

Restoring Smile of Cleft Palate Patient.

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Abstract

A common congenital defect called cleft lip and palate (CLP) affects one in every 800 live babies. For these patients, prosthetic restoration of the anterior maxilla is crucial. This case report describes smile restoration of a 28-year-old female who was surgically operated for unilateral cleft lip and palate.

Maxillary left central incisor was missing with the presence of peg lateral. Maxillary teeth didn't follow the lower lip's curve, and the dental midline didn't match the facial midline which resulted in unaesthetic smile.

Since a wide edentulous space is present, it was decided to fabricate a five unit Fixed partial denture to restore the smile of the patient.

Keywords: Cleft lip, Cleft palate, fixed partial denture, smile restoration, peg lateral, congenital defect.

Introduction

Cleft lip and palate (CLP), which can cause problems with deglutination, speech, growth, and aesthetic deformities in addition to oral anomalies, is the second most common congenital condition. Managing CLP patients is difficult for clinicians in the medical and dental fields.

Additionally, CLP patients typically have psychological problems.^[1]

Alveolar bone grafting is essential for the dental Rehabilitation of CLP patients because of their congenital abnormalities. Alveolar bone grafting, however, is

occasionally either not done or is unsuccessful. Because of the large size of the lesion, alveolar bone transplantation may not be appropriate for some other patients.[2] For CLP patients, replacing missing teeth is typically a step in the oral rehabilitation process.

Patients with unilateral and bilateral cleft lip and palate have a variety of treatment options available after completing orthodontic therapy, including conventional multi-unit fixed partial dentures (FPD), resin composite veneered multi-unit FPD, fiber-reinforced composite resin-bonded FPD, conventional removable partial dentures (RPD), RPD with extra coronal attachment, and combinations of fixed and removable partial dentures. [3]

The prosthodontist must decide whether to use a fixed partial denture (conventionally supported or implant supported) or a removable partial denture in this situation.

Case description

A 28-year-old woman was referred from our university's department of oral surgery to the department of prosthodontics and crown & Bridge.

The patient had undergone numerous surgical procedures for a cleft lip and palate, coordinated by the orthodontics and surgery departments, starting when she was 4 years old.

Numerous aesthetic issues were present in this patient, which were made worse by the fact that orthodontic and surgical procedures were contraindicated. Peg lateral, missing central incisor and a wide edentulous gap were among the Esthetic issues.

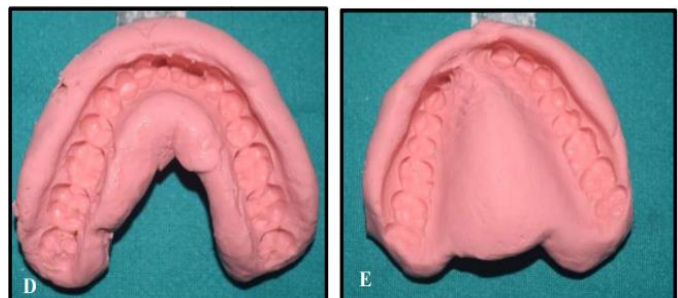
Anterior tooth's gingival levels were asymmetrical, the maxillary teeth didn't follow the lower lip's curve, and the dental midline didn't match the facial midline (Fig-1)



Figure 1: (A) Extraoral view, (B) Intraoral frontal view, (C) Intraoral occlusal view

Our aim was to restore missing 21 and 22. A wide edentulous space is present so instead of 2 teeth we had to replace 3 teeth, it was decided to fabricate a five-unit Fixed partial denture. Root canal treatment of right central incisor was advised to the patient.

Diagnostic impression was made and diagnostic mock-up was prepared. (Fig-2).



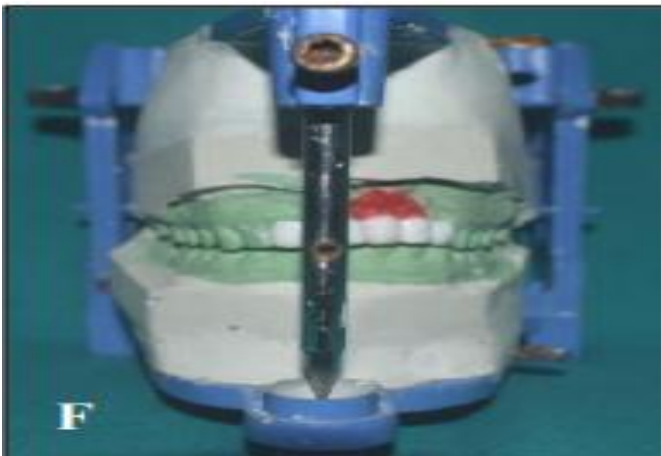


Figure 2 (D): Maxillary Diagnostic impression, (E) Mandibular Diagnostic Impression, (F) wax mockup. After successful endodontic treatment of right central incisor, Teeth preparation was done wrt 11,22,23. Retraction was done and Final impression was made with addition silicone and light body.



Figure 3: (G) Retraction (H) Final impression. Immediate temporization was done to confirm the improved smile. Utilizing both Vita Classic and Vita 3D Master shade guides, the tooth as well as gingival shade selection was done and all the information was sent to

the laboratory for fabrication of 5-unit zirconia fixed prosthesis [6-10] (Fig-4)



Figure 4: Temporization (A) Occlusal View, (B) Frontal view.

Thereafter when the patient was completely satisfied with the Esthetic outcome, final cementation of the prosthesis was done by dual cure resin cement and centric as well as eccentric occlusion was verified (Fig Thereafter patient operatively (Fig-6).



Figure 5: (K) unit zirconia FPD, (L) Frontal view with FPD, (M) Left Lateral View, (N) Right Lateral View.



Figure 6: (O) Pre-Operative View (P) Post Operative View.

Discussion

For those with congenital and craniofacial abnormalities, maxillofacial prosthesis treatment should ideally evaluate any potential psychological effects of these defects in addition to correcting physical and functional deficiencies.

Unknown teratogens, Infection agents (viruses), psychological stress, malnutrition and radiation exposure during pregnancy, psychological stress, and inheritance are some potential Causes of cleft lip and palate.

For CLP, patients with grafted alveolar clefts, endosseous implants offer a number of advantages, but two in particular stand out: protection of tooth structure in nearby, healthy teeth and the reduction of bone resorption IN Grafts. Even though secondary bone grafting has a number of benefits, there is debate regarding when it Should be done in the early phases of mixed dentition.

RPDs should be provided in particular to patients who have tissue deficiency, many fistulae, soft palate malfunction, or uncoordinated nasopharyngeal sphincter movement that could lead to hyper nasal speech. RPDs, in contrast to FPDs, can also provide good aesthetics, prevent substantial hygiene problems, and labial support deficiencies when there is vertical bone loss in the edentulous anterior region. Meşe and Ozdemir performed treatment for a cleft palate patient, which involved the use of a removable partial denture.[11] However patient satisfaction with RPDs declines noticeably as people age. Its removable architecture is typically criticised for emphasising its artificial nature.

Patients with cleft palate frequently have congenitally absent anterior teeth. Although the canines and central incisors may also be affected, the lateral incisors are the most usually missing teeth in unilateral or bilateral clefts. These teeth may not be present or they may be

positioned improperly. In general, teeth next to clefts have inadequate bone support.[12] Similar findings supported the present case as left central incisor was missing and peg lateral was present and due minimal bone support invasive procedures like bone grafting, implant placement as well as orthodontic treatment was contraindicated.

Also by altering the teeth preparation and employing pink porcelain helped in the restoration of the missing soft tissue and the rearrangement of the teeth. When compared to other intricate and time-consuming treatments, this treatment was conservative. Additionally, when compared to other treatments, conservative procedures have a higher chance of success in such circumstances (e.g., surgical or orthodontic)

Conclusion

Often, treating people with cleft lip and palate involves an interdisciplinary strategy that includes at least medical and dental professionals.

Speech therapists should provide the individual with suitable aesthetic and functional conditions.

One of the final steps of treatment, following growth completion procedures, is the Reha bilitation and prosthetic care of people with cleft lip and palate. In addition to the individual's expectations, the type of prosthesis should be recommended based on each person's needs, dental and overall health, and expectations.

Considering recent developments in dental implants and bone grafting, traditional prosthodontic rehabilitation is still a vital part of the treatment of people with cleft lip and palate. The patient's mental condition was stabilised by the treatment plan, which also significantly improved the patient's masticatory and speech functions.

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