

## CASE REPORT

### Essix Obturator as an Immediate Obturator- A Modified Technique.

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#### ABSTRACT

**Background:** The fabrication of immediate surgical obturator is known for that the appliance is placed immediate after the surgical procedure. Nevertheless, its design and the material used has not been given much consideration owing to a short duration of usage. However utilization of a immediate surgical obturator has a long-term effect on the patient's tissues and if not fabricated using an appropriate technique and material, the obturator could itself may result in deleterious biological as well as psychological effects on the patient.

**Case report:** This case report sheds light on suggesting a modification in new material and technique which attempts to obturate the open eradicate or diminish the deleterious effects. This in turn could bring about a more aesthetic outcome, improving the overall quality of life of the patient in the long run.

**Keywords:** Essix retainer, Immediate obturator, Surgical obturator, Aesthetics

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#### INTRODUCTION

A large cystic lesion is treated conservatively by a procedure of marsupialization. Its recommended for large cysts of the maxilla due to sinus floor. The procedure of marsupialization is a surgical procedure which decompresses the cyst by reducing the intra cystic pressure by enhancing the drain freely, thereby stimulates new bone formation and reduces the chance of pathological fracture or bony discontinuity.<sup>1,2,3</sup> What so ever this procedure might have prolonged healing time, difficulty in maintaining oral hygiene at the marsupialization area and chances of pathologic remnants in situ.<sup>5</sup> Maxillary defects of congenital, traumatic or oncologic origin are rehabilitated with a maxillary obturator prosthesis. It can restore anatomical continuity, occlude oro-antral and oro-nasal communication, prevent regurgitation, aids in maintaining the oral hygiene, assist in deglutition and speech production. Long term success of the obturator prosthesis depends on the defect size, presence or absence of scar tissue and status of dentition. In this case report, we discuss a case of infected cyst of maxilla treated with marsupialization and novel type of maxillary obturator prosthesis which aids in maintaining

hygiene and enhancing the healing of the defect area.

#### CASE DESCRIPTION

A 22yrs old male patient reported to the department of prosthodontics with extraction site in 26 region. History of the patient revealed that the patient had discomfort in maxillary left back region. On investigation patient had periapical cyst(not infected) (Fig.1) and has undergone marsupialization one day earlier.



Figure 1: Pre operative radiograph

This surgical technique is used to treat a cyst when a single draining would not be effective and complete removal of the surrounding structure

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would not be desirable with cystic lining . A betadine surgical pack was placed for 24hrs and it was removed. There were no cystic fluid drain or abscess drain.



Figure 2: Intra oral defect

The intraorally defect area was almost like the extraction socket (Fig.2). The surgeon has conservatively open up and enaculate the cystic cavity . But the vertical dimension of the opening extended till the sinus floor and laterally on the sinus floor. In order to have better healing in the cystic area and avoid food lodgement the opening has to be obturated . So modified immediate obturator was planned.



Figure 3: Impression of the defect area

As the patient was young student we had to give him the obturator immediately . The patients priority was good retention of prosthesis without encountering any pain. The defect area was blocked out with gauze to avoid any impression materials getting into the defect and undercut area during the retrieval. Irreversible hydrocolloid impression(Tropicalgin™)

were made in maxillary and mandibular arch(fig .3). Casts were fabricated using type III gypsum material.



Figure 4: Master cast with essix obturator

Taking into consideration about the patients comfort we planned a new technique to obturate the defective area. The unwanted undercuts were blocked out the cast. The vacuum formed clear retainer or thermoformed material (essix plastic, densply sirona™) is considered more esthetic because it is virtually transparent. Polypropylene polymers are considered to be more durable, flexible and esthetic. Polyester materials are also available in market with additional strength.

A vacuum machine adapts heat-softened plastic by negative pressure, creating a vacuum, and pulls the plastic onto a working study cast. Polyethylene polymers have the advantage of allowing acrylic to be bonded to the material and, thus, are the plastic of choice when relining need to be incorporated into the appliance. The material is also considered more esthetic because it is virtually transparent. The advantages of thermoformed material include low cost, ease of fabrication, and patient acceptability due to minimal bulk and thickness.<sup>4</sup>

We have used 1.5mm thickness sheet( and pressed on the cast (Fig.4). The essix obturator was fabricated (Fig.5) and delivered to the patient. The fabrication took only 30 min and the patient has high acceptance due to easy of handling , aesthetic and comfort. The obturator fabricated had perfectly obturated the opening (Fig.6) , about 4 mm of the obturator was within the defect area which ensures that no food materials or oral fluids escapes into the cystic region, therefore no issues of hygiene. The patient was monitored after 24hrs for any drain and new surgical pack was replaces in the marsupialized. The patient was reviewed after one week (Fig.7,8) the wound had a satisfactory healing.





Figure 5: Essix obturator



Figure 6: Post insertion of Essix obturator

#### DISCUSSION

The fabricating of immediate surgical obturator are to provide comfort and acts as a stent to hold the surgical pack in position.<sup>5,6</sup> In order to reduce the pressure within the Marsupialized cavity and encourage bone growth, it's necessary to maintain the cyst open. This can be achieved using various tools like iodoform gauze, stents, braces, and chains attached to remain in natural teeth, or removable acrylic partial dentures acting as obturators.<sup>7-9</sup> The advantage of using Essix immediate obturator was

that the obturator can be fabricated faster, aesthetically pleasing, the retainer is form-fitted to each tooth so comfortable to wear and no discomfort in speech as there is no palatal plate. The patient was advised to take only soft, warm food and drinks and to avoid hot food. The appliance has to be cleaned with soft soap with normal water. There are various commercially available thermoplastic materials which have better esthetic and durability.



Figure 7: One week Post insertion



Figure 8: Post operative radiograph

#### CONCLUSION

An immediate surgical obturator is necessary for maxillary defect patients to minimize functional disabilities in speech, swallowing, and egress of food and liquid into the surgical defect. This clinical case report on localized marsupialization which was rehabilitated with Modified Essix appliance with an obturator which has good esthetic, comfortable, does not impede speech, is a simple and effective method for treating oro-antral opening. Such kind of Essix obturator can be effectively used when there is minimal surgical defect and that are confined to the hard tissue region. Hence further studies could be carried

out within the scope of material aspect and patient comfort.

#### CONFLICT OF INTEREST

There is no conflict of interest

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