

Immediate Surgical Obturator: Case Series

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ABSTRACT

Maxillary defects are created by surgical treatment of benign or malignant neoplasms, congenital malformation and by trauma. The size and location of the defects influence the degree of impairment and difficulty in prosthetic rehabilitation. Lack of support, retention, and stability are common prosthodontic treatment problems for patients who have had a maxillectomy. A prosthesis used to close a palatal defect in a dentate or edentulous mouth is referred to as an obturator.

The obturator prosthesis is used to restore masticatory function and improve speech, deglutition and cosmetics for maxillary defect patients. The use of the maxillary immediate surgical obturator prosthesis has become the standard of care for patients undergoing maxillectomies. A protocol of treatment is described that includes preoperative, operative, and postoperative guidelines that have yielded predictably successful results. The objectives of such treatment include support and protection for the surgical dressing, improvement of speech and deglutition, and a psychologic boost for the patient's self-image.

Key words: Maxillectomy, surgical obturator,

Introduction

Various maxillofacial defects cause facial disfigurement affecting the quality of life of the patient. Among all intraoral defects, maxillary defects should be considered the fore most common one which involves the communication between oral cavity and maxillary sinus or nasopharynx. Depending on their origin, they are divided into two groups. They can be congenital and acquired. Such defects vary as far as aetiology, location, and size are involved. The size of the defect may vary from small to massive, which include parts of hard and soft palate, alveolar bone, floor of nasal cavity, and maxillary sinus and should extend up to floor of orbit and zygomatic complex.

In general, such defects will be prosthodontically rehabilitated by prosthetic device known as *Obturator*. The obturator is a disc or plate, natural or artificial, that closes a gap or

defect of the maxilla as a result of a congenital disorder or partial or total removal of maxilla for neoplasm mass. The obturator can be of various types and designs depending on the defect to be rehabilitated. This article reviews various cases of immediate maxillary surgical obturator and their importance.

Treatment options for maxillary defects

The defect involving maxilla may be restored either by surgical correction with cosmetic surgery or by obturator prosthesis. The treatment with cosmetic surgery can provide higher results as aesthetic and performance are concerned. But in several cases, cosmetic surgery is also contraindicated due to advanced age of the patient, poor general health, very massive defect, and poor blood supply because of radiotherapy. In such

cases, a prosthetist may be called upon to treat the patient. The obturator prosthesis will rehabilitate the defect and might improve patient's quality of life.

For rehabilitation of maxillectomy, patient objectives [1] should be following:

1. To restore the function: Speech, respiration, chewing, and swallow.
2. To restore the form: Facial appearance.
3. The goals for the rehabilitation of maxillectomy patient.
4. Separation between oral and nasal cavities to restore normal function of speech, respiration and swallow.
5. To provide support to the soft tissue to restore the mid facial contour and an appropriate aesthetic results.
6. To provide support for the orbital contents to prevent ophthalmic complications like enophthalmos and diplopia.

Indications

1. To obturate the defect temporarily during the period of surgical correction.[3]
2. To act as a scaffold over which tissues can be shaped by surgeons.
3. To restore patient's facial form, thereby improving aesthetics and self-image.
4. In the case of large defects, where primary closure is not possible.
5. When the patient's age and general condition contraindicate reconstruction surgery.
6. In large size defect where results of reconstructive surgery will be unpredictable.
7. When blood supply to the site is affected as in the case of radiation therapy, which will lead to compromised blood supply.
8. In the case of extensive and aggressive pathological lesion, which have higher chances of recurrence.

Functions of obturator

1. It serves as Levin tube for feeding purpose.[1]
2. Helps to keep the wound or defective area clean.
3. It can enhance the healing of traumatic or postsurgical defects.

4. It re-establishes the palatal contour and/or soft palate, which can be helpful to restore speech of the patient
5. In important area of aesthetics, the obturator can be used to correct lip and cheek positions.
6. It can benefit the morale of patient with maxillary defects.
7. It improves mastication and deglutition.
8. It prevents the flow of exudates into the mouth.
9. The obturator can be used as stent to the dressings or packs post surgically in maxillary resections.

The Surgeon and Prosthodontist relationship

For pre-operative treatment, consultation with the surgeon is usually helpful. The elaborated plan for rehabilitation of the patient should be ready. The requirement of any temporary and/or permanent prosthesis should be evaluated pre-operatively. The prosthodontist can help the surgeon by advising regarding the presence of dental diseases and if present, the nature of the same. The prosthodontist can prepare surgical stents and immediate prosthesis, which will aid in recovery of the patient. During joint consultation, the prosthodontist and surgeon should discuss regarding the tentative line of resection and type of restorative to be used.

When insertion of stent or prosthesis has been planned at the time of surgery, the prosthodontist should be present at the time of operation. Intra-operatively, the maxillofacial prosthodontist might modify the prefabricated prosthesis using cold cure acrylic resin and different materials. Post-operatively, the surgeon can assess the healing of surgical wound and depending on which, will advise for the time for fabrication of the prosthesis. throughout operative healing, the wound shouldn't be disturbed which can affect the healing adversely. On the other hand, fabrication of some stabilizing prosthesis might help in fast healing.[1]

Surgical obturator

It is a plate type appliance. It's clear acrylic plate ready from the preoperative impression cast and is inserted at the time of surgical process of the maxilla in the operating theatre. The basic purpose of this prosthetic device is to restore form and function immediately after surgery and promote healing of the surgical wound.

CASES

Case 1:-



A female patient of age 36yrs reported to RST Regional Cancer Hospital, Nagpur with chief complaint of nasal obstruction, headache, facial palsy, and drooping of eyelid since 2 months.

O/E- growth involving right nasal cavity, right maxillary sinus extending to pterygopalatine fossa, suggestive of adenoid cystic carcinoma of right maxilla.

T/t- right maxillectomy along-with the extension of right orbit. Maxillary surgical obturator was given with C clasp on 21, 24 and Adam's clasp on 46, immediately after surgery.

Case 2:-



A female patient of age 72 years, reported to RST Regional Cancer Hospital, Nagpur with chief complaint ulcer on palate of left side.

O/E- lobulated mass seen on left side of hard palate suggestive of Ca Maxilla.

T/t- left maxillectomy was done. Immediate surgical obturator on left side given with C clasp on 11 and Adam's clasp on 16.

Case 3:-



A male patient of age 73 years, reported to RST Regional Cancer Hospital, Nagpur with chief complaint of swelling in posterior part of hard palate

O/E- lobulated swelling on posterior part of maxilla suggestive of Ca maxilla.

T/t- Complete maxillectomy was done. Surgical obturator for complete maxilla was given immediately after surgery, and retention was achieved by suturing surrounding oral mucosa .

Case 4:-



A female patient of age 50 years, reported to RST regional cancer hospital, Nagpur with chief complaint of opening in maxilla along with pus drainage.

O/E- Appro 3.3 x 6.6 x 2.8 cm sized infiltrating heterogenous enhancing lesion seen involving hard palate along with involvement of medial walls of maxillary sinus, and arch too, suggestive of Ca palate.

T/t- partial maxillectomy was done in the middle portion of hard palate. Surgical obturator for hard palate was given. Retention was achieved by C clasp on 13, 23 and Adam's clasp on 16, 26. After follow-up, transitional obturator was also delivered to the patient.

All these cases had undergone for radiation therapy, after surgery. Regular follow-up is going on.

Advantages of surgical obturator

1. Restores patient's oral functions, speech, chewing, and swallowing, shortly after the surgery.
2. facilitate the patient psychologically.
3. reducing risk of haemorrhage postoperatively.
4. Positive impact on patient's psychology, in case of involvement of anterior region.

5. It also helps to maintain the skin graft in position.
6. Stops oral contamination and reduces the possibilities of postoperative infection.
7. It restores the palatal contour and covers the defect.

Features of surgical obturator

1. It should be simple, light-weight, and inexpensive.(2)
2. It should be contoured in line with oral anatomy.
3. It should terminate short of the graft-mucosal junction.
4. Posterior teeth shouldn't get replaced on defect side till surgical wound is well organized, on the oral aspect.

Retention of the surgical obturator

In most of the cases they are mostly of partially edentulous type. In which, the obturator is retained by various clasps, on remaining teeth. Sometimes, wiring may also be needed, in case of large defects.

Some cases are of completely edentulous type. In which, the obturator can be relined at the time of placement during surgery. It is retained by wiring done with attachment to alveolar process/zygomatic arch and/or anterior nasal spine.(3)

References

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