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Case Report

Unilateral Cleft Lip and Cleft Palate: A Case Report

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Abstract

Cleft lip and cleft palate are congenital craniofacial anomalies that can occur together or in isolation. This condition happens due to genetic and environmental factors influencing the fusion of embryonic structures during the prenatal period. Usually patients present with multiple dental anomalies such as ectopic eruptions, supernumerary teeth, and natal/neonatal teeth, absent lateral incisors, enamel hypoplasia and other morphological anomalies that require multidisciplinary team approach. Cleft lip is more common in males. However, cleft palate is more common in females. Clefts can be either unilateral or bilateral with unilateral clefts being the most frequent. Hence, the objective of presenting this case report is to discuss the clinic features and management strategies associated with unilateral cleft lip and palate.

Keywords: Cleft lip; Cleft palate; Craniofacial

Introduction

Cleft lip and palate is one of the most common craniofacial malformations with an incidence of 1:750 for cleft lip with or without cleft palate. And an incidence of 1:2500 for cleft palate only [1]. In addition, cleft lip and palate account for approximately 50% of all cases, while isolated cleft lip and isolated cleft palate each account for 25% of cases [2]. Infants with a cleft lip and palate struggle with feeding in order to maintain adequate nutritional intake [3]. Some of the possible causes of cleft lip and palate include maternal exposure to certain drugs such as anticonvulsant drugs (Topiramate or Valproic acid), Accutane and Methotrexate. Furthermore, smoking during pregnancy increases the likelihood of clefts in infants [4,5]. Pregestational diabetes mellitus increases the risk of having a child with a cleft lip with or without cleft palate [6].

Case Presentation

An 11-year-old Egyptian male presented to Kuwait University Dental Clinic with a history of unilateral cleft lip and palate. The patient had undergone cleft lip and cleft palate partial repair at 11 months after birth. Cleft lip was fully treated however the patient needed further treatment for the cleft palate using bone graft that was not carried out (Figures 1 and 2). Upon intra oral examination, the patient has poor oral hygiene, several carious teeth and ectopic remaining roots (Figure 3). Soft tissue and hard tissue examination shows a complete unilateral cleft of the soft palate, the hard palate, the alveolar ridge and the lip which falls under Veau Classification type III. Multiple dental anomalies noted in the patient which are: primary and permanent lateral incisor are absent on the side of the cleft,

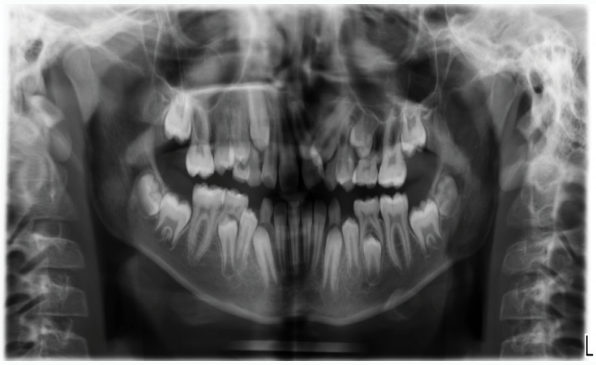

Figure 1: Patient's panoramic radiograph.

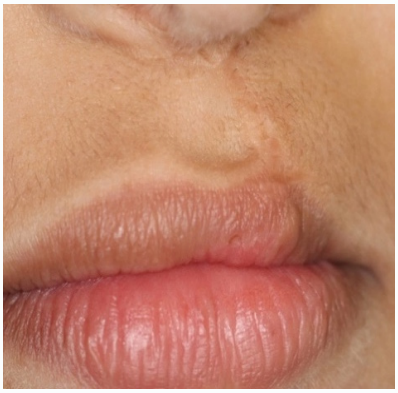

Figure 2: Patient after cleft lip repair.

unilateral left anterior and posterior cross bite from tooth number 21-26, multiple ectopic remaining roots in the palate and buccal gingiva, permanent incisor that erupted adjacent to the cleft have deficiency of supporting alveolar bone and is in rotated position (Figures 1 and 4).

Upon comprehensive orthodontic examination, the patient has skeletal class III malocclusion with prognathic mandible. In addition,

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patient has maxillary constriction and hyperdivergent mandible. There is significant crowding of maxillary teeth with net space of -11 mm.

Discussion

Cleft lip and palate vary widely in their clinical presentations and managing such condition requires the intervention of different health care providers including oral surgeon, plastic surgeon, orthodontist, general dentist, otolaryngologist, speech therapist and a psychologist for the well-being of the patient. Clinical features associated with this condition are: increased incidence of supernumerary teeth, absence of teeth along the area of the cleft most frequently being the primary or permanent lateral incisors, and also increased incidence of congenitally missing premolars. Additional clinical features, includes ectopic primary lateral incisors and permanent canines located palatally, prenatal teeth usually being maxillary central incisors noticed in patients with complete unilateral or bilateral cleft palate. Moreover, some of the possible clinical presentations are deficiency of the alveolar bone around the roots of permanent teeth that erupt adjacent to the cleft leading to increased susceptibility of premature teeth loss, having future periodontal disease or receiving orthodontic appliance which will further affect this condition. Frequently permanent central incisors erupt in rotated/ tilted position within the area adjacent to the cleft effecting axial root inclination.

Two-thirds of unilateral cleft lip or cleft lip and palate happen on the left side and there might be small increase in incidence of these conditions with increased parental age [7-9].

Clinical management is divided into four stages depending on the child's dental development:

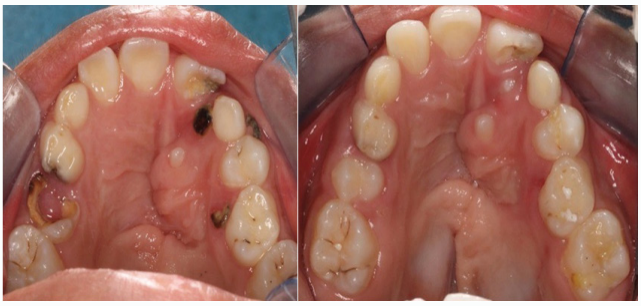

Figure 3: Patient's intraoral pictures.

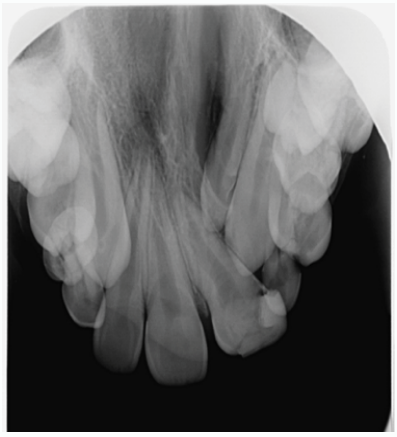

Figure 4: Patient's upper occlusal.

1. Stage I (Maxillary Orthopedic Stage: Birth to 18 Months)
2. Stage II (Primary Dentition Stage: 18 Months to 5 Years of Age)
3. Stage III (Late Primary or Mixed Dentition Stage: 6 to 10 or 11 Years of Age)
4. Stage IV (Permanent Dentition Stage: 12 to 18 Years of Age)

Managing cleft lip and palate involves obturation and tissue molding for dealing with feeding difficulties, orthopedic appliances, bone grafting, surgical lip repair and palatal repair. In order to treat this case, palatal expansion using removable appliance (Hyrax) will be performed to make adequate space for the bone grafting procedure, followed by orthodontic fixed appliance to align the dentition.

Conclusion

The present case reinforces the importance of bone grafting for cleft palate which requires a multidisciplinary well-timed approach in order to improve patient's quality of life.

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