

## Case Report

### Obturator with soft liner in the management of hard palate defect:

#### A case report

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#### ABSTRACT:

Maxillary defects are created following surgical treatment of patients with congenital defects, trauma, or neoplasm. Oral cancer is one of the more common malignancies if detected lately massive tissues will be excised surgically and correction will be challenging. One of the treatment strategies is obturator, the retention of which is a major problem.

70 years old female presented with complaint of difficulty in chewing, speech and unlike her appearance. Hemimaxillectomy (or transectomy) was done 6 months ago as surgical treatment of squamous cell carcinoma resulted in a huge hole on the right side of the remaining maxilla. The size of the defect was about 3.0X1.5 cm. Acrylic obturator was made. Soft liner (Mucopren, Germany) was added to the fitting surface of the obturator. The patient's speech, swallowing, mastication and facial appearance were improved. The use of hard acrylic base obturator with soft linear rendered the obturator more retentive and comfortable to the patient. To the best of our knowledge this is the first case to be reported in Sudan in a method different from those used by others worldwide.

**Keywords:** Obturator, soft linear, maxillary defect, Sudan.

Oral cancer is one of the more common malignancies worldwide. Malignant tumors of the maxilla and hard palate account for 1-5% of malignant neoplasm of the oral cavity; about 70% of the lesions which involve these areas are squamous cell carcinomas<sup>1</sup>. Its detection in developing countries is too late when they invade the underlying bone. The size of these defects directs its management<sup>2</sup>. The treatments of choice are: alveolectomy, palatotomy, maxillectomy, which may be total or partial. Surgical reconstruction of the defect may be carried out using a wide range of micro-vascularized flaps: osteo-musculo-cutaneous of the internal iliac crest, an osteo-cutaneous flap of the fibula or scapula, fascia, or osteo-cutaneous radial flap, or a pedicled flap of temporal muscle<sup>1</sup>. These flaps are supported by

single or multiple obturator prostheses, the retention of which is a major problem. Rehabilitation via palatal obturators is preferred in patients with a poor prognosis or in weak condition. Rehabilitation aims to: restore the separation between the oral and nasal cavities, enable the patient to swallow, maintain or provide mastication, sufficient occlusion and mandibular support, support the soft facial tissues, re-establish speech and restore an aesthetically pleasing smile. Hence, it is crucial to work in close cooperation with the staff who makes the prosthesis and who evaluates the case when the surgery is planned and obtains the necessary gnatological, anatomical and functional information. Thereafter, during the surgical stage, for the immediate obturators, or in the successive days, for the temporary obturators, work is devoted to making the prostheses.

#### Case Report

A 70 years old female presented to the dental clinic complaining of un-satisfaction with chewing and appearance and difficulty of speech after she had been underwent surgical

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transectomy of a neoplasm in the maxilla 6 months ago. On examination there is a hole in the right side of the maxilla (Class II according to Aramany Classification<sup>3</sup>). The size of the defect is about 3X1.5 cm (Photo 1).

**Methods of Fabrication of The Obturator:**

Firstly acrylic obturator was made in the following steps: Alginate primary impression was taken by modified stock tray. Diagnostic cast was made. Polymethylmethacrylate resin special tray was fabricated. Poly vinyl siloxane final impression was taken after boarder molding was done. Master cast (By dental stone) was achieved , Occlusal block was made. Jaw relations were established. Selection and setting up of the artificial teeth was done. Try-in step was done. Waxing, deflasking and processing were done. Finishing and polishing was done.

Second step was addition of soft liner (Mucopren, Germany) in the fitting surface of the obturator according to manufacturer's instruction (Photo 2). The patient's speech, swallowing, mastication and facial appearance were improved (Photo 3).



Photo 1: A defect in the right side of the maxilla (Class II according to Aramany Classification<sup>3</sup>).

**DISCUSSION**

The management of transectomy depends on size of the defect. Small size defects are treated by surgical suturing and large defects by



Photo 2: Addition of Soft liner (Mucopren, Germany) to the fitting surface of the obturator.



Photo 3: The patient with the obturator.

implant supported over denture. In this case the defect is too large for suturing and implant is too expensive for the socioeconomic state of the patient. So, soft liner was the suitable choice. The attachment of soft liner is more retentive to acrylic base compared with metal based and flexible resin used by others<sup>4</sup>.

In the last three years many cases were reported using soft linear adherent to obturators. They differ in procedure but targeting the retention of the obturator. RavichandraKS et al who used a simplified impression technique in a 5 day old infant with unilateral cleft lip and palate clearly concerned of the issue of feeding by negative pressure<sup>5</sup>. This differs completely from our patient who is old and her main complaint was

difficulty in speech, swallowing and unhappy appearance. According to their patient's age they concentrated on the procedure, the technique and the material used and ignored the retention which is a major problem in patients in need of obturators as solution of hard palate defect.

Kumar N and Gupta R fabricated palatal prosthesis in combination with soft tissue mask on buccal side for retentive and stability purpose of the obturator in their 65 years old patient<sup>6</sup>. They concentrated on the disadvantages of the obturator as weight especially in large size defects and its solution by adding soft liner, but they did not explain which type of material used for the base.

Ramya & Balasubramanya used soft liner in blocking the defect in their 43 years old patient with velopharyngeal dysfunction<sup>7</sup>. Their main target was the solution of extension of the obturator in soft plate defect.

In the case reported by Mehta et al, they used soft liner to engage the soft tissue undercuts in a sequence that differ from ours<sup>8</sup>. Their patient was completely edentulous in addition to the defect in which the retention would be more complicated.

## CONCLUSION

The use of hard acrylic base obturator with soft

liner rendered the obturator more retentive and comfortable to the patient.

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