

## Dental Treatment in Asperger Syndrome

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**Abstract:** Abnormal behaviours observed in children can be an expression of pathological childhood diseases involving neuromuscular systems, the first symptoms of mental retardation, or indications of behavioural disorders. Asperger Syndrome (AS) is a disorder that causes social difficulties, a stereotypical behavioural pattern and a limited range of interests. Dentists face various problems during treatment of such patients, such as a deficiency in communication and little cooperation. The purpose of this case report is to describe the dental treatment of a child with Asperger Syndrome. Dental treatment was performed under general anaesthesia. The Paediatric dentist should be aware of the symptoms of Asperger Syndrome, and how these can interfere with dental care.

**Key Words:** Asperger Syndrome, Behavioural Management, Dental Treatment

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### I. Introduction

Asperger syndrome (AS) is one of the autism spectrum disorders (ASD)[1]. According to a more detailed classification, Asperger Syndrome is one of a subgroup of Pervasive Developmental Disorders (PDD), this means that it affects all aspects of life [2]. The estimated prevalence of AS is 10-26 per 10,000 population and AS is observed in males more than in females, with a frequency of 4/1 [3]. AS is not associated with parental education, occupation, racial origin, or religion. There is no specific cause of AS, but genetics do play an important role [4].

The symptoms of ASDs are categorized into three groups: 1) Impairment in social interaction, 2) Impairment in communication, 3) Restricted, repetitive, and stereotyped behaviour [1, 2]. It is important for the dental practitioner to be aware of symptoms that could interfere with dental care. Despite intact intellectual skills, children with AS show marked paucity of nonverbal communication, involving both gestures and affective tone of voice. They show poor empathy, a tendency to intellectualize emotions, and an inclination to engage in long winded, one-sided, sometimes incoherent, and rather formalistic speech. They have all-absorbing interests, involving unusual topics that dominate their conversation; they also show motoric clumsiness [5].

Children diagnosed with this disorder possess unique characteristics (social impairment, communication difficulties, play and imagination deficits, and a range of repetitive behaviours and interests) that impact directly on their dental care and create challenges for both parents and dental professionals (6). The extent of oral hygiene among children with AS is similar to that of healthy children [6]. Individuals with developmental disabilities show an increased prevalence of oral diseases, such as dental caries and periodontal diseases, as compared with populations without disabilities in the older age range [7]. A major barrier during dental treatment is deficiency in communication with children with AS. The first and important step for the dentist is to determine the degree of cooperation of the child with AS. Different dental treatment options can range from argumentative communication, visual pedagogy, premedication, to general anaesthesia [8].

There have not been enough studies regarding dental diagnosis, dental treatment and access to dental care of children with AS. The purpose of this case report is to describe the dental treatment of a child with Asperger syndrome.

### II. Case Report

A 5-year-old boy patient was referred to our Department of Paediatric Dentistry because of toothache. Through medical anamnesis with the parents it was learned that the patient and the patient's father had been diagnosed with AS. The patient had no systemic illness. However, during the physical examination aggressive behaviour was noted, and that he did not allow communication behaviours, such as eye contact, and did not answer questions. Furthermore, the patient repeated some incoherent words and questions.

The extraoral examination did not reveal any abnormality. The intraoral examination revealed extensive caries in the deciduous anterior, upper right first molar, upper second right molar, upper left

molar and lower first molar. The patient did not permit the taking of radiographs, neither periapical, panoramic nor photographic.

The plan was to restore all decayed teeth, and extract the teeth with periapical lesions under general anaesthesia. The deciduous upper right first molar, upper right second molar, and upper left second molar, and lower first molar were restored with compomer restorations. The deciduous upper right first molar, upper right second molar and upper left second molar were treated by pulpotomy. Deciduous upper centrals and laterals were extracted because of periapical lesions. The patient was request to attend the clinic for follow-up regularly every 6 months.

### **III. Discussion**

Asperger Syndrome is a life-long neurological disorder [9]. . The primary causes of Asperger Syndrome are environmental factors, cerebral accident, hard births, and diseases during infancy (measles, varicella etc.) [10]. According to the literature, the genetic inheritance of people plays an important role in Asperger Syndrome [4]. In this case, the father's having AS supports the likelihood that the child's was primarily due to genetic transmission.

The characteristic features of AS include severe impairment in reciprocal social interaction, all-absorbing narrow interests, imposition of routines and interests, speech and language problems, motor clumsiness. During clinical examination, speech and tongue problems can be recognised via questions asked by dentist. In our case, avoiding eye contact, echolalia, and behaving aggressive manner all appeared as obstacles in the face of normal behavioural guidance.

Any typical intraoral or extraoral dental findings related to Asperger Syndrome are not reported in the literature [7, 9, 11]. It has also been reported that there are no differences in the level of dental caries between autistic children and healthy children [12]. Another study concluded that the greater incidence of oral disease in autistic patients was related to periodontal disease, and that the prevalence of caries in this population is similar to, or lower than, the typical population [13]. Contrary to the idea that individuals with special needs experience more oral and dental disease, studies show that autistic patients have a lower, or at least the same, prevalence of dental disease (e.g. dental caries) when compared with the healthy population [6].

There are some rules and behaviours that need to be carefully observed during dental examination and treatment of patients with AS. The paediatric dentist should explain all materials and tools to be used, clearly and comprehensibly, during conversation with the child. This is because tactile, auditory and sensory hyper-sensitivity in children with AS can lead to unforeseeable reactions during dental treatment [14]. It is possible that sensory stimuli may trigger a strong reaction in a dental environment, and these stimuli may include light, the odour of dental materials, the noise from dental equipment, and the feel of cold instruments in the mouth [14].

Behaviour management, including communication, and pharmacological and immobilization techniques, is necessary in order to successfully treat patients with AS [8]. According to the Frankl scale, our case was classified as "definitely negative". For this reason, there was a need to perform treatment under sedation, or general anaesthesia. Because the dental treatment would take a long time, it was decided that in this case the treatment would be performed under general anaesthesia. The use of general anaesthesia is the best strategy when treating autistic children who require extensive dental treatment [15].

### **IV. Conclusion**

When the paediatric dentist experiences "deficiency of communication" with a child, they should be aware that this does not always result from fear and anxiety; it can also be an indicator of an underlying behavioural disorder.

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