

Management of adult patient with congenital alveolar, hard and soft palate defect with obturators cum speech aid prosthesis- A case report

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Abstract

In maxillofacial prosthetics the clinician may have the responsibility for reestablishing palatopharyngeal integrity to provide the potential for acceptable speech. This case report describes the technique of fabrication of obturators cum speech aid prosthesis for adult patient with cleft involving median anterior alveolar segment, medial hard palate and complete soft palate defect. Objective of this treatment procedure was to provide the ability to control nasal emission during speech and to prevent the leakage of material into the nasal passage during the deglutition.

Keyword: Cleft palate, Cleft lip, Obturator, Prosthodontic Management.

Introduction

Patient with acquired defect or congenital malformation of the soft palate may exhibit excessive nasal resonance because they are unable to control and divert sufficient airflow into the oral cavity without surgical and/or prosthodontic intervention. Resonance disturbances manifest as excessive nasal resonance, nasality or insufficient nasal resonance.

Case Report

A 50 yrs old male patient reported to maxillofacial department with chief complaint of loose ill-fitting maxillary prosthesis and nasal speech. On extraoral examination scar on lip of surgical repair of cleft lip seen and patient was wearing hearing aid. On intraoral examination there was cleft extending from alveolus, middle of hard palate and soft palate, there was missing right central incisor tooth in the area of alveolus cleft, root piece of left central incisor, and badly carious right canine and first premolar (Fig.1). On examination diagnosis was made it was case of cleft palate with palatal deficiencies. Treatment plan was decided to scaling and polishing of teeth, extraction of root piece of badly carious canine and first premolar and fabrication of obturators cum speech prosthesis. Cast partial denture has better retention and stability as compare to acrylic partial denture so cast partial denture was planned. All required pre-prosthetic surgery was done (Fig.2) and primary impression was made in alginate impression material(imprint) with blocking of defect with gauze piece to avoid flowing of alginate impression material in nasal cavity and throat. Impression was poured in dental stone and cast was fabricated, surveying was done of primary cast, and cast partial denture design was planned, complete palate maxillary major connector with posterior extension for speech prosthesis was planned, embrature clasp on first and second molar, RPI clasp on right second premolar,

I bar clasp on left canine. Final impression was made in alginate impression material (Imprint) (Fig.3). Cast partial denture was fabricated and metal try in was done (Fig.4), posterior portion was recorded by placing warm low fusing impression compound on posterior extension of cast partial denture the patient was instructed to move head in a circular manner from side to side, to extend his head as far forward and back as possible, and to speak and swallow. These movements activate the remaining palatopharyngeal musculature and shape the modeling plastic.

As described previously, palatopharyngeal closure varies with head position and activity (speech and swallowing). Since swallowing precipitates a more forceful closure, it is performed at the end of the sequence to avoid under extension of obturators. The activated pharyngeal musculature will displace the excess modeling plastic superiorly and inferiorly and these excess was trimmed with sharp scalpel. After molding process was completed, the patient was asked to speak, to swallow, and to breathe through the nostril to test the effectiveness of the formed obturators. After confirming the position and counters of obturators was satisfactory, all extensions were reduced approximately 1mm with sharp scalpel. A tissue conditioner was added to the obturators and placed in the mouth (Fig.5). The function activating the palatopharyngeal musculature are repeated to reestablish the contours of obturators. The obturators prosthesis was left in the mouth for approximate 15 minutes and the previously described functions were repeated several times. The prosthesis was removed, the prosthesis was checked for underextension and overextension and corrected and replaced in mouth for an extended period 2 hour, the patient was instructed to wear the prosthesis without removal and encouraged to speak, swallow and perform the movement previously described. The obturator was removed from mouth and placed on altered cast and

processed in customary manner with heat activated clear methyl methacrylate. Following processing, gross excess was removed. The oral surface of obturators kept concave to provide adequate space for tongue. The superior surface was convex and well-polished to facilitate deflection of nasal secretion into the oropharynx and also lateral margin of obturators was also polished to improve hygiene and the deflection of secretion (Fig.6), Final position and contour of obturators was corrected with prosthesis in mouth with pressure indicating paste. The obturators was polished and patient was scheduled for subsequent adjustment appointment. Method of inserting and removing the prosthesis and its care were demonstrated to the patient.



Fig. 1a: Preoperative frontal view



Fig. 1b: Preoperative Occlusal view



Fig. 2: After Preprosthetic Treatment



Fig. 3: Final impression for cast Partial framework



Fig. 4: Try in of cast partial framework



Fig. 5: Functional impression with tissue conditioner



Fig. 6: Final prosthesis in Mouth



Fig. 7: Preoperative Photograph



Fig. 7: Post-operative Photograph

Discussion

Most cleft palate patient have not developed normal speech patterns, making it improbable that normal speech will be restored immediately with adequate obturation .Surgical and/or prosthodontic treatment may provide the patient with the capability of controlling nasal air emission and may restore resonance balance, but articulatory disorder will remain ,speech therapy may be necessary to improve speech

Conclusion

Prosthetic therapy aids the patients in developing normal speech, promoting deglutition and mastication and in separating the oral and nasal cavities. The results not only enhance the esthetics, but can also be instrumental in the psychological and social acceptance of the cleft palate patients. There are other complex cases of cleft palate involving function, aesthetics and phonetics that require a more invasive restorative intervention. However, an alternative conservative treatment can be sought in conventional prostheses for patients who choose not to undergo surgery.

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