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Abstract

Autism, or autism spectrum disorder ASD refers to a broad range of conditions characterized by challenges with social skills, repetitive behaviors, speech and nonverbal communication. According to the Centers for Disease Control, autism affects an estimated 1 in 59 children in the United States today: 1 in 37 boys, 1 in 151 girls. Types of autism in children are autistic disorder ASD, Asperger's Syndrome AS, Childhood Disintegrative Disorder CDD, Rett's Syndrome RTT, and Pervasive Developmental Disorder Not Otherwise Specified PDD-NOS. Most common dental problems in autistic pediatric patients are: Gingival overgrowth 4.8%, Early and late tooth decay 9.5%, Severe, early periodontal gum disease 8.5%, The habit of constantly grinding their teeth, which is also known as bruxism, Tooth anomalies that are related to the size, shape, and the number of teeth present 15%, Accelerated, inconsistent, and/or delayed eruption of one or more teeth 23%. Children with autism in Yemen have high prevalence of oral soft tissue lesions, caries, and gingivitis. Therefore, proper oral health education programs should be initiated and directed toward this special section of the society. Difficulties facing pediatric dentist dealing with autistic patients is considered to children, have extreme sensory and oral motor integration and the dentist can be a very frightful experience, like dental management for autistic patients, clear communication in understandable words, using simple words to explain the next move, involving the patient in treatment procedure through behavior guidance, rewarding the child after each successful intervention.

Abbreviations: CDD - Childhood Disintegrative Disorder, PDD-NOS - Pervasive Developmental Disorder Not Otherwise Specified, AS - Asperger's Syndrome, RTT - Rett's Syndrome, ASD - autism spectrum disorder.

Keywords: Autism, Autism in children, Dentist and autistic child, Autism types, management of autism in dental clinic.

Introduction

Autism, or autism spectrum disorder ASD, related to a broad range of conditions characterized by challenges with social skills, repetitive behaviors, speech and nonverbal communication. According to the Centers for Disease Control, autism affects an estimated 1 in 59 children in the United States today. [1]

There is not one type of autism but there are many types of this disorder, mostly meted forms are:

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რეზიუმე

აუტიზმი ან აუტიზმის სპექტრის დარღვევა ASD მოიცავს ფართო სპექტრის მდგომარეობას, რომლებიც ხასიათდება შეზღუდული სოციალური უნარებით, განმეორებითი ქცევებით, სიტყვიერი თუ არავერბალური კომუნიკაციის დაქვეითებით. დაავადებათა კონტროლის ცენტრების მონაცემებით, აუტიზმი აჟამად ყოველ 59-ე ბავშვში ვლინდება, აქედან აშშ-ს მონაცემებით: 1:37 ბიჭებში და 1:151 გოგონებში. ბავშვთა აუტიზმის ტიპები: აუტიზმის სპექტრის დარღვევა ASD, ასპერგერის სინდრომი AS ბავშვთა დიზინტეგრაციული დარღვევა CDD, რეტის სინდრომი RTT და განვითარების გავრცელებული დარღვევა PDD-NOS. აუტიზტურ პედიატრიულ პაციენტებში ყველაზე გავრცელებული სტომატოლოგიური პრობლემებია: რღმლის ჰიპერტროფია 4.8%, ადრეული და გვიან კბილების დაზიანება 9.5%, მძიმე ფორმის პაროდონტული დარღვევები 8.5%, კბილების „კრაჭუნის“ მუდმივი ჩვევა, რომელიც ასევე ცნობილია როგორც ბრუქსიზმი 15%, აქსელერაციული, შეუსაბამო, ან/და დაგვიანებული კბილების ამოჭრის დარღვევები 23%. იემენში აუტიზმით დაავადებულ ბავშვებს აქვთ პირის ღრუს ლორწოვანი გარსის დაზიანებები, კარიესი და გინგივიტის მაღალი პრევალენტობა. აქედან გამომდინარე, უნდა მოხდეს შესაბამისი პირის ღრუს ჯანმრთელობის გასაუმჯობესებელი საგანმანათლებლო პროგრამების ინიცირება, რომელიც შემუშავებული იქნება საზოგადოების განსაკუთრებული ნაწილისათვის. აუტიზმის მქონე პაციენტებთან პედიატრიულ სტომატოლოგიის მუშაობის სირთულეები დაკავშირებულია ბავშვის უკიდურესი სენსორული და მოტორული ინტეგრაციის პრობლემით, რასაც მივყავართ ისეთ პრობლემებთან, როგორცაა სტომატოლოგიური მენეჯმენტი აუტიზმის მქონე პაციენტებისთვის, გასაგები სიტყვებით კომუნიკაცია, მარტივი სიტყვების გამოყენებით აიხსნას მომდევნო მანიპულაციები, პაციენტის ჩართვა მკურნალობის პროცედურაში, ბავშვის დაჯილდოება ყოველი წარმატებული ჩარევის შემდეგ.

Asperger syndrome AS, also known as Asperger's, is a developmental disorder which is characterised by significant difficulties in social interaction and nonverbal communication, along with restricted and repetitive patterns of behavior and interests. [2]. As a milder autism spectrum disorder (ASD), it differs from other ASDs by relatively normal verbal communication skills and intelligence. [3] Asperger syndrome is distinguished by a pattern of symptoms rather than a single symptom. It is characterized by qualitative impairment in social interaction, by stereotyped and restricted patterns of behavior, activities and interests, and by no clinically significant delay in cognitive development or general delay in language. [4].

Individuals with AS experience difficulties in basic elements of social interaction, which may include a failure to develop friendships or to seek shared enjoyments or achievements with others, a lack of social or emotional reciprocity and impaired nonverbal behaviors in areas such as eye contact, facial expression, posture, and gesture. [5]

Childhood disintegrative disorder CDD, also known as Heller's syndrome and disintegrative psychosis, is a rare condition characterized by late onset of developmental delays—or severe and sudden reversals—in language, social function, and motor skills. Researchers have not been successful in finding a cause for the disorder. CDD has some similarity to autism, and is sometimes considered a low-functioning form of it. [6, 7].

In the book, *thinking in Pictures*, Temple Grandin argues that compared to Asperger syndrome, CDD is characterized with more severe sensory processing disorder but less severe cognitive problems. The authors also argue, that compared to most individuals suffering from autism, persons with CDD have more severe speech pathology and they usually do not respond well to stimulants.

Rett syndrome (RTT) is a genetic brain disorder due to a genetic mutation of the MECP2 gene. [8] This gene occurs on the X chromosome [9], that typically becomes apparent after 6 to 18 months of age in females Symptoms include problems with language, coordination, and repetitive movements. Often there is slower growth, problems walking, and a smaller head size. Complications can include seizures, scoliosis, and sleeping problems [8].

Dental behavior management: Children with ASD exhibit more dental behavior Management problems (uncooperative behaviors) compared to typically developing children, with research indicating that approximately 50-72% of children with ASD exhibit uncooperative behavior during dental treatment. Uncooperative and aggressive behavior during dental treatment have the potential to impede, change, access to care for children with ASD [10].

Gingivo-periodontal pathology is more prevalent in patients with ASD compared to healthy control groups. These differences are explained by the poorer levels of oral hygiene seen in ASD patients. They could also be caused by lack of the necessary manual dexterity of autistic children, which may have resulted in inadequate tooth brushing. Furthermore, poor dental awareness, a lack of dental education and deficiency in receiving oral hygiene instructions from dental staff seem to be contributing factors for periodontal diseases. Another possible explanation for the presence of

generalized gingivitis might be the side effects of medications which were used to control the manifestations of autism, such as psychoactive drugs or anticonvulsants, with the most common drug classes being antidepressants, stimulants, and antipsychotics [11].

Harmful oral habits are common, which consist of bruxism, tongue thrusting, picking at the gingiva and lip biting. Bruxism or forceful grinding of teeth is one of the sleep problems which are commonly observed in children with autism. Dentist can recommend a mouth guard to stop this self-injurious behaviour. The rate of dental injuries is higher among autistic children. The most common dental injury was enamel fracture and the most frequently injured teeth were the permanent maxillary central incisors Tooth eruption may be delayed due to phenytoin induced gingival hyperplasia (phenytoin is commonly prescribed for people with autism) [12, 13, 14].

Several basic behaviour guidance methods have been recommended to accommodate dental therapy of autistic patients, including the presence of parents, the use of tell-show-do technique, short, clear commands, and differential verbal reinforcement. Autistic children may respond better to certain management techniques, such as positive reinforcement.

Appointment Structure: Duration of the dental visit, and sensory sensitization should be kept to a minimum. Because of the limited attention span of ASD patients short, well-organized appointments should be planned and the waiting time should not exceed 10-15 minutes, to avoid upsets [15].

Dental Environment: Environmental factors in determining the comfort level of children with ASD during stress full medical events are very important. Anyone participating in the procedure should minimize movements, because an autistic child can be easily distracted [16]. Visual Instruction Stimulation of aversive behavior may contribute in establishing favorable conditions for the autistic child to cooperate at the dental practice. A study that showed a structured method and technique of tooth brushing was made by Bäckman and Pilebro. Pictures were placed in the bathroom or wherever tooth brushing was performed. 14 children with autism, aged between 5 and 13 years, were involved. After 12 months, the amount of visible plaque was reduced. After 18 months, most of the parents found maintaining good oral hygiene easier than they had found it before the study and concluded that visual pedagogy was a useful tool for helping people with autism in improving their oral hygiene. A gentle introduction to tooth brushing using alternatives, such as a washcloth, toothbrushes of different texture and design or an electric toothbrush may enhance the acceptance of toothbrush by the child with ASD. As a final point, child's self-protectiveness may be eliminated by intensive behavior programming, instructed by parents familiar with reinforcement-based teaching [17, 18, 19].

Pharmacological Behavior Management Techniques:

The presence of adverse effects on the oral cavity from medicines have also been described, particularly hyposalivation (paroxetine, fluoxetine, imipramine), oral ulcers (carbamazepine), delayed scarring (Valproic acid) or gingival enlargement (phenytoin). The drugs were administered in different dosages and regimens, as a sole agent or in various combinations. In some patients, several different regimens and combinations were attempted in order to be successful. A lengthier administration and higher concentrations of nitrous oxide than usual were required to achieve the desired level of Sedation in patients with ASD. Giving treatment in the operating room by using general anesthesia was considered only if all other approaches had failed [20].

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