

The importance of oral health maintenance awareness in the patient with autism spectrum disorder

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ABSTRACT

Autism Spectrum Disorders (ASD) are a heterogeneous group of neurodevelopmental disorders characterised by persistent deficits in communication and social interaction across multiple contexts, together with restricted, repetitive patterns of behaviour, interests, or activities. Patients with ASD require a personalised approach and treatment, in which collaboration between the dental hygienist, the patient, and the caregiver is essential in order to prevent dental disease and to facilitate cooperation during dental visits and procedures..

Keywords Autism, paediatric age, dental hygiene, behavioural strategies.

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INTRODUCTION

ASD is a complex neurodevelopmental disorder characterised by behavioural and psychological difficulties, with pervasive and persistent impairments in communication and social interaction [1].

Verbal and non-verbal deficits in social communication manifest in different ways depending on the individual's age, intellectual level and language ability, as well as on the treatment received and the daily support provided. Many individuals present with language deficits ranging from a complete absence of speech to language delay, poor comprehension of speech, echolalia, or stilted and overly literal language [1,2].

The rate of ASD has increased worldwide over the last socio-economic decade. In Italy, it is estimated that 1 in every 77 children (aged 7–9 years) has ASD, with a higher prevalence among males; the male-to-female ratio is 4.4:1 [3].

The aetiology remains undefined, although recent studies indicate that both genetic and environmental factors may contribute to the onset of this disorder [4].

In most regions of the world, awareness of autism has advanced substantially, although this has not always translated into a significant increase in available services [5].

The COVID-19 pandemic likely provided a further impetus for research on this topic. Several factors during the pandemic, such as lockdown and physical distancing, caused greater difficulty for individuals with ASD in adapting to the sudden disruption of their daily routines, including dif-

ficulty accessing oral hygiene maintenance programmes during that period. Oral care is important for every individual in several respects, as it contributes not only to improving the general physical condition of the body but also to a positive perception of the aesthetic quality of the smile and, consequently, to improved self-esteem.

This concept is of fundamental importance for all individuals, but even more so for those with ASD, who face numerous challenges in interpersonal relationships.

Maintaining a good level of oral health is therefore possible through good oral hygiene; for this reason, the dental hygienist represents a key professional figure in the prevention of oral disease and in raising awareness of oral health maintenance. However, performing daily oral hygiene is often extremely difficult for patients with ASD, as this activity requires concentration, memory, manual dexterity and consistency. For this reason, the dental hygienist plays a fundamental role in instructing and motivating the caregiver, i.e. the person who assists or supervises the patient during oral hygiene procedures [6,7,9,10].

MATERIALS AND METHODS

Patient A, a 5-year-old non-verbal patient with ASD, presented with feeding difficulties and recurrent dental abscesses treated pharmacologically with antibiotic therapy owing to a lack of cooperation during dental examination. Given the clinical picture, the patient was urgently placed on the surgical waiting list for treatment under general anaesthesia. A few months later, the patient underwent their first dental procedure under

general anaesthesia, during which complete treatment of the deciduous teeth in the upper arch was performed, together with extraction of the compromised deciduous teeth in the lower arch (Figures 1-3).

The postoperative course was uneventful, with no respiratory complications, and the patient showed immediate improvement in food intake, returning to a regular diet.

Patient B, a 6-year-old non-verbal patient with ASD, presented to the department for the first time with several months of unexplained febrile episodes. During the first visit, owing to the patient's lack of cooperation, it was not possible to assess the condition of the oral cavity; given the recurrent febrile episodes, the patient was urgently placed on the surgical waiting list for treatment under general anaesthesia, during which the deciduous teeth and two permanent teeth affected by destructive caries were extracted (Figures 4-6). The postoperative course was uneventful, with no respiratory complications, and the patient's recurrent febrile episodes resolved immediately. At subsequent follow-up visits, both patients were

referred to the dental hygienist, who established two-monthly follow-up appointments.

RESULTS

At the first appointment, given the limited cooperation of both patients, the dental hygienist educated and instructed the caregivers in performing oral hygiene at home, using a toothpaste with a fluoride concentration appropriate to the patients' age and the manual Bass brushing technique, as both patients initially refused to use an electric toothbrush. Guidance was also provided on a diet low in cariogenic foods. At subsequent two-monthly follow-up visits, through the use of behavioural methods (tell-show-do, audio-visual distraction, and augmentative and alternative communication), it was possible to gradually familiarise the patients with the use of the electric toothbrush and, more importantly, with the dental setting, including the clinical examination and polishing.

Augmentative and Alternative Communication (AAC) is



Fig. 1 Patient A, a 5-year-old with ASD, with destructive caries affecting all deciduous teeth of the upper arch.



Fig. 2 Patient A, a 5-year-old with ASD, with destructive caries affecting the deciduous teeth of the lower arch.



Fig. 3 Deciduous teeth with destructive caries, extracted under general anaesthesia from the oral cavity of Patient A.



Fig. 4 Patient B, a 6-year-old with ASD, with destructive caries in the lower arch.



Fig. 5 Patient B, a 6-year-old with ASD, with destructive caries in the upper arch.



Fig. 6 Patient B, a 6-year-old with ASD, with destructive caries in the upper arch.

used as a communication method with non-verbal or partially verbal patients with special needs [8]. In the dental setting, this technique involves placing symbolic cards bearing very simple images in the surgery, indicating the actions to be carried out during clinical dental procedures. These cards thus facilitate understanding and communication between patient and clinician. Effective use of AAC, however, requires initial training of the dental hygienist by a professional educator experienced in AAC, who supported the dental hygienist in both theoretical training and, above all, practical hands-on training. This collaboration between the dental hygienist and the professional educator enabled the dental hygienist to acquire the correct behavioural methodology for using AAC with partially or totally non-verbal ASD patients.

DISCUSSION

The main point emphasised by health institutions is the recommendation of regular, early dental visits for the paediatric population, especially for patients with special needs. Families of children diagnosed with ASD often tend, in the child's early years, to underestimate or postpone dental care, preferring medical and educational interventions targeted specifically at the syndrome. In this context, the role of the paediatrician and of dental professionals (dentist and dental hygienist) is essential in giving due importance to oral hygiene and to the prevention of oral disease, and in directing the patient towards dental facilities experienced in managing patients with special needs. Providing a high standard of care to patients with ASD requires patience and a thorough understanding of the patient's overall profile, including degree of disability, level of cooperation, and specific behaviours; in this way, the dental hygienist and the dentist will also be able to provide appropriate dental care using the most suitable approach.

CONCLUSIONS

Current literature has shown that people with ASD face numerous barriers in accessing dental care and in achieving adequate oral health. The findings of this study highlight the importance of providing accessible and appropriate

care for populations with special needs. For this reason, in order to preserve the oral health of patients with autism, collaboration among the healthcare professionals involved in their care pathway is essential, so as to define personalised educational strategies for each individual. Instruction of both the caregiver and the patient in home oral hygiene procedures, supported by visual aids or positive reinforcement, is fundamental. Chairside treatment of patients with autism can be complicated by their difficulties in relating to and communicating with others; for this reason, the dentist and dental hygienist must make full use of all available resources to build an empathetic, trusting relationship with these patients, tailoring their approach and mode of interaction to each patient's level of difficulty and comprehension.

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