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Case Report

Functional And Esthetic Rehabilitation Of Cleft Palate Patient With Fixed Prosthodontic Therapy: A Case Report

Neetu Singh[1], Narendra Kumar[2] , Kunwarjeet Singh[3] , Anant sinha[4], Ankita Agarwal[5], Parul Gautam Gandhi[6]

[1,5,6] PG Student, Department of prosthodontics , IDST, Modinagar, Gaziabad
[2]Head, Department of prosthodontics, IDST, Modinagar, Gaziabad
[3]Professor, Department of prosthodontics , IDST, Modinagar, Gaziabad
[4] Plastic surgeon, Devkamal Hospital, Ranchi

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ABSTRACT

The oral rehabilitation of individuals with cleft lip and palate is directly related to the severity of anatomical and functional alterations determined by the malformation and the age at the treatment onset. Rehabilitation of patients with cleft lip and palate involves a multidisciplinary approach involving surgeons, orthodontists, prosthodontists, psychologist and speech therapist.[1] Patients with cleft lip and palate present with multiple challenges to the prosthodontist. Some of them include decayed, carious, multiple missing, malposed and many times teeth are erupted in palate. This clinical report presents the rehabilitation of surgically treated cleft with fixed prosthodontic therapy after correction of collapsed palate with palatal expansion. The patient presented with 4 unit PFM crown after extraction of palatal erupted lateral incisor.

Introduction

Clefts of the lip and palate (CLP) are commonly encountered congenital anomalies, affecting one in seven hundred live births.[2] Cleft lip and cleft palate is an opening in the lip or palate and is a common disfiguring birth defect where two sides of the maxilla are not able to fuse into one structure. Their prevalence among general population depends on race, ethnicity, geographic and socioeconomic factors. It is present in around 1:500 to 1:2500 live births, among which cleft lip occurs in 20-30%,cleft palate in 30-45% and both cleft lip and palate in about 35-50%.[3,4] and often result in severe functional deficiency on the patient's chewing abilities, appearance and ability to speak.[5]

Case report

A 17 years old female patient was referred to hospital for treatment. On examination, the patient revealed angle class III dental malocclusion with collapsed palate, posterior crossbite, anterior crowding, right lateral incisor was palatally erupted and left lateral incisor was missing (fig.1). The medical history

* *Corresponding author:* Dr. Neetu Singh, PG Student, Department of prosthodontics , IDST, Modinagar, Gaziabad.Email: drneetushahi@yahoo.co.in

Fig.1 Missing lateral incisor

Fig. 2 Palatal fistula remained after 1st surgery

Fig. 3 Palatal expansion was done, then extraction of lateral incisor tooth

revealed that she had undergone surgeries involving cleft lip and palate, cleft lip was corrected but there was small fistula left in cleft (fig.2). She suffered from esthetic inadequacy and chewing inability. She was not happy because of her look and socially it was affecting her. Maxillary expansion was done first. The expander was a custom made orthodontic appliance with Adams clasp on molar (fig.3). The activation period was 6 month and the patient was regular during activation period. Once expansion was obtained, activation of screw was stopped and left appliance in place for 3 months. The palatally erupted lateral incisor was extracted under local anaesthesia. PFM (porcelain fused to metal) was planned as esthetic was more important. Teeth preparation was done on 11, 21 and

Fig. 4 Lateral view, tooth preparation was done

Fig.5 lateral view with PFM crown

23 because there was overlapping of 11 on 21 and 22 was missing (fig.4). Try in was done and final 4 unit PFM crown was delivered (fig.6). Satisfactory function and esthetics was established. Patient was advised for orthodontic and orthognathic treatment

Discussion

Improved knowledge of craniofacial growth and development, as well as surgical and orthodontic treatment, has resulted in cleft patients receiving superior care in shorter time period.[6] The most common prosthodontic treatment for cleft palate patients is replacement of congenitally missing anterior teeth, which is generally performed after orthodontic treatment for alignment of the remaining teeth. Cleft palate patients who have not received orthodontic realignment and grafting procedures are the ones who present greatest prosthodontic challenge.[7]Various factors need to be considered when designing a long span FPD across the arch. They include appropriate choice of dental materials, obtaining optimal parallelism of the abutment teeth for

path of draw, well sealed margins prevents caries and periodontal disease of abutment tooth, inadequate support for porcelain may lead to fracture.

Very few articles in the literature have reported on the methods and techniques of fixed prosthetic rehabilitation in bilateral cleft lip and palate patients. They include traditional metal ceramic FPD,[8-11] metal-resin FPD, and telescopic FPD supported by reinforced all-ceramic primary copings.[12] Although there is insufficient evidence to support long-span FPD using all-ceramic materials, traditional metal-ceramic FPD has along clinical track record to be used successfully in cleft palate patients.[13–15] While choosing alloys for long-span metal-ceramic FPD, it is important for the clinician to understand the properties of various alloys and its long-term performance in the oral cavity.[16,17]

Conclusion

This clinical report described the esthetic and functional rehabilitation of cleft palate patient with fixed prosthodontic therapy. Prosthodontic therapy involved fabrication of 4 unit PFM crown. As cleft patient require lifelong prosthodontic follow up and maintenance to avoid future complication.

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