

Rehabilitation of acquired maxillary defect: interim obturator prosthesis.

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Abstract

Restoration of acquired maxillary defects presents a great challenge to the clinician due to the anatomy and extent of the defect. Impression procedures and retention of the prosthesis is the most difficult part of prosthesis fabrication. This article describes the technique for the fabrication of an obturator prosthesis for a dentulous patient.

Key words: - Maxillary defect, obturator, interim prosthesis.

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Introduction

The most common causes of acquired maxillary defects include the epidermoid carcinomas, mesenchymal tumours, maxillary sinus carcinomas. The treatment includes extensive surgical intervention which leads to loss of whole or part of the hard palate.

The defect of the hard palate leads to nasal voice, masticatory inefficiency and fluid leakage into the nasal cavity. An obturator can successfully eliminate all these disabilities. Sometimes the extent of the defect and the undercuts makes the impression procedures a tedious task. Flexible and resilient materials can also be used in such cases as they easily engage the undercut region and serve as an excellent adjunct in prosthesis fabrication.^[1,2]

The retention of the prosthesis is achieved by extending the obturator into the defect. Greater depths are recorded in large maxillary defects so as to achieve a long lever arm which enhances stability and retention of the prosthesis. The remaining teeth should be

engaged to enhance the retention, stability and support.

Case report

A 42 year old male patient reported to the Department of Prosthodontics and crown & bridge, with a chief complaint of inability to eat food and difficulty in speech. History revealed that the patient had carcinoma of the maxillary bone for which it was operated and the bone was resected along with surrounding structures. Intraoral examination revealed an oro-nasal opening in the right side of the oral cavity. Opposite dentition was present from central incisor to second molar (Fig 1). An interim obturator prosthesis was planned for the patient and the following technique was used for the fabrication of the prosthesis.

Technique

1. Before taking the impression, the medial and anterior undercuts were blocked with a gauge piece lubricated with petrolatum, as these under cuts may engage the prosthesis (Fig 2). Also the impression

material may engage the undercut and break.

2. An accurate diagnostic cast is made. The undesirable undercuts are blocked with wax whereas the usable undercuts are used to aid in retention and stability.
3. A relief of two thickness of modelling wax sheet is provided and the tray is fabricated of acrylic resin which covers the defect as well as the remaining teeth.
4. The extension of the tray is verified in the mouth. Conventional border moulding technique is used to record the lateral extension as superiorly as possible on the resected side and then the soft palate extension is border moulded.
5. The posterolateral aspect is moulded by asking the patient to perform eccentric mandibular movements.
6. Several perforations are made for escape of impression material.
7. An irreversible hydrocolloid (alginate) is mixed and final impression is taken (Fig.3).
8. The master cast is poured and the obturator is constructed in heat cure acrylic resin.
9. During the flasking procedure wrought wire clasps are made on premolar and molar teeth which will aid in stability and retention of the prosthesis (Fig 4).
10. The superior surface of the obturator is made slightly convex and is polished well. This results in improved cleansibility and results in less friction (Fig 5).
11. The obturator was inserted into the patient's mouth and the occlusion was checked and verified (Fig 6,7).

Discussion

The rehabilitation of a maxillectomy patient may sometimes present as tedious problems to the clinician. Since, due to carcinoma some or all of the anatomical structures are resected. It presents with altered function of

remaining structures and difficulties in speech and mastication. This situation demands fabrication of an obturator prosthesis. The obturator aids in proper mastication and deglutition by preventing nasal regurgitation of food by creating a partition between the oral and nasal cavities but fails to restore speech to near normal level of the patient.^[3,4] However, a speech therapist proves to be helpful in improving speech after the fabrication of prosthesis.^[5] The speech can be assessed by evaluation by person known and unknown to the patient. Various speech tests such as nasoendoscopy can also be used for a detailed evaluation of speech.^[6] Other methods of speech evaluation are acoustic spectrogram and pressure flow technique.^[7,8] It is important to restore the form and function with an indiscernible prosthesis and to treat the psychological disorders of the patient.^[9]

Conclusion

After the interim obturator was finally inserted in the resected cavity a significant improvement in speech and masticatory function were observed in the patient. A complete rehabilitation in such cases requires a team approach which comprises of the patient, the dentist, a speech therapist and the parents/relatives of the patient. These patients require prosthetic rehabilitation as well as psychological support as most of the time such patients are depressed with their condition. It becomes a duty of the clinician to treat them emotionally as well as psychologically.

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FIGURES:



Fig. 1: Pre-Operative Intraoral

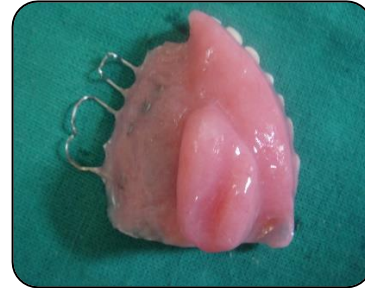


Fig. 4: Intaglio Surface

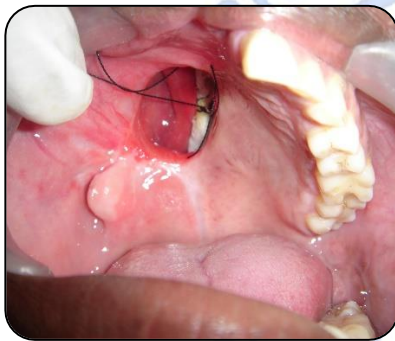


Fig. 2: Undercut block out



Fig. 5: Polished/Cameo Surface

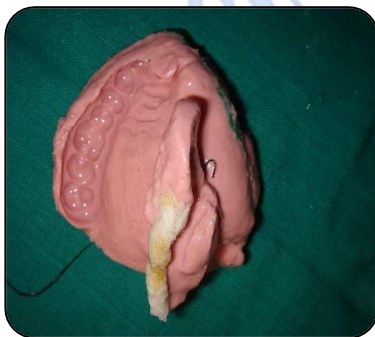


Fig. 3: Impression



Fig. 6: Post Operative Intraoral



Fig. 7: Prosthesis in Occlusion