



**PEDODONTIC PERESPECTIVE IN THE MANAGEMENT OF AN AUTISTIC CHILD: A  
CASE REPORT WITH LITERATURE REVIEW**

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**ABSTRACT**

Autism is a lifelong, severe, organic disorder characterised by abnormalities in the brain, especially the cerebellum and limbic system. Children with an autistic disorder may need more dental care and may also be more difficult to treat than healthy children. Providing dental treatment for children with autism spectrum disorder (ASD) represents a challenge for dentists. In the dental care of such children, the treatment plans implemented are usually determined by several factors, including: the type of autism spectrum disorder, the degree of patient cooperation, dentist/patient communication, the required treatment, self-care skills and parental/dentist support. The purpose of this case report is to report the dental care delivered to a pediatric patients with ASD. It can be concluded that general anesthesia was considered an appropriate dental treatment plan since the two patients in question were lacking the ability to cooperate on the dental chair. In other words, pediatric dental care treatment plans in cases of ASD should be determined by clearly-defined criteria, specifically the benefits and risks of the treatment plans for the safety of both patient and dental care team.

**KEYWORDS:** Autism spectrum disorder, Special child, Health care needs, Preventive measures.

**INTRODUCTION**

Autism was first described in 1943 by the American child psychiatrist Leo Kanner. He presented 11 children whose behavior was obviously different from others. Kanner suspected that they had an inborn feature which prevented their forming regular social contacts. Autism is now recognized as an organic disorder characterized by abnormalities in the brain, especially the limbic system and cerebellum and is characterized by abnormal emotional and social behavior and linguistic development.<sup>[1]</sup> To be diagnosed as autistic, a patient must exhibit a specified number of symptoms, although not all of them must necessarily be present at the same time or to the same degree. The criteria described in the DSM (Diagnostic and Statistical Manual of Mental Disorders), encompass qualitative impairments in social interaction and communication, as well as deviant patterns of behavior, interest, or activities. Parents are important aides in diagnosing AD, as they are usually the first to be concerned about disturbed development of their child: impaired communication, lack of social relationships and imaginative play, and to a lesser extent, hearing impairment and delay in attaining milestones. The mean age noted for these deviations is 17 months and the mean age for final diagnosis is 44 months.<sup>[2]</sup>

Children with autism spectrum disorders have multiple medical and behavioral problems like obsessive routines, repetitive behaviors, unpredictable body movements, and self-injurious habits which complicate dental care. Better understanding of the effect of autism on the behaviour of affected individual helps the dental practitioner to deliver oral health care in an empathetic and appropriate manner.<sup>[3,4]</sup> A number of previous studies have already shown that children with ASD have a tendency to be more less cooperative during dental examinations, for example, being reluctant to open their mouths or rejecting instruments inserted into their oral cavity. Most ASD children have difficulty in understanding abstract contexts so communication should use short, clear, and simple language.<sup>[5]</sup> The purpose of this case report is to report the dental care delivered to a pediatric patients with ASD. General anesthesia was considered an appropriate dental treatment plan since the two patients in question were lacking the ability to cooperate on the dental chair.

**CASE REPORT**

A patient reported to the department with the chief complaint of pain in the lower right back teeth region, since 2months. Pain was intermittent in nature and swelling was noticed by the parent 3 weeks back, which

subsided at the time of reporting. Past medical history reveals a known case of autism, and was on medication, since 5 years. Past dental history revealed that the patient visited private clinician for the above mentioned chief complaint for which she was prescribed antibiotics and analgesics and referred to our department. Her behaviour was rated as definitely negative. On clinical examination, extra- orally: scar was seen on the forehead. Intra-orally it was noticed that 54,55,85,83 were grossly destructed and deep proximal caries seen with respect to 36 &46. Root stumps seen with respect to 65, 74, 75. Occlusal caries was seen in relation to 16, 26. Paediatrician consent was taken & blood investigations were done and planned to be taken under GA for full mouth rehabilitation. Extraction of Root stumps and grossly destructed teeth was done in relation to 54, 55, 65, 74, 75, 84, 85 and restorations and sealants were done in relation 16, 26, 36, 46. Follow up was done after one week.

During the first visit, an extraoral examination was performed, the results of which revealed no facial asymmetry and on clinical examination, extra- oral scar was seen on the forehead. From the outset of the consultation, the child would sit on the dental chair, although only briefly, but did not want to open his mouth. The patient simply pointed with a finger to his left cheek. The examination was, therefore, limited to one using a dental mouth mirror. The results of the initial examination indicated the widespread presence of caries and the persistence of the residual roots of teeth. Radiographic examination could not be performed since the child could remain calm. The patient's parents were instructed during the initial visit on how to brush their child's teeth. The patient was subsequently scheduled for several treatment sessions under general anaesthesia in accordance with the parents' wishes following a discussion involving the dentist and both the mother and father.

Management of post-action pain and fluid therapy were performed and monitored by a pediatrician. A 24-hour

post-operative control was then conducted which produced clinical data indicating controlled bleeding and no swelling. Again, attempts were made to motivate him to maintain oral hygiene at a high level, while his mother was taught, on this occasion, the most effective technique for brushing her son's teeth. The patient was on a regular follow up. On regular follow up visits the patient initially resisted, having no memory of the atmosphere at the clinic. However, a brief examination was conducted by means of a mouth mirror, the results of which confirmed a high level of oral hygiene and the absence of new caries.



**Pre-procedural pictures.**





**Post-procedural pictures.**

## DISCUSSION

Oral health is an important aspect of health for all children, and more so for the children with special care needs, where prevention is more advantageous as treatment often incurs high cost and more risky than usual. Children with autism are often cited as having certain behavioral factors which may lead to an increased risk for caries like medications causing xerostomia, dietary choice (preference or soft/sweet foods) and poor maintenance of oral hygiene. This will apparently lead to the increased risk for dental caries, which is more prevalent in children of 7 years or younger due to unknown reasons. American Academy of Pediatric Dentistry's guideline on Caries Risk Assessment have categorised them under High risk for physicians and other non-dental health care providers and Moderate risk for dental providers.<sup>[6]</sup> Attitude and knowledge of the oral health care professionals is of utmost importance while rendering the oral health care to such children. The initial examinations of the patient showed signs of ASD confirmed by anamneses from the patients' mother. There are actually several indicators of autism disorders in children, namely; a failure to communicate effectively due to their ignorance about the environment as well as their inability to provide information using verbal language, gestures and eye contact.<sup>[7]</sup>

Certain risk factors cause ASD children to be uncooperative during dental care, namely: age (4-7 years or >7 years), reading ability (strong or weak), accompanying systemic diagnosis (present or absent) and speaking ability (evident or not evident). The presence of two or more risk factors indicates a tendency towards uncooperative behavior. By knowing these facts in advance, the dental care team is then expected to be able

to predict the cooperativeness of such children. Unfortunately, the intraoral examination was neither completely nor successfully performed during the first visit of either patient. Individuals with ASD generally experience hypersensitivity in the intraoral and perioral areas and tend to be sensitive to even a light touch during dental examination.<sup>[8,9]</sup> Thus, refusal to cooperate or physical resistance during a dental examination is a distinct possibility with young ASD patients. The patient's mother in this case was asked to help the dentist train the child to open his mouth by pretending to be a dentist herself. However, obstacles occurred during the oral examination. For instance, the results of a provisional clinical examination indicated that invasive action in relation to certain teeth was required. However, the patients proved uncooperative and it was thus necessary to administer a pre-treatment general anesthetic. The administering of nitrous oxide to ASD patients represents a challenge, given the prerequisite level of communication. Therefore, if the patients are unable to respond to a form of sedation using nitrous oxide, dental treatment involving the administering of a general anesthetic should be undertaken.<sup>[10]</sup> Moreover, the need for extensive treatment (involving four quadrants) and/or complex treatment also triggers the use of general anesthesia. Children with autism have abnormal levels of serotonin or other neurotransmitters in the brain or have irregularities in several brain regions that affect normal development. There are, however, groups that are at higher risk for autism disorders. These include boys, siblings of those with autism and children with other developmental disorders. There is no prevalence among a specific race, socioeconomic status or parental education level. Epilepsy occurs more commonly than usual in autism and was one of the

indications that this was a neurobiological disorder and not one caused by parental behaviour. There is an increased and variable association between autism and epilepsy.<sup>[11]</sup>

Lowe and Lindemann assessed AD patients' dental needs by studying a group of 20 AD subjects and compared them to 20 nonautistic age-matched controls. In the primary dentition, the patients with AD demonstrated a significantly higher caries rate than the controls on initial examination, but at recall examinations, dmf values were comparable. In patients with permanent dentition, both at baseline and recall, DMF scores were not different between the groups. No statistically significant differences were found in the oral hygiene indices.<sup>[12]</sup> They also noted a need for oral hygiene instructions and additional training for patients to increase their motor skills to perform more effective cleaning. A low incidence of dental caries was mentioned by Kamen and Skier. There is no doubt that prevention of oral disease is of paramount importance and all efforts should be directed to repeated oral hygiene instructions. To achieve this, the parents/caretakers must become involved, which is sometimes difficult.<sup>[13]</sup>

Finally, it can be concluded that dental care for children with ASD should take account of the safety benefits and risks to both patient and dental teams. The dental care provided to children with ASD should also be supported by preventive efforts on the part of parents/caregivers and children. Moreover, general anesthesia may be considered to be a valid solution if other behavioral management options have been implemented. Ultimately, dental treatment under general anesthesia will have greater benefits than risks.

## REFERENCES

1. Delli K, Reichart PA, Bornstein MM, Livas C. Management of children with autism spectrum disorder in the dental setting: concerns, behavioural approaches and recommendations. *Med Oral Patol Oral Cir Bucal*, 2013; 18(6): e862–8.
2. Nagendra J, Jayachandra S. Autism spectrum disorders: dental treatment considerations. *J Int Dent Med Res.*, 2012; 5(2): 118–21.
3. DeMattei R, Cuvo A, Maurizio S. Oral assessment of children with an autism spectrum disorder. *J Dent Hyg.*, 2007; 81(3): 1-11.
4. Marshall J, Sheller B, Mancl L. Caries-risk assessment and caries status of children with autism. *Pediatr Dent*, 2010; 32(1): 69–75.
5. Smith B, Chung MC, Vostanis P: The path to care in autism: is it better now? *J Autism Dev Disord*, 1994; 24: 551-63.
6. Felicetti DM, Julliard K. Behaviors of children with and without attention deficit hyperactivity disorder during a dental recall visit. *ASDC J Dent Child*, Jul-Aug, 2000; 67(4): 246-249, 231.
7. Erskine HE, Ferrari AJ, Polanczyk GV et al. The global burden of conduct disorder and attention/deficit/hyperactivity disorder in 2010. *J Atten Disord*, 2002; 6(1): 7-16.
8. Klein U and Nowak AJ. “Autistic disorder: A Review for the pediatric dentist”. *Pediatric Dentistry*, 1998; 20.5: 312-317.
9. Chi DL., et al. “Caregiver burden and preventive dental care use for US children with special health care needs: a stratified analysis based on functional limitation”. *Maternal and Child Health Journal* 18.4 (2014): 882-890.
10. Rekha VC., et al. “Oral health status of children with autistic disorder in Chennai”. *European Archives of Paediatric Dentistry*, 2012; 13.3: 126-131.
11. Gabriele S, Sacco R, Persico AM. Blood serotonin levels in autism spectrum disorder: a systematic review and meta-analysis. *Eur Neuropsychopharmacol*, 2014; 24(6): 919–29.
12. Murshid EZ. Oral health status, dental needs, habits and behavioral attitude towards dental treatment of a group of autistic children in Riyadh, Saudi Arabia. *Saudi Dent J.*, 2005; 17: 132–9.
13. Spence SJ, Sharifi P, Wiznitzer M. Autism spectrum disorder: screening, diagnosis, and medical evaluation. *Semin Pediatr Neurology*, 2004; 11(3): 186–95.