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Case Report

Periodontal Treatment Under General Anaesthesia in a Patient With Autism Spectrum Disorder: Case Report

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Abstract

Non-surgical periodontal treatment, which initially focuses on monitoring and educating patients on oral hygiene, as well as scaling and root planing appointments, is usually sufficient for the proper management of periodontal disease. However, in patients who lack the cognitive ability required for clinical management, basic periodontal treatment is impractical. Cognitive ability in patients with autism spectrum disorder varies, which may or may not facilitate clinical care. When outpatient dental care is not possible, hospital-based care in an operating theatre, under general anaesthesia, is recommended. The purpose of this article is to present a case of a patient with severe autism spectrum disorder who underwent general anaesthesia in a hospital setting for the treatment of advanced periodontal disease.

Keywords: *Autism Spectrum Disorder; Periodontal Diseases; Dental Scaling; General Anesthesia; Hospital Dental Service.*

Introduction

Non-surgical periodontal treatment, initially consisting of oral hygiene instruction and scaling and root planing appointments, is usually sufficient for controlling dental biofilm and, subsequently, for the proper management of periodontal disease. For proper oral hygiene, patients need to be aware of the aetiological factor - dental biofilm - and oral hygiene techniques[1].

For patients who lack sufficient cognitive ability for clinical management, basic periodontal treatment or even routine dental treatment is impractical. The performance of periodontal treatment requires relative immobility, tolerance to tactile and auditory stimuli, control of reflexes, continuous suction and adequate clinical time[2,3].

Many patients with special needs may lack the cognitive ability to understand their clinical management. Among these patients, those with autism spectrum disorders (ASD) exhibit varying levels of cognition. For these patients, limitations in cooperation and safety risks may indicate the need for more advanced management techniques. In selected circumstances, general anaesthesia in a hospital setting may be required, in accordance with international recommendations for patients with special needs[2-4].

The purpose of this article is to present a case of a patient with severe autism spectrum disorder who underwent general anaesthesia in a hospital setting for the clinical treatment of advanced periodontal disease.

Case Presentation

A Caucasian male, 35 years-old, diagnosed with ASD II, attended the dental clinic for a periodontal assessment, accompanied by his mother, complaining of severe halitosis and discomfort due to bleeding gums.

During the medical history interview, questions were asked regarding oral hygiene practices; however, the patient's answers regarding the duration and quality of brushing were unfavourable, as the patient was not brushing effectively.

The patient was escorted to the dental chair and showed resistance to the dental examination. During attempts to acclimatise him to the procedure, the patient displayed aversion to sensory stimuli in the dental environment, intolerance to intraoral manipulation, irritability and aggression.

Given the need for periodontal treatment, as reported by the patient's mother, hospital-based management under general anaesthesia was recommended.

The patient was referred to a cardiologist and anaesthetist for pre-operative examinations. No abnormalities were found (ASA II) that would contraindicate the procedure under general anaesthesia in a hospital setting. The procedure was scheduled at the São Paulo Air Force Hospital.

General anaesthesia was induced using propofol and sevoflurane (Figure 1). Clinically, advanced periodontal disease was observed, with excessive accumulation of biofilm and dental calculus, as well as severe gingival inflammation with spontaneous gingival bleeding (Figure 2).

Scaling and root planing was performed on all present teeth in the maxilla and mandible (Figure 3). Throughout the procedure, the patient's vital signs were closely monitored and remained stable (Figure 4). Once the periodontal treatment was completed (Figure 5) and the general anaesthesia had worn off, the patient was monitored in the recovery room for 12 hours.

Despite the patient's difficulty in maintaining good oral hygiene, the mother was given further guidance on oral hygiene.

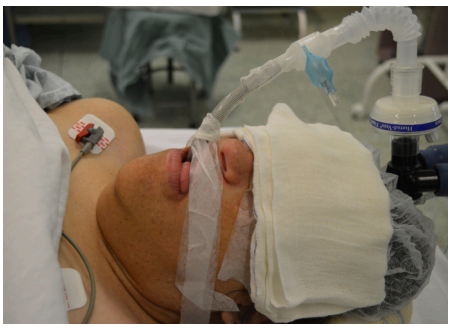

Figure 1. Pre-operative preparation of the patient under general anaesthesia and orotracheal intubation.

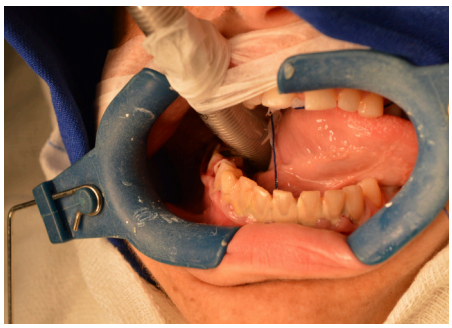

Figure 2. Pre-operative: patient with advanced periodontal disease.

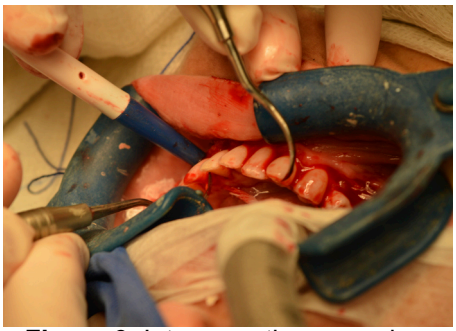

Figure 3. Intraoperative procedure (scaling and root planning).

Figure 4. Patient being monitored during the procedure.

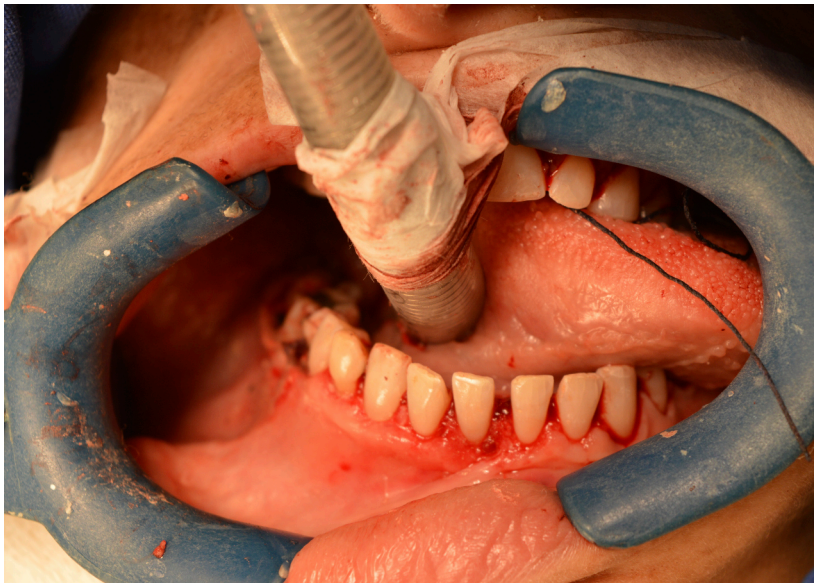

Figure 5. Immediate post-operative view following scaling and root planing.

Discussion

In patients with ASD II, sensory impairments and communication difficulties may make outpatient care unfeasible, necessitating general anaesthesia in a hospital setting. A risk-benefit assessment should always be considered[2,3,5-9]. In the present case, the patient's lack of cooperation with outpatient periodontal treatment necessitated hospitalisation. Furthermore, the preoperative assessment carried out by the cardiologist and anaesthetist made the procedure feasible in a hospital setting (ASA II).

Decision-making regarding general anaesthesia in patients with ASD must take into account predictability and safety, as well as specific mitigation measures, including adapted communication; risk reduction for adverse events related to aspiration, sudden movements and fluid management; an environment with reduced sensory stimulation; and structured guidance for carers on signs of pain and post-operative behavioural effects[1-3,5-17]. The literature on hospital dental care for people with special needs highlights the importance of maintenance protocols to reduce recurrence and the need for repeat general anaesthesia[2,3,5,6,10-15].

Periodontal treatment under general anaesthesia in patients with ASD may be indicated to ensure safety and therapeutic completeness, provided it is accompanied by perioperative planning and a robust maintenance strategy to reduce the need for retreatment and further exposure to general anaesthesia[1-3,5-7,11-17].

From a periodontal perspective, patients may present with advanced bone loss and, consequently, tooth mobility. Injuries and complications may occur during intubation or extubation. These injuries may include crown fractures, root fractures or, in more advanced cases, tooth extrusion. In this context, protective measures must be implemented pre-, intra- and post-operatively (16). As these are clinically significant events with medico-legal implications, documentation prior to anaesthesia and surgery must be duly recorded[16-18].

When performing periodontal treatment in a hospital setting, the technical predictability required to carry out scaling and root planing procedures thoroughly and efficiently is of particular importance[1]. Furthermore, the dental assistant is responsible for managing fluids, aerosols, debris and bleeding throughout the procedure. Continuous monitoring and haemodynamic stability during the procedure, as described, reinforce the appropriateness of the anaesthetic plan and intraoperative safety in this scenario. The decision to provide prolonged post-anaesthetic observation is also consistent with the need for enhanced monitoring in patients with special needs, and in particular, patients with severe ASD, especially when there is a risk of agitation during recovery and difficulty in communicating symptoms[5-7]. The accompanying person should be advised regarding these precautions[7].

Unfortunately, due to poor periodontal care, particularly when carried out by the patient themselves, it is common for periodontal disease to recur and for general anaesthesia to be required again in order to carry out treatment. Ideally, it would be essential for the control of dental biofilm, carried out by the patient or carer, to ensure the long-term maintenance of periodontal health. Where possible, the dentist should devise feasible strategies for home hygiene and regular follow-up appointments[1-3,11-15].

Finally, adherence to periodontal guidelines requires that supragingival and subgingival mechanical therapy be accompanied by a maintenance strategy and risk factor management, as clinical stability depends on continuity of care[1]. In TEA, this involves translating clinical goals into simple, predictable and tolerable routines, with caregiver training and scheduled reassessments, to reduce inflammatory recurrence and the need for further interventions under general anaesthesia[1-3,5-7,11-14].

Conclusions

For patients with special needs, outpatient dental treatment is unfeasible. In such cases, treatment in a hospital setting under general anaesthesia may be recommended, providing greater safety and comfort for the patient and their carers/family members.

Conflict of Interest

The authors declare no conflict of interest.

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