








## CASE PRESENTATION

### Treatment of oro-sinusal communication in a patient with recurrent cleft lip and palate surgery

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#### ABSTRACT

**Introduction:** the labial fissure and cleft palate are bad frequent congenital craniofacial formations that end up being a dysfunction of the very attractive development, due to the alterations that originate in the facial aesthetics, also causing problems in the speech and the feeding.

**Objective:** to present the case of a pediatric patient with palatine lips fissure, which presented a nasal buccal communication as a result of a surgery relapse, and their resolution by means of badge to plug with expansion screw.

**Case presentation:** male patient of 9 years, he goes to consultation in their mother's company. To the interrogation, he refers that it presents a buccal nasal communication in their palate which causes nuisances when feeding for what attended the Center of specialties odontology of Ibarra in the month of September of the 2024. In pathological personal records, the patient presented palatine lip alveolus fissure from the moment of her birth, for what underwent reconstruction surgery, which shows relapse. To the intraoral examination, the communication evidenced with its nasal cavity at the level of the line of Potsdam.

**Conclusion:** it was proceeded to make a badge to plug with expansion screw with the purpose of stimulating the growth of the maxillary bone and for a better function, phonation, aesthetics and swallow. Through this procedure you could visualize an improvement in the patient's activities, mainly as for the nutrition and feeding, improving this way their lifestyle and their development.

**Keywords:** Dentistry; Cleft Palate; Surgery; Palatal Obturators.

## INTRODUCTION

Cleft lip and palate is the most common congenital craniofacial malformation. This condition has significant implications for the patient's overall health, as the aesthetic consequences impact both the family unit and the social environment. Treatment typically involves multiple reconstructive surgeries, regular dental visits, hearing treatments, facial growth and speech therapies, and psychological interventions, which requires a multidisciplinary approach.<sup>(1,2)</sup>

The consequences of this malformation include feeding difficulties, nasal breathing, facial growth disturbances, speech problems, hearing problems, and dental development abnormalities. Therefore, it is crucial that both parents and healthcare providers share the responsibility for initiating timely surgical treatment to initiate early therapeutic interventions and minimize the complications associated with this condition.<sup>(3)</sup>

Cleft lip and palate becomes a very striking developmental disorder, since it will cause alterations in the appearance of the face, in addition to causing speech problems, which significantly affects the daily life of children who suffer from it, damaging their psychological development and their relationship with the environment by feeling socially rejected for their physical appearance.<sup>(4)</sup>

Cleft palate occurs between weeks seven and 12, while cleft lip occurs between 4 and 6 weeks of pregnancy.<sup>(5, 6)</sup> The prevalence of cleft lip and cleft palate is around 1 in every 600 to 800 live births, and is distributed as follows: cleft lip and cleft palate correspond to 45 %, while only cleft lip corresponds to 15 % and only cleft palate presents 40 %.<sup>(7)</sup>

Although a combination of genetic and environmental factors is believed to contribute to most cases, the exact cause remains unidentified. The primary etiological factor for these malformations is genetic. It is noted that incidence varies depending on ethnic origin, geographic origin, environmental, biological, economic factors, and others. For this reason, it is argued that cleft lip and palate are multifactorial. In Ecuador, it is one of the most common congenital malformations in children under one year of age, placing the country second in Latin America for this condition.<sup>(8)</sup>

With respect to the prevention of FLMP, it has been postulated that high-dose folate supplementation prior to and during the first months of pregnancy could reduce the risk of developing FLMP. Surgical resolution is indicated in patients in order to restore proper function to the stomatognathic system by replacing the tissues involved in the cleft; mainly the perioral muscles and the pharyngeal sphincter located in the soft palate.<sup>(9)</sup> Taking into account the above, the present investigation was developed, which aimed to present the case of a pediatric patient with cleft lip and palate (CLP) who presented a sinus-oral communication as a result of recurrent surgery, and its resolution by means of an obturator plate with an expansion screw.

## CLINICAL CASE REPORT

A 9-year-old male patient attended the Ibarra Dental Specialties Center in September 2024 with his legal representative (mother). He reported a sinus-oral communication in his palate, which caused discomfort when eating. His medical history indicated that the patient had cleft lip and alveolar palate (CLP) since birth, for which he underwent reconstructive surgery, which showed

recurrence. Family history indicated that his sister had a cleft lip and palate. Clinical examination revealed a communication with his nasal cavity at the Potsdam line, as well as transverse and anteroposterior maxillary atresia. Radiographic studies were therefore indicated for further analysis.

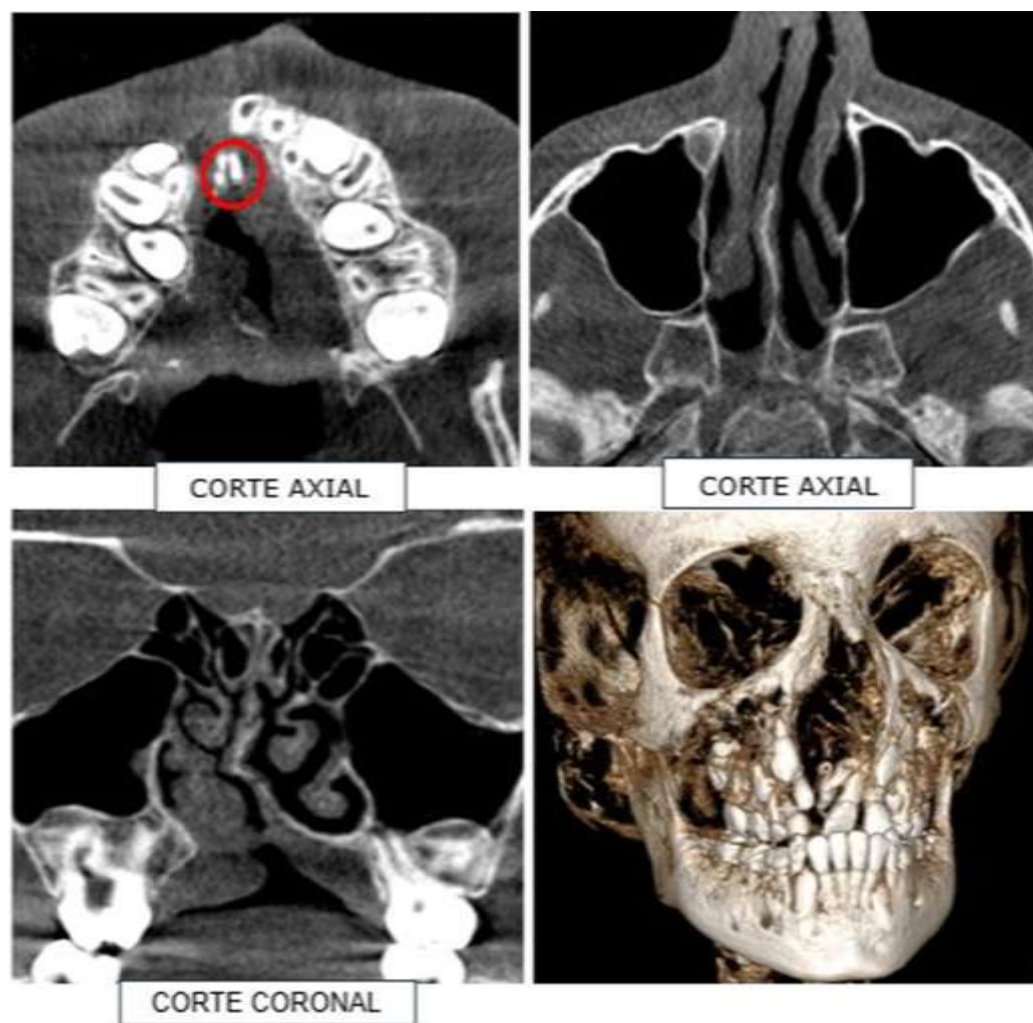
A panoramic radiograph (Figure 1) shows a mixed dentition, a deviated septum with nasal fossa obstruction, asymmetric nasal turbinates, a recurrent cleft in the hard palate, and dental follicles of the bicuspids, canines, and second molars. The patient also showed retained tooth 1.2, transmigration (a tooth that crosses beyond the midline) of tooth 2.2, and malocclusion of teeth 3.2, 7.3, 4.2, and 8.3.

The analysis of the cranial facial CT scan (See figure 2) shows: loss of continuity of the floor of the nasal cavities with cleft palate.

As part of the treatment for oromucosal communication, an obturator plate with an expansion screw was used to stimulate maxillary bone growth and improve function, phonation, aesthetics, and swallowing. A consultation with a maxillofacial surgeon was made for subsequent soft tissue approximation surgery. Communication was established with the patient's parents to provide education on the subject, and dental hygiene instructions were given for the child. Speech therapy and surgical corrections to the nose and lip were also required. The patient must continue his multidisciplinary treatment, depending on his age.



**Fig. 1** Panoramic X-ray of the patient.



**Fig. 2** CT scan of the patient.

## DISCUSSION

Most of the literature consulted refers to the fact that the best care for these patients should be provided at an early age, which coincides with Chávez et al. However, the authors report that in the hospital of Malange, Angola, they found adults who during their lifetime did not receive the benefits of surgical correction, because they did not have the possibilities of this type of treatment in their environment.<sup>(10)</sup> In international publications published in Spain, the results did not correspond to those in this report; in these publications, almost half of the patients were under five years old.<sup>(11)</sup>

In the present study, the patient's age was 9 years, which does not coincide with the research carried out at the William Soler Ledea University Pediatric Hospital in Havana, Cuba, where the predominant ages were less than one year and from one to five years.<sup>(12)</sup>

Based on the implemented treatment, another published case was found where a similar procedure was followed, such as the one reported at the "Dr. Faustino Pérez Hernández" University Polyclinic in Sancti Spíritus, Cuba; where an upper acrylic partial prosthesis with a palatal obturator was made.<sup>(13)</sup>

The research of Contreras et al establishes the extremely important of adding psychological consultations to multidisciplinary treatments, which is why in their study the members of this multidisciplinary team are responsible for keeping the parents informed and working with the child as he undergoes a new intervention.<sup>(14)</sup>

Every effort should be made to assist the patient and family in adapting to the demands and stresses of this condition. Parents should be informed about the recommended treatment, procedures, options, risk factors, benefits, and costs of assisting them. The beneficial influence of the multidisciplinary team on the family group is undeniable. Parents should be supported in coordinating their child's care; this facilitates their orientation.<sup>(15)</sup>

Bucco-nasal communications are pathological communications between the oral cavity, the maxillary sinus and/or the nasal cavities. The vast majority occur after the extraction of a maxillary tooth; however, as the present case demonstrates, they can occur due to other causes such as maxillary tumor resection surgery, enucleation of maxillary cysts, and implant and pre-implant surgery.<sup>(16)</sup> This entity requires specialized medical and surgical treatment. There are different surgical techniques, which depend on the location and size of the orifice.

According to Gamarra,<sup>(17)</sup> interventions for cleft lip and palate begin from the first trimester after birth, and surgical procedures begin between three and six months. During the child's growth, surgical interventions are repeated, accompanied by constant evaluations and preventive counseling.

In this case, alveolar bone grafts would be required, which should be performed between the ages of eight and 12. However, the patient had not been able to undergo such surgery.

## CONCLUSIONS

In the case report presented, the pediatric patient suffered from a sinus-oral communication due to a recurrence of a previous surgery. Therefore, an obturator plate with an expansion screw was fabricated to stimulate maxillary bone growth and improve function, phonation, aesthetics, and swallowing. This procedure demonstrated improvements in the patient's activities, particularly in terms of nutrition and feeding, thus improving his lifestyle and functioning.

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