

Complementary and Alternative Medicine in the School-Age Child With Autism

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ABSTRACT

This case study examines some common complementary and alternative treatments used in the management of behavioral and gastrointestinal symptoms associated with autism including food selectivity, abdominal pain, nausea, gastroesophageal reflux, constipation, and diarrhea. The current literature on the safety and efficacy of these treatments for pediatric patients is reviewed. This study examines therapies including gluten-free and casein-free diet, probiotics, vitamin B12, omega-3 fatty acid supplementation, chelation therapy, acupuncture, and chiropractic manipulations used in treating these core symptoms of autism. *J Pediatr Health Care.* (2016) ■, ■-■.

KEY WORDS

ASD, autism, constipation, complementary and alternative medicine (CAM), safety, supplements

Autism spectrum disorders (ASDs) are some of the most common developmental disorders, affecting 1 in 68 children in the United States and significantly

affecting the quality of life children and families because of the core developmental disability and associated medical and behavioral symptoms (Centers for Disease Control and Prevention, 2012; Christensen et al., 2016). Children with ASDs have characteristic deficits in communication, socialization, and behavior, with a wide range in severity of symptoms. Because of the heterogeneity of symptoms, which change over time with the development of the child, complementary and alternative medicine (CAM) therapies are increasingly being used to replace or supplement traditional medical care (Levy & Hyman, 2015). Studies have reported that use of CAM in the pediatric population for treating chronic conditions is estimated to be from 2% to more than 70% (Adams et al., 2013; Kemper, Vohra, & Walls, 2008). The most commonly used CAM treatments fall under the three broad categories: natural products, special diets, and mind and body therapies (Akins, Krakowiak, Angkustsiri, Hertz-Picciotto, & Hansen, 2014). The safety and efficacy of using CAM therapies in a patient with ASD, including casein-free and gluten free diets, probiotics, certain vitamins, chelation therapy, acupuncture, and chiropractic manipulations are described.

CASE PRESENTATION

Chief Complaint and History of Present Illness

A 5-year-old boy with autism presented to a pediatric gastroenterology clinic at a large nonprofit teaching hospital for constipation follow-up. At his previous visit 4 months ago, he had been passing hard, pellet-like stools every 3 to 4 days and complained of pain while stooling. His mother stated that he processes pain and sensations differently and has always complained of

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Conflicts of interest: None to report.

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pain while stooling after being toilet trained about 6 months ago. At that visit, he was prescribed 17 g of polyethylene glycol powder dissolved in 120 to 240 ml of liquid daily (titrated up or down depending on stool consistency) and was advised to consume pears and prunes in addition to other fruits and vegetables along with at least 8 cups of water and to have a regular routine of sitting on the toilet every day.

At this visit, the boy's mother stated that his constipation had resolved after these interventions and that he was having one bowel movement daily without pain. She planned to enroll him in school and had been reading about diet and supplements that might be helpful in regulating his gastrointestinal (GI) tract and allow him to reduce episodes of food selectivity, abdominal pain, constipation, diarrhea, or nausea. She had tried a trial of sugar-free, dairy-free, and gluten-free diets and noticed drastic improvement in cognition and processing. She stated that his attention had improved and that he was more social and communicative with family members than usual while on this diet. She had recently looked up articles online about the use of omega-3 fatty acids, vitamin B12 and probiotic supplements that were claimed to help regulate the GI tract, reduce inflammation and fungal growth, and improve cognitive function. She requests a medical opinion on the risks and benefits of these treatments and other biophysical therapies like chelation, acupuncture, and chiropractic manipulations to help alleviate the core neurodevelopmental deficits associated with autism.

Past Medical History

The child was diagnosed with autism at age 3 years and constipation at age 4 years. He had no other past medical or surgical history. His birth and neonatal history were unremarkable, with no maternal drug use in utero. His immunizations were up to date, and he had no known allergies.

Family History

Half-siblings from his father's side (both boys, ages 6 and 10 years) have attention deficit hyperactivity disorder. There was no other significant family history, including no family members with history of ASDs or other neurodevelopmental disorders.

Personal/Social/Developmental History

The boy had been born at term. Developmentally, he started crawling at age 12 months, walked at age 16 months, and had a limited vocabulary (20 words) at age 30 months. Around the age of 36 months, he exhibited sensory intolerances of touch, cold temperature, and loud sounds. He also exhibited self-soothing behaviors when excited or anxious like flapping his arms, jumping on the bed, banging his head against a wall or table, and rocking his body while standing. Toilet-training was prolonged, and frequently he did

not want to use the toilet at daycare or home. He was understood only 50% of the time at age 4 years and almost never pointed at objects or people or verbalized his demands. At age 3 years, he was evaluated by a developmental-behavioral pediatrician and clinical psychologist who performed testing and concluded that he met the criteria for a diagnosis of ASD according to the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association, 2013).

At the time of the visit, he had a limited vocabulary and was understood by his family about 75% of the time. He had poor eye-tracking and socialization skills, occasional outbursts of anger and aggression, and mild intellectual disability (testing demonstrated an IQ of 85). He also had sensory deficits like temperature and touch intolerances and lower threshold for pain and loud noises, and he exhibited distraction and irritability when touched or placed in unfamiliar situations. He had received social reciprocity training at a specialized preschool.

He lived with his parents in a single-family house. His father was employed as a dentist, and his mother was a writer. He had two half-siblings from his father's previous marriage; they lived with their mother and visited during family events.

Pertinent Physical Examination Findings

In the examination room, the boy's back was to the clinician, and he refused to make eye contact. He was a healthy-appearing child who was playing a game on his mother's tablet device. His growth curves were within normal limits for his age, at the 60th percentile for his height and 55th for weight.

His physical examination results were grossly normal. His abdomen was nontender and nondistended, with no stool palpated. He exhibited discomfort and irritability when touched and examined. His mother stated that this was normal behavior for him at clinic visits.

Diagnostic Studies Performed and Interpretation

Because of the strong parental preference toward starting omega-3 fatty acid and vitamin B12 supplements, a comprehensive metabolic panel to evaluate liver and kidney function was obtained. The results of the comprehensive metabolic panel were within normal limits. At the boy's prior visit, a celiac panel (consisting of tissue transglutaminase immunoglobulin A and total immunoglobulin A levels) was ordered, the results of which were within the reference range.

Assessment

At the visit, the boy was assessed as having functional constipation that was well controlled with the 17-g dose of polyethylene glycol, administered as needed.

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