

# DENTAL MANAGEMENT OF THE PATIENT WITH DOWN SYNDROME

Medina Arizpe, Selenia Janet, DDS, Pediatr. Dent.; Ibarra Noriega, Ana Magdalena, DDS, MS, MPH

## Introduction

Dental care in people with trisomy 21 (T21) is of vital importance not only to preserve the dental organs but also to avoid infective endocarditis, especially in cases of people presenting cyanotic congenital heart disease such as tetralogy of fallot. Moreover, the oral cavity is highly affected by the phenotypic characteristics of the syndrome including depression of the middle third of the face, tonsillar hypertrophy, maxillary collapse, macroglossia or pseudo macroglossia, alterations in nasal breathing, and sleep apnea. These characteristics condition and predispose patients to various oral diseases. The low position of the tongue and its large size make it impossible to swallow food correctly and favor food retention in the cul-de-sac and cheeks. The tongue also projects towards the occlusal surface of the lower molars, making proper oral hygiene impossible.

## Clinical case

A 21-year-old male diagnosed with trisomy 21, hypothyroidism, dental caries, mild mental disability, obesity, postoperative tetralogy of Fallot, allergic to sulfonamides and treated with levothyroxine 100 MCG/24 hours, comes to the office due to pain dental origin.

In the first appointment, the oral clinical examination using the behavior management technique "say, show, do". We used a face mirror for the patient to observe the examination and be calm. The presence of the parents was of vital importance in this case since they helped him cooperate better and feel more confident and calm.

The extraoral examination showed typical facies of the syndrome: incompetent, dehydrated lips, depressed middle third of the face, more prominent lower third, centered and marked chin. The intraoral clinical examination showed complete permanent dentition with caries of various degrees, molar erosion, abundant biofilm, root remains in various dental organs, scrotal tongue with macroglossia, collapsed upper palate, class III, mandibular prognathism, and halitosis.

We decided to carry out dental rehabilitation under deep intravenous (IV) sedation dictated by an anesthesiologist, in two

## Medical management and special considerations for Down syndrome

Consultation with cardiology to evaluate the patient's cardiovascular condition cleared the patient for dental treatment. Prophylaxis against endocarditis was provided as recommended by the American Heart Association using 2 grams of Amoxicillin one hour before the dental appointment. Recent laboratory tests, blood count, blood chemistry, coagulation times were requested, all of which showed normal values. It was indicated to place bioadhesive gel of chlorhexidine gluconate at .20% in the pre and postoperative period, as oral antiseptic.

Regarding the management of the patient's behavior, the patient and his parents were previously explained the procedures to be completed and the potential sensations the patient would feel to get a positive reception of sedation.

## Anesthetic management

Sedation induction was performed with sevoflurane for 1 minute prior to the IV delivery of minimum doses of: midazolam, ketamine, fentanyl, propofol. Then, a nasal high-flow oxygen cannula was placed, complete monitoring with pulse oximeter, sphygmomanometer and cardiac monitoring. Local anesthesia was used by administering a maximum of 72 mg of lidocaine with epinephrine 1:100,000 IU.



## Restorative treatment

The first appointment consisted of lower arch extractions of teeth 19, 30 and aesthetic composite resin restorations in 18, 23, 24, 25, 26 and 27.

The second appointment occurred two years later once the family had the covid-19 vaccine, their choice. Treatment was performed on the lower arch due to recurrent caries, placing chrome steel crowns in teeth 3, 18, 30, aesthetic composite resins in 4, 5, 11, 12 and extractions 2, 6, 7, 8, 9, 10, 11, 14 and 15. Simple absorbable stitches were placed in the extraction area.

Stainless steel crowns were placed in the teeth with recurrent caries due to family environmental challenges related to the patient's oral hygiene and their high intake of carbohydrates and their risk of caries.



## Conclusion

In addition to the challenge in managing the behavior of patients with down syndrome, they are required to attend a consultation every 3 months to perform dental prophylaxis and fluoride application, evaluating the individual conditions of each patient to establish their risk of caries. Being able to train the family to perform dental hygiene at home guarantees the gingival oral health of the patient to preserve the dental organs. Encourage the first dental appointment to be at birth or at 6 months of life, getting the child used to dental check-ups, brushing teeth with an electric toothbrush at home helps stimulate the mouth in areas of difficult access and to accustom the patient to noise, vibration that resembles the dental piece that we use in the office. In cases of macroglossia, it is necessary to move the tongue to be able to clean the occlusal surfaces of the lower molars well.

## References:

Mubayrik, A. B. (2016). The dental needs and treatment of patients with Down syndrome. *Dental Clinics*, 60(3), 613-626.