LIGHT WEIGHT OBTURATOR FOR A PATIENT WITH UNILATERAL MAXILLECTOMY

Obturador leve para paciente submetido à maxilectomia unilateral

Ahmed Abdulrahman Abass

B.D.S, H.D.D. Prostho, Prosthodontic Department, Peramerd Dental Specialty Center Sulaimani, Iraq,
e-mail: drahmed_77@yahoo.com

Abstract

Acquired jaw defects may be pathological, traumatic or developmental in origin. Identification of the variable factors which influence the serviceability of prostheses for the treatment of the jaw defects is important and useful information for the patient, the family of the patient, the medical community and those responsible for the third-party payments. The aim of this article is to presente a light weight obturator as a definite treatment for a patient with unilateral maxillectomy.

Keywords: Maxillectomy; Palate obturator; Oral surgery.

Resumo

Defeitos adquiridos nos maxilares podem ser patológicos, traumáticos ou de desenvolvimento em sua origem. A identificação dos vários fatores que influenciam a utilidade das próteses para o tratamento de defeitos dos maxilares é importante e útil na informação ao paciente, sua família, as comunidades médicas e responsáveis por pagamentos. O objetivo deste artigo é apresentar um obturador leve como tratamento definitivo para um paciente com maxilectomia unilateral.

***Palavras-chave**: Maxilectomia; Obturador de palato; Cirurgia bucal.*

INTRODUCTION

The common aetiological factors for acquired defects in the moulth are cancer and traumatic injury (1). Ablative surgery may remove varying portions of the maxillae, up to unilateral or bilateral maxillectomy. This will create a communication between the oral and nasal cavities, which will impair the intelligibility of speech and the functions of mastication and deglutition. The body will attempt to compensate for functional loss in an effort to maintain homeostasis. This has been demonstrated with the regulatory system for speech in patients with acquired defects of the maxillae. The loss of even a small portion of the maxilla produces an immediate increase in respiratory volume in an effort to maintain adequate oral pressure for speech. Once the defect has been closed effectively, the respiratory effort returns to a normal level and oral pressure is maintained within the normal range for speech (2).

Prostheses may be needed for a variety of reasons (3):

1. as a support of surgery;
2. as a vehicle for radiation therapy or for protection from radiation;
3. as an adjunct to rehabilitation medicine for the training and stimulation of defective neuromuscular palato-pharyngeal structures;
4. for correction of developmental abnormalities.

The management of oral cancer patient involves the cooperation and coordination of care among the members of the interdisciplinary medical team. These members include maxillofacial Surgeon, plastic surgeon, oral radiologist, maxillofacial prosthodontist, laboratory technician, speech pathologist, anaesthesiologist and surgical nurse. The patient's cooperation is also vital in this process (4).

REPORT OF CASE

A 50-years-old man, who was otherwise in a good health, was referred to Peramerd Dental Specialty Center, Department of Prosthodontics, Sulaimany, in September 2007 by his surgeon because he had undergone extensive surgical removal of a large adenocarcinoma of the maxillae which extend to nasal cavity. The operation was done 6 months ago and the right half of maxillae had been removed with alveolar ridge including teeth from maxillary right central incisor to the hamular notch and anterior part of the soft palate (Figure 1).

FIGURE 1 - Clinical aspect of the lesion

An alginate impression of the maxillary arch was taken using a perforated tray modified with modelling wax to cover the required area. A mandibular alginate impression was also take taken. Maxillo-mandibular relation was recorded and transferred to the articulator for arrangement of artificial teeth. The trail denture was checked in the mouth, then flasked, packed and cured with heat-cure acrylic denture base material.

The finished obturator has covered the opening of oral cavity to nasal cavity with remaining hard palate as well as the part of soft palate removed during surgery with a thickness of 2mm all over the base (i.e. there is a deep fossa in the base). This fossa in the obturator base was approximately filled with thick plaster (about 5mm below the level of palatal part of the obturator). Another impression has been taken by the same modified perforated tray with alginate and poured by stone to produce another master cast. This cast was sent to the lab to fabricate a thin 3mm thickness clear plate of acrylic that fits to the oral aspect of the obturator as a cap and bonded to the obturator with cold cure clear acrylic resin (Figure 2a and b).

FIGURE 2A and 2B - Two views of the palatal obturator

On delivery, the light weight obturator presented satisfactory occlusion, good retention and stability with light weight, and the patient reported a feeling of comfort and satisfaction of his demands (Figure 3).

FIGURE 3 - Obturator in place

DISCUSSION

A definitive obturator can be fabricated with the approval of attending surgeon, in the absence of any recurrence of disease, and once sufficient time has elapsed following surgery to ensure complete healing of tissues in the region of the defect. The remaining maxillary and mandibular dentition should be restored to optimal health to provide retention, support, and stability to the obturator prosthesis. Teeth weakened by periodontal disease should be splinted to improve stability as abutment teeth for the prosthesis (4, 5).

The final result of patients who had surgeries to remove tumors depends on a multidisciplinary approach to re-establish the balance among bones, soft tissue and teeth and to achieve facial harmony. Maintaining of the soft tissue of the upper lip is strategically important during design of surgery, so that, after placement of the prosthesis, the patient may recover correct eating, breathing and phonetics, due to the important role of the lip in this process (6, 7).

Acrylic resin is useful to restore the excised structures since the prosthesis may help in repositioning the upper lip musculature, providing better aesthetics and function. Prosthesis device have served to obturate oro-nasal communication, to provide functional and aesthetic replacement for missing teeth and supporting tissues, and to assist with velopharyngeal function as speech bulbs. The status of the existing soft tissue and bony anatomy, as well as the available dentition, influences the design, stability and effectiveness of the prosthesis (8).

CONCLUSION

Treatment of maxillary acquired defect is based on an understanding of the accepted principles, concepts and practices of prosthodontics, augmented by expanded knowledge of anatomy, physiology, pathology, the functional compensation of residual tissue, and a psychosocial evaluation, with compassionate management. In the present case, the use of this technique was adequate to fabricate an obturator which is light in weight, easily cleansable and more retentive due to less gravity force and to give better post operative life conditions to this patient.

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