

CASE REPORT

CLEFT PALATE TREATMENT MODIFICATION: A CASE REPORT

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ABSTRACT

The present case report aims at providing a modified treatment option for the closure of cleft palate after a failed surgery in an 11 year old. Clefts of the lip and palate (CLAP) are the most common congenital deformities involving the orofacial region. The cleft palate condition is inherited as an autosomal dominant condition. The following case highlights one of the treatment aspects of such individuals in which surgical correction has not been successful due to growth and development delays and abnormalities.

Keywords: Cleft palate, obturator, associated malformations, congenital.

INTRODUCTION

Dentofacial appearance has a drastic effect on the physical and social attractiveness. One such abnormality listed in literature is that of individuals with cleft lip and palate. Clefts of the palate (both primary and secondary) are by far the most frequent malformations of the head and neck found congenitally. It is accounted that genetics and the environment as a whole play an equal role in the development of cleft lip and palate.

Out of the population affected by cleft lip and palate, the occurrence of such deformity is varied; for instance, cleft lip and palate account for 46%, whereas cleft palate alone is as low as 33%. It is also studied and documented that cleft lips, either bilateral or unilateral, are mostly found to be present in association with cleft palate. Clefts seen as unilateral or bilateral occur commonly and are frequently observed on the left side as compared to the right. This finding is similar to studies reported by Kaduna (66.4%)¹ and Lagos (54.9%)², who conducted

their research in the Nigerian population. The reason being- the delayed development of the facial artery in the human fetus on the left side in comparison with the right.³ Females are predominantly seen with cleft palate alone, while on the other hand, the male population is associated with cleft lip and palate abnormality. Also, in comparison to the community in the western countries, the occurrence of CLP cases are twice as high in the Asians and approximately half as frequent in African Americans. Cleft palate alone does not come under this racial diversity and has an occurrence of 0.5 per 1000 live births.⁴

In India, there is a considerable increase in infants born every year with cleft lip & palate. The number shows 28,600, to be precise, which implies that out of the total infants born every day, 78 are affected or, in other words, three infants with clefts are born every hour.⁵

CASE REPORT

An 11- year old male patient reported with a chief complaint of an opening in the midline of the upper jaw for 15 days, causing him difficulty in eating. According to the medical history, as revealed by the parents, the child had undergone primary closure of the cleft at 13 months of age at a Government Hospital in Bihar. The surgery was carried out in two phases, following which the total closure was attained when the child was two years old.

History of present illness revealed the congenital presence of cleft palate, which had been surgically treated for the second time, 20 days before the patient reported to the clinic. The closure stayed for five days, after which it gradually started to open up again, leading to a failure in the proper approximation of the cleft.

A thorough extraoral examination revealed no relevant findings; however, on intraoral examination, a cleft was noted in the palate extending 6 mm behind the incisive papilla upto the junction between the hard and soft palate. Apart from this, the patient had multiple decayed teeth and also observed was the presence of ankyloglossia. Several missing teeth, mostly the lower and upper anterior teeth, were noted.

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Intraoral examination images:



- A provisional diagnosis of a complete cleft palate was made. Orthopantomograph (OPG) was the investigation done to confirm the multiple congenitally missing teeth.
- OPG:



- OPG findings revealed the absence of many permanent tooth buds and insufficient root lengths of the primary teeth.

Hence, fabrication of a modified obturator with the replacement of anterior missing teeth for the maxilla and a removable functional prosthesis for the mandible along with the restorations of the decayed teeth was formulated as the treatment plan.

The results were observed after three months during which the patient was motivated for the use of the prosthesis through regular follow up visits. It was evaluated that there was an increase in body weight, and the appetite of the child also improved after the first three months of wearing the prosthesis.

Furthermore, the child's parents were encouraging for the maintenance of good oral health.

The final prostheses delivered:



Associated Syndromes:

SYNDROME	STRIKING FEATURES	RELATIVE FREQUENCY OF CLEFT PALATE	ETIOLOGY
Van der Woude syndrome	Lip pits	common	Autosomal dominant
Rapp Hodgkin syndrome	Hypohydrosis, thin wiry hair, dystrophic nails	common	Autosomal dominant
Apert syndrome	Craniosynostosis, ocular hypertelorism, proptosis, mental deficiency	common	Autosomal dominant
Donlan syndrome	Thin skin, eczema, dental hypoplasia, micrognathia, growth failure, pancreatic insufficiency	common	Autosomal recessive
Stickler syndrome	Flat midface, myopia, retinal detachment, prominent joints	common	Autosomal dominant
Treacher Collins syndrome	downslanting palpebral fissures, micrognathia	common	Autosomal dominant
Bechwith- weidemann syndrome	Macroglossia, neonatal hypoglycemia, gigantism	rare	Familial instances
Pierre robin syndrome	Micrognathia, glossoptosis, cleft palate	Very common	Autosomal dominant
Crouzon syndrome	Midfacial hypoplasia, short upper lip, beak-like nose, hypertelorism	common	Autosomal dominant
Hemifacial microsomia	Facial asymmetry, malar hypoplasia, muscular dysfunction of the tongue, middle ear anomalies	Very common	Deficiency in 1 st and 2 nd brachial arches
Shprintzen syndrome	Narrow palpebral fissures, malar deficiencies, long face, retruded chin, malocclusions	common	Autosomal dominant

DISCUSSION

CLP individuals require a well-coordinated approach from multiple specialties to optimize the treatment outcome. Cleft palate surgeries are usually carried out before 18 months of age. Such individuals may need additional surgeries, dental and orthodontic care, and speech therapy as well as they get older.

In previous studies, as noted in the literature, there are connections observed between severe clefts and additional malformations (Milerad et al., 1997).⁶ A complete cleft lip and palate was associated with other defects in 35% of the cases, like a lower average birth weight among newborns (Rintala and Gylling, 1967)⁷; the week of birth as a mean value, ventricular septal defects, typical facies, and learning disabilities

(Shprintzen RJ et al.;1978)⁸ to list a few. Uniquely as in the present case, an associated malformation of tongue-tie (ankyloglossia) was observed.

The tooth defects seen in such individuals are supernumerary teeth, congenitally missing teeth, T-cingulum, peg-shaped teeth, thick curved hypoplastic incisors, typically formed lateral incisors are usually absent and replaced by abnormally shaped supernumerary teeth which erupt at birth (natal teeth), delayed eruption pattern of permanent teeth, isolated enamel developmental defects (in un-operated cases), enamel defects also in - deciduous cuspids and molars, first permanent molars, feeding difficulties. One similar finding from the present matter relating to the previous studies was congenitally missing teeth.

The ideology of the treatment of such cases lies in a multidisciplinary team, aimed at treating cleft-related problems from birth through adulthood. The members typically constituting the cleft team include an audiologist, pediatric dentist, geneticist, nurse, nutritionist/dietician, psychologist, plastic surgeon, oral surgeon, orthodontist, otolaryngologist, pediatrician, social worker, and speech pathologist¹.

Among these, a pedodontist and an orthodontist are two essential members of the team working in collaboration with each other. Their key responsibilities include the fabrication of a feeding plate, pre-surgical orthopedic treatment for the baby, monitoring the growth and development regularly. They together explain about the oral health care modalities and also assist in the guidance of occlusion as well as facial growth maintenance.

CONCLUSION

Children with cleft palate display subtle psychological differences about social inhibitions and concerns with appearances; hence such individuals should be treated with utmost care. Maximum benefit is achieved from professional guidance, support, and peer group interactions to serve as a hedge against social isolation and the feeling of marginality.

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