

BEHAVIORAL MANAGEMENT IN DENTAL TREATMENT FOR CHILDHOOD AUTISM: (CASE STUDY)

Muhammad Chair Effendi*, Sri Susilawati**, Mirna Febriani***, Agus Susanto****, Lisda Damayanti*****,
Anne Agustina S**, Inne S. Sasmita*****

*Department of Pediatric Dentistry, Faculty of Dentistry, Universitas Brawijaya, MALANG

**Department of Dentistry Communication Sciences, Faculty of Dentistry, Padjadjaran University, Bandung

***Department of Dental Material, Faculty of Dentistry, University Prof.Dr. Moestopo (B), Jakarta

****Department of Periodontics, Faculty of Dentistry, Padjadjaran University, Bandung

*****Department of Prosthodontics, Faculty of Dentistry, Padjadjaran University, Bandung

*****Department of Pedodontics Dentistry, Faculty of Dentistry, Padjadjaran University, Bandung

Korespondensi: Inne S. Sasmita, innesuhernasasmita@yahoo.co.id

ABSTRACT

Background: Autism Spectrum Disorder (ASD) or autism is a disorder that occurs during brain development characterized by deficiencies in social behavior and nonverbal interactions such as lack of eye contact, facial expressions, and body movements before a child is three years old. Autism Spectrum Disorder (ASD) is not a single disorder and is generally considered a multi-factorial disorder caused by the interaction of genetic and non-genetic factors. Lack of social behavior includes avoiding eye contact, difficulty controlling emotions or understanding the emotions of others, and limiting the range of activities and interests. **Case report:** A patient, female, 7 years and 4 months complained that the maxillary front teeth shake and want to be removed. Patients are suspected of having symptoms of autism since the age of 2 years and have started screening at that age until finally diagnosed with autism. Autism in patients, in this case, is suspected of autism from genetic factors. **Conclusion:** People with autism require special examination and treatment regarding the health of their teeth and mouth. These actions require cooperation between dentists and pediatricians or psychologists or other related disciplines so that the desired end results can be achieved as well as possible.

Keywords: Autism Spectrum Disorder; children with special needs, genetic and non genetic factors

ABSTRAK

Latar belakang: Autism Spectrum Disorder (ASD) atau autisme adalah kelainan yang terjadi pada saat perkembangan otak yang ditandai dengan kekurangan dalam perilaku sosial dan interaksi nonverbal seperti kurangnya kontak mata, ekspresi wajah dan gerakan tubuh sebelum anak berusia tiga tahun. Autism Spectrum Disorder (ASD) bukanlah kelainan tunggal, dan secara umum dianggap sebagai kelainan multi faktorial yang disebabkan oleh interaksi faktor genetik dan non-genetik. Kurangnya dalam perilaku sosial termasuk menghindari kontak mata, sulit mengontrol emosi atau memahami emosi orang lain, dan membatasi jangkauan aktivitas dan minat. **Laporan kasus:** Seorang pasien, perempuan, 7 tahun 4 bulan mengeluh gigi depan rahang atas goyang dan ingin dicabut. Pasien diduga memiliki gejala autisme sejak usia 2 tahun, dan sudah mulai melakukan screening pada usia tersebut hingga akhirnya terdiagnosa autisme. Autisme pada pasien dalam kasus ini diduga autisme dari factor genetik. **Kesimpulan:** Penderita autisme memerlukan pemeriksaan dan perawatan khusus mengenai kesehatan gigi dan mulutnya. Tindakan tersebut memerlukan kerjasama antara dokter gigi dengan dokter anak atau psikolog atau disiplin ilmu lain yang terkait sangat diperlukan agar hasil akhir yang diinginkan dapat dicapai dengan sebaik-baiknya.

Kata Kunci: Autism Spectrum Disorder, anak berkebutuhan khusus, faktor genetik dan non genetik

INTRODUCTION

Autism Spectrum Disorder (ASD) or autism is a disorder that occurs during brain development characterized by deficiencies in social behavior

and nonverbal interactions such as lack of eye contact, facial expressions, and body movements before a child is three years old. ASD is not a single disorder and is generally considered a multi-factorial disorder

caused by the interaction of genetic and non-genetic factors.^{1,2} Child with ASD do not follow certain child development patterns. In some children, symptoms can be seen from birth. In most cases, communication problems and the ability to socialize become more visible late with the development of the child when compared to other children his age.³

The prevalence of Autism Spectrum Disorder (ASD) has increased significantly based on epidemiological studies for the last 50 years. The World Health Organization (WHO) 2019, estimates that one in 160 children in the world experiences ASD.⁴ ASD has a fairly high prevalence worldwide, regardless of borders, countries, social status or ethnicity. Prevalence is predicted to be 1–2 per 1,000 for autism and 6 per 1,000 for ASD, with four times as many males as females.⁵ Posserud et al., Wong, and Patricia et al. in Patil and Tamgond (2016) calculated the estimated prevalence of children with ASD nationally as follows: Australia: 6.25 out of 1000, Canada: 1 in 154, China: 1.1 in 1000, Denmark: 9 out of 1000, Finland: 1 in 833, Iceland : 1 in 769, India: 1 in 250, Japan: 3 in 1000, Mexico: 2 to 6 per 1000, Philippines: 500,000 total children, Sweden: 1 in 188, USA: 1 in 110. Looking at the numbers, it is hoped that dentists can have comprehensive knowledge of children with ASD.⁵

The oral health condition of children with Autism Spectrum Disorder (ASD) can be influenced by age, living conditions and severity of the disorder.⁶ Children with ASD have major limitations in performing oral hygiene due to the potential for sensory, intellectual, and motor disabilities.⁶ Approximately 8-12% of Autism Spectrum Disorder (ASD) has not been fulfilled the health needs of his teeth and mouth compared to children his age who do not have special needs. The things that become a barrier for patients to get treatment include the behavior of less cooperative patients, cost, and do not have insurance.⁷ The low level of cooperative Autism Spectrum Disorder (ASD) accompanied by the lack of dentist training in dealing with such behavior causes dentists to be reluctant in treating children with Autism Spectrum Disorder (ASD).⁸

Several things can be done to guide children with autism with behavioral guidance, including communicative behavior management, visual pedagogy, sensory techniques and applied behavior analysis. The management approach is aimed to providing behavioral guidance in order to increase positive and trusting relationships between dentists and reduce anxiety in pediatric patients.

CASE HISTORY

A female patient, with autism, aged 7 years and 4 months, came to the dentist with a complaint that her maxillary front teeth were loose and wanted to be extracted. Based on the anamnesis, it is known

that previously the patient used to come to a general dentist, but had experienced trauma during the extraction procedure at the previous visit.

At the first visit, no direct clinical examination could be carried out, until the 2nd hour of the visit the patient was willing to open his mouth. But still refuses to be examined using a dentist's instrument/instrument. Arriving at the end of the visit, the patient managed to open his mouth and his mouth was photographed using a cellphone. Then the operator and patient take a photo together to help the patient remember the operator, as well as the tools to be used. In addition to being photographed, there are several tools that are also provided/supplied to patients, such as a mouth mirror, tweezers, and an excavator to get used to holding and remembering these tools at home until the next visit.



Figure 1. The patient is willing to show his mouth

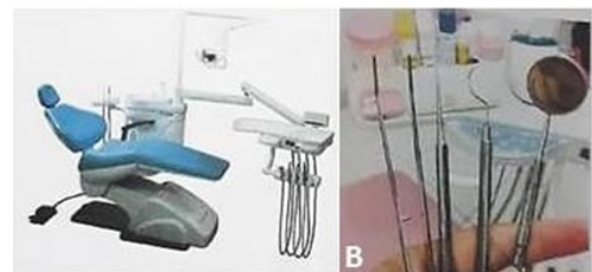


Figure 2. The dental chair and equipment used are given to the patient's parents



Figure 3. Photograph of a Dental Examination with a Model For Example

In the second week, the patient still remembers the operator and the tools that have been used before. Then, the operator introduced a new device, namely the cheek retractor and the patient received the device well. At this second visit, the patient's oral cavity can be photographed with the help of a cheek retractor.



Figure 4. The patient is ready to use the Cheek Retractor

During the third visit, the patient was introduced to topical anesthetic gel, betadine, and tampons which will be used during extraction. At this visit, the extraction procedure has not been successful. Until the fourth visit, the patient was successfully extracted in tooth 62 with a diagnosis of decubitus ulcer under anesthesia using the topical anesthetic gel. At the time of extraction, the patient's body was fixed by being held by the assistant operator and with the help of his mother.

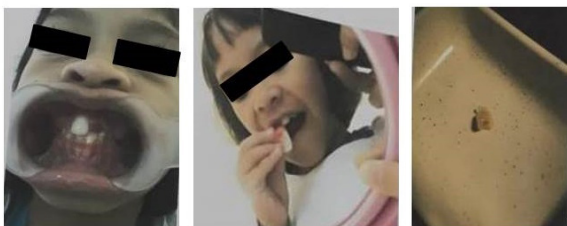


Figure 5. First Extraction on tooth 62

The next meeting took place 1 month after extraction. During this visit, the treatment plan that will be carried out is the extraction of radix 72 with mobility grade II and the extraction was carried out successfully. In this procedure, the patient is only held by his mother.

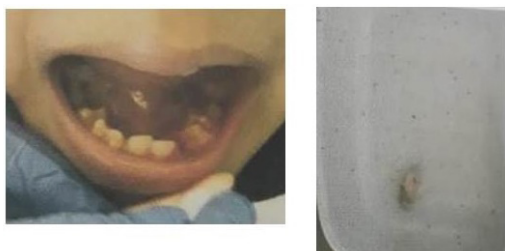


Figure 6. Second extraction on tooth 72



Figure 7. The patient being held by his mother during the procedure

The sixth visit took place 1 month after the second extraction. During this visit, the patient was reminded again about the tools commonly used during treatment at the dentist, as well as being introduced to a new tool, namely a drill. The drill is held and the sound is heard, for a while until the patient finally wants to try to feel the drill touching his teeth. At the end of the visit the patient had not successfully prepared his teeth. After that, the patient was also given a photo showing himself daring to drill his teeth, as well as a photo of the operator's hand holding the handpiece with the drill attached to make it easier to remember the procedure.



Figure 8. Checking using a drill for the first time

Until now, patient visits are still continuing with a frequency of once a week to practice getting used to the drill and other necessary maintenance actions.

DISCUSSION

Autism in patients is caused by genetic factors because two of her siblings also have developmental disorders namely synchronized gifted and expressive language disorders. While both parents have superiority with IQ above average. Allegations first appeared when the patient was 2 years old because his behavior was similar to his brother's and there was a delay in speaking.

Autism Spectrum Disorder (ASD) usually appears at the age of < 3 years. The development of ASD children sometimes looks normal until the age of 18-24 months and after that they do not show new skills or even lose the skills they already have. Each ASD child has different symptoms, but there are characteristics that are commonly found, namely communication disorders, response disorders, motor disorders.⁹⁻¹¹

Behavioral Behavior Approach

The unique behavior of ASD children can affect oral health conditions. Many studies have said that the

oral hygiene status of ASD children is low.¹²⁻¹⁴ This condition is influenced by the difficulty to carry out the habit of maintaining oral health such as routine tooth brushing. ASD children have motor disturbances that need help to brush their teeth in the right way.¹⁵ DeMattei, R et al (2007) in his study said that the high incidence of defensive oral causes higher plaque accumulation in children with ASD.¹²

Plaque accumulation can cause gingival infections. The incidence of gingivitis in children with ASD was reported as 53.3% - 64.7%.^{12,13,16} Apart from plaque accumulation, hormonal conditions were also thought to influence gingivitis.¹³ Some children with ASD also experienced a history of seizures, thus consuming anticonvulsant drugs. Anticonvulsant drugs have the side effect of gingival enlargement and if the condition coincides with plaque accumulation, gingivitis will occur.¹⁵ External factors such as parents or caregivers who are not skilled in providing oral care to ASD children can also cause constant plaque accumulation over time.¹³

The preventive measures that can be done are painstaking training in children with autism, how to brush teeth properly, of course by involving parents or caregivers. In the condition of children who do not allow to brush their teeth, the help of parents, caregivers, or school teachers is needed. This is the triangle of cooperation that is needed, is between parents - children with autism - dentists who care for him.¹⁷

Usually autistic children are afraid to see their doctor, a common technique used in both autistic and normal patients, including: tell-show-do, positive and negative reinforcement. Verbal communication should be done in clear, short, and simple sentences.¹⁸⁻²¹

Dental Brush Program In Children Autism^{17, 22-23}

A good brushing program is important for an oral health program. In the treatment plan for patients, it must also involve parents/family or caregivers who daily help patients carry out their activities according to their abilities and limitations. The task of the dental hygienist is to provide counseling and education on oral health to parents and caregivers. To begin with, the child must be able to cooperate to some extent, which requires some degree of motor coordination. The choice of location is important, where the environment must be neutral (no negative associations with the child) and relatively free of distractions. You need a toothbrush with the right size and color that the child likes. Rewards are effective, such as nuts, potato chips, or bread, but are only used in acute interventions to shape behavior. The start of the practice session is often short to avoid frustration for the child. Children should be given time to get to know their toothbrush and examine it. The same person should complete the entire program, if possible. He can start by holding the child's head in his lap while gently holding the child

with one hand. The free hand is placed on the child's head, which holds the toothbrush. Position the child by placing the toothbrush in his mouth which can then be easily followed by first on the front teeth. All teeth are brushed regularly, the sulcular method is too difficult for most children. Food reinforcers should be reduced but not removed too quickly. When all surfaces have been brushed, the child should be encouraged to do so himself. Self-brushing should be reinforced and always rewarded. Interventions with physical encouragement should be used only when necessary. Once this behavior persists, supervision-free sessions should be reinforced for 1 week, depending on the individual child. Disclosing tablets can be added and the child is encouraged to brush off the red marks.

In patients with autism, before providing counseling to parents or caregivers, first check their OHI and measure the extent of their knowledge of dental and oral health so that they can work together in maintaining the dental health of their children/foster children. Give instructions on how to maintain dental health both verbally and in writing so that parents and caregivers always remember. Also discuss whether the patient can be given other treatments such as topical applications, fissure sealants or even fillings. And set the right time for maintenance, control period.

CONCLUSION

People with autism require special examination and treatment regarding the health of their teeth and mouth. These actions require cooperation between dentists and pediatricians or psychologists or other related disciplines so that the desired end results can be achieved as well as possible. It needs a holistic and comprehensive treatment, as well as an explanation to parents about a good diet and how to maintain a child's dental and oral hygiene properly at home as an important preventive measure.

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DECLARATION OF PATIENT CONSENT

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient (s) has/have given his / her / their consent for his / her / their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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