

Presurgical Modulation for Patient Counselling by Temporary Maxillofacial Prosthesis for Cleft Palate- A Unique Approach (Case Study)

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Case Report

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Abstract: Prosthetic intervention with pre-surgical maxillary obturator is a useful tool to counsel the patient, their parents for the need of the surgery and also to evaluate the functional improvement of oral region after the surgery. In adult patients, already habituated with their malformed maxilla, so it is very important for the patient and her/his guardians to understand the post-surgical status, to choose surgery as the best course of treatment.

Keywords: Temporary Obturator, Pre-surgical Management, Patient Counselling.

INTRODUCTION

The maxilla plays an important role in functions and aesthetics [1]. The palate separates the oral cavity from the nasal fossa and maxilla gives stability to the mandible during occlusion, enabling the pharyngeal muscles to initiate the act of swallowing [1]. Incomplete closure or formation of maxillary processes during development causes Cleft Palate-one of the commonest congenital/developmental defects in human species [5]. The maxillary defect causes a nasal resonance, making speech unappreciable and unintelligible. There are also compromised physiologic functions like Mastication and Deglutition (swallowing), especially in the child. Patients who require treatment for their mal-developed maxilla or any other oro-facial defects may suffer through psychological traumatic conditions and sometimes get socially isolated due to aesthetic problems. Due to compromised speaking ability, some patients develop introvert personality, stress and if that stress by social situations which are evaluated as potentially uncontrollable or exceeding our resources for coping [10] that may cause a repulsive action on patient's mind to take the proper treatment.

Maxillofacial prosthetics is a subspecialty dedicated to offering a treatment option for patients afflicted with a defect of the head and neck or those with defects of congenital origin. Interdisciplinary coordination of treatment of head and neck defects starts with comprehensive consultation from all members of the team [4]. A proper multi-speciality team is required to treat this type of cases, where Dental professional / maxillofacial prosthodontist may give the ideal non-surgical treatment plan to restore the normal functions as they can also take the primary care of oral health in Pre and Post-Surgical phases. In non-surgical treatment Obturators are advised (L. Obturare- to stop up)[2] is a disc or plate natural or artificial which closes an opening or defect of maxilla as a result of cleft palate or partial or total removal of the maxilla for a tumour mass[6]. It was already published in some article that patient's anxiety can be managed by psychological

preparation and provision of correct information that addresses identified factors may help in reducing preoperative anxiety [7], and lack of information related to possible pre-operation and post-operation conditions increases the anxiety level of patient [3].

This paper is solely focused on an unique approach to boost the self-esteem of the sensitive patients and their parents to understand the need of the surgery, qualitative benefits of the post-surgical outcomes and control the pre-operative anxiety of the patient by Counsel and an elaborate in vivo presentation to the patient and her parents with a presurgical temporary obturator made up of cold/self-cure rapid repair material. The patient will get a vivid idea about the importance of the surgical repair and accept the treatment completely overcoming the common fear and apprehension of surgery after weighing the benefits.

CASE REPORT

A 18 year old otherwise healthy female patient brought to the Future of Smile Haldia mission, October, 2017, for the correction of her maxillary acquired defect, but the patient party was looking for non-surgical procedure. Extra oral examination revealed deviated and depressed nasal structure on left side and Intra oral examination revealed complete cleft palate. After presurgical assessment the patient was advised for surgical correction of her lip and palate.

Patient was not prepared for the surgery at that moment, hence a final treatment plan was given to her, which was educating and counselling her about the procedure by an elaborate in vivo presentation to the patient and her parents with a pre-surgical temporary obturator made up of cold cure rapid repair material to understand the proper benefits of the surgery and followed by surgically repair for this acquired maxillary defect by microvascular free flap[2].



Fig-1: Intra-oral preoperative picture of the patient showing complete cleft palate

METHOD

There are several ways of fabricating an obturator, it can be done in heat cured acrylic[8,9], or injection moulding systems ,microwave ,or visible light cured resins. They can also be 3-D printed in present times [13].

Most processes start with impression making of some kind, with either irreversible hydrocolloids, fabrication of custom trays and elastomeric impressions, or else some kind of intraoral scanning or ct scanning[12] to obtain the intra oral anatomy of each patient so as to process a well-adapted, bio functional obturator plate, comfortable for the patient to wear.

In our case, the obturator was to serve only a temporary purpose with the express function of demonstrating to the patient about the benefits of a closed palate, hence a decision was made to fabricate with rapid/self-cure acrylic resin.

Upper and Lower dental arch impressions are taken with Irreversible hydrocolloid Alginate, and the Impressions were poured with Type III Gypsum (Dental Stone) and the casts were obtained. During the impression process, a wet sterile gauge piece was inserted in the cleft area to avoid deep undercuts and to prevent alginate from flowing into the maxillary sinus and nose region



Fig-2: Impression of the Cleft Maxilla



Fig-3: Cast of Maxilla



Fig-4: C clasps are in

After making the cast, final mock-up was done and all demarcation were done for guideline as extension of the obturator plate. C- Clasps were planned and placed w.r.t. 24, 34 and 37 (FDI numbering system used) for retention of the prosthesis.

Cold cure material, as planned before was used with direct pouring method after coating the working cast with separating media (cold mould seal). Finally the Obturator was finished with gross trimming and polished by fine abrasives.



Fig-3: Temporary Obturator with retainer clasps

The temporary obturator was finally inserted and adapted into the patient's mouth and the patient was

recalled after 24 hours for check-up and subsequently after 2 days.



Fig-4: Intra-Oral view with the Temporary Obturator

DISCUSSION

In this present case, use of the temporary maxillofacial prosthesis helped the patient to understand the post-surgical outcomes schematically. 1) Enhancing her speech by proper pronunciation, 2) Improved deglutition.

We managed to reduce the preoperative anxiety, subsequently redirecting the patient to accept the surgical correction by understanding the proper long term benefits.

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CONFLICTS OF INTEREST

There is no area of conflicts of interest.

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