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Step by Step Procedure for Impression Making for Fabrication of a Definitive Obturator

Abstract

Although developmental defects afford ample time for behavioral adjustments to be made, sudden traumatic and surgical defects may diminish the patient's quality of life. In a society that values appearance, those who exhibit malformed parts of the face, neck and oral cavity may become less socially acceptable. Rehabilitation of the maxillofacial patient into society requires a broad knowledge of prosthodontics, plus the capacity for compassionate patient management.

Key Words

Regeneration; PRP; periodontal surgeries

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PRIMARY OBJECTIVES

In the total rehabilitation of the maxillectomy patient the maxillofacial - prosthodontist has two primary objectives:[1]

1. To restore the functions of mastication, deglutition and speech
2. To achieve normal oro - facial appearance.

Impression Making

The impression material remains the vital link between the skills of the clinical dentist and those of the dental technician.

- An essential part of the planning process is to decide with the surgeon features that need to be incorporated.
- Mostly the patients existing denture can be used.

Definitive Obturator

- A definitive obturator is one prepared at the completion of active treatment when the tissues have stabilized.
- Almost invariably it is made in combination with a denture.
- Before progressing to the various impression procedures, it is important to be reminded of the basic qualities of a successful prosthesis which includes[2]
  1. Good support
  2. Retention
  3. Stability
  4. The obturator may be displaced superiorly with the stress of mastication and will tend to drop without occlusal contact.

Factors Affecting the Degree of Movement:[3]

1. Number & position of teeth
2. Size & configuration of the defect
3. Amount & contour of the remaining palatal shelf
4. Height of the residual alveolar ridge[4]
5. Size, contour & lining mucosa of the defect
6. Availability of undercuts

BASIC PRINCIPLES AND CONCEPTS

The making of impressions for diagnostic casts may provide useful knowledge about the patient, including unusual sensitivities of the mucosa structures, the tendency toward gagging, tolerance to oral procedures, and favorable and unfavorable tongue movements.

Impression Techniques

- Impression procedures for intraoral defects are influenced by the character of the remaining tissues.
- Before the impression procedure is started, a concept of the obturator form should be developed.[5]
- This can be determined by visual and digital examination and also from the diagnostic cast.
- The variables in the patient's pre – operative and post- operative oral anatomy should be


Fig. 1


Fig. 2


Fig. 3


Fig. 4


Fig. 5


Fig. 6


Fig. 7

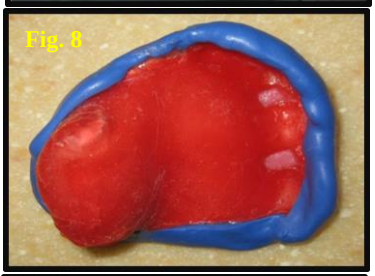
Fig. 8


Fig. 9

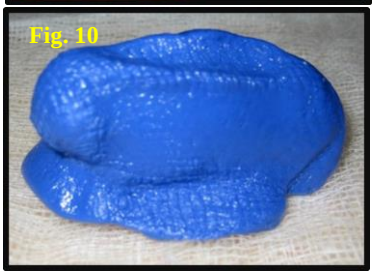
Fig. 10


Fig. 11


Fig. 12


Fig. 13

- be considered.[6]
- Any possible maxillary defects like incomplete palatal closures and fibrous bands with perforations into the maxilla, nose or sinuses should be looked for.
- They may occur in the labial vestibule, alveolar ridge, or hard or soft palate.
- The small defects should be blocked out with moist cotton or gauze.[7]
- The gauze or cotton should be lubricated with vaseline or petrolatum for easier insertion.
- Larger defects with gross undercuts should be packed with 4 x 4 inch gauze squares, it should be readily retrieved and they should be shoved into the defect.
- The prosthodontist acquires clinical judgment with regard to which areas need blocking out prior to impressions.

When in doubt about undercuts and impression removal, pack the defect.

Step by Step Procedure

- Preliminary impressions
- Primary cast
- Fabrication of special tray
- Final impression
- Obtaining the master cast

Preliminary Impressions

Material of choice - alginate or impression compound (Fig 1). Care should take to record the defect margins and depth of the defect. Material should not trap in the defect area.

Diagnostic Casts

Diagnostic cast was made with plaster of Paris in regular manner (Fig. 2).

Fabrication of Special Tray

Any undercuts in the primary cast should be blocked by using utility wax (Fig. 3). Wax spacer adapted on the cast including the defect area (Fig. 4). Tissue stoppers were included to help proper application of forces (Fig. 5). Special try was fabricated (Fig. 6).

Border Molding

- The hard palate is a static structure. Border molding its bony margins requires no special patient movements.
- Border molding the posterior and lateral area of a maxillectomy requires that the patient go through head and mandible movements.[8]

Movements to be Performed

The patient has to open and close the mouth, move the mandible from side to side, turn the head from side to side, place the chin down to the chest, move the head from side to side, and extends the head backward. Seating the tray:

- Non-surgical side - to be molded first as it ensures that the tray is reseated in a consistent manner when the surgical site is impressed.
- The tray should be obliquely directed against the remaining alveolar ridge and not against the midpalate.[9]
- Seating against the mid palate often causes the tray to rotate into the surgical site.

Border Molding

Special tray was checked in patient mouth and examined the space between the tray and tissues (Fig. 7). Tray adhesive was applied to increase the adhesion between the tray and additional silicone and border molding was performed (Fig. 8).

Final Impressions

Spacer was removed and wash impression was performed except in defect area. Putty material was mixed and secured with gauge piece and placed in patient defect area and all head moment are recorded (Fig. 9). After recording the defect area putty was attached to special tray (Fig. 10).

Master Casts

Master cast was poured by using dental stone.

Obtaining the Framework

Wax patron was adapted and used for fabrication of permanent prosthesis (Fig. 11).

DISCUSSION

Treating the maxillofacial patient is challenging and involve with knowledge about anatomy of the head and materials. Various methods are available for making of impression of oral cavity. One of the best techniques to make impression is to record the defect area and other oral tissue separately. This article shows the method of making two step impressions. This technique will help to record the all the details accurately without any difficulties. Care should take not to engage the undercuts of the nasal cavity and record all the borders of the defect area

SUMMARY

1. Impression procedures for intra oral defects are influenced by the character of the remaining tissues.
2. Impressions for diagnostic casts may require recording structures not normally included in impressions for conventional prosthodontic patients.
3. Because of their drying and irritating effects on oral mucosa, metallic oxide and plaster impression materials are contraindicated for many irradiated patients[10].
4. Usually, an impression material that can be physiologically molded is the best for making impressions.
5. Because of the lateral wall and the scar band of the maxillary resected patient are dynamic, functional impression materials may be needed for improved seal.

CONCLUSION

There are many individual presentations & varying challenges in supplying patient with prosthesis for palatal deficiency & the dentist has to be imaginative and innovative. As for any other successful treatment, the important feature is to be aware of the principles and stick to them.

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