful
guide to the severity of ASD, improved after he was forbidden to
watch videos. Because DSM criteria were based on literature per-
taining to extreme groups of children (e.g., those who have social
neglect and institutionalized), we considered his condition attach-
ment disorder, which proposed by Zeanah CH (7). With no expo-
sure to the media and the formation of parent–child attachment,
his impaired social communication and interactions and limited,
repetitive behavior improved. Some studies have reported a rela-
tionship between children’s drawings of their family and their at-
tachment (10). After avoiding the media, his drawings showed
much richer morphological expression. His language develop-
ment was delayed, as in toddlers with ASD, with a marked delay in
both receptive and expressive language. Regarding developmental
problems caused by early media exposure, a correct diagnosis and
appropriate response can change the patient’s symptoms drastic-
ally in a relatively short time. It is important to understand the
symptoms caused by attachment disorder and early media expo-
sure, and it is necessary to identify how to treat these children and
guide their parents.

Figure 1. EEG and MRI findings
EEG findings (A) and MRI findings (B) at 5 ages

Figure 2. The picture of the mother’s face that the patients drew
When we asked him to draw his mother’s face, the picture that he drew at
his first visit (A), and after two months with no exposure to media (B)
CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCE