

Surgical and prosthetic rehabilitation of cancerous defects of the maxilla: A prosthetic rehabilitation after partial maxillectomy

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OBJECTIVES

The excision of maxillary tumors causes face mutilation, which leads to a functional and esthetic deficit. Maxillary reconstruction has four objectives: closure of the defect, function retrieval, repair of the shape and symmetry of the face, and of the eye socket if necessary.

METHODS

The following case illustrates the prosthetic treatment of a palatal defect after the excision of an epidermoid carcinoma. Surgical reconstruction of the defect was not possible in this case (due to age and future radiotherapy). Surgical reconstruction and prosthetic reconstruction were compared in a literature review.

Prosthetic reconstruction

Advantages	Disadvantages
-Immediate functional result -Decrease of duration of surgery -No morbidity -Acceptable quality of life -Esthetic -Limited price -Facilitated cancer follow-up	-Multiple sessions necessary -No denture is definite -Maintenance -Patient is reminded daily of the mutilation -Mechanical constraints -Physiological constraints

Surgical reconstruction

Advantages	Disadvantages
-Avoids the inconveniences of a prosthesis -Is the best obturation -Excellent tightness	-Extended time of surgical intervention -Morbidity of the donor site -Complex reconstruction -Cancer follow-up is more complicated

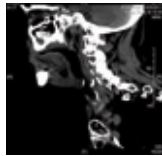
CLINICAL CASE

1) Preoperative situation

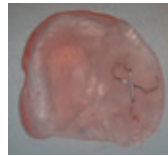
-Medical history : 84 year-old woman, hip replacement 2 years before, hypertension, complete edentulism
-Medical treatments : Temerit (neбиволол), Fludex (indapamide), Kenzen (candesartan cilexetil), Zandip (lercanidipine)
-Hypothetical diagnosis : T4 epidermoid carcinoma of the palate
-A healing plate (palatal acrylic prosthesis) was prepared from the preoperative impression.



Preoperative view



CT scan



Healing plate

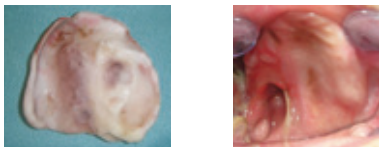
2) Tumor resection, placement and relining of healing plate



Anatomopathological diagnosis :
T4 N0 M0 EPIDERMOID CARCINOMA of the palate

3) Postoperative controls

After weekly postoperative check-ups and after several alginate impressions, a new healing plate was relined with Functional Impression Tissue Toner (Kerr®) one month after surgery.



4) Secondary impressions and assessment of intermaxillary relations

The patient received two series of conformational radiotherapy sessions (total of 60 Gray). Six months after surgery, secondary impressions were taken : polysulfide (Permlastic®), thermoplastic impression sticks (Kerr®) and individualised trays were used.



5) Evaluation of trial denture



6) Polymerisation of the prostheses

At this stage, due to the limited mouth opening of the patient, no teeth could be placed on the mandibular prosthesis, and no molars were placed on the obturator.



Prosthetic technician : Jérôme Raoux

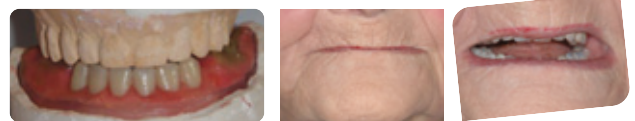
7) Fabrication of resin blocks on the mandibular prosthesis

During physiotherapy sessions, the mandibular prosthesis was used to improve mouth opening. When a mouth opening of about 2 cm was obtained, tertiary impressions were taken for the mandibular prosthesis.



8) Intermaxillary relations, trial of mandibular teeth, and placement of mandibular denture

(1 year after surgery)



9) Ideal follow-up : Regular maintenance, physiotherapy and cancer follow-up

RESULTS

The clinical case underlines some of the difficulties encountered during a maxillofacial prosthetic treatment. Rehabilitation after maxillectomy can be surgical or prosthetic. It is also possible to combine both treatments. The tissue loss must be treated as soon as possible, in a functional and esthetic manner, so that the patient can return to a "normal" life. Very few studies compare prosthetic and reconstructive techniques. The choice of the best technique still remains quite subjective, as evidenced by multiple and sometimes contradictory publications. There is no consensus on an "ideal" treatment indication for each anatomic situation. The decision to reconstruct the maxillary defect surgically or to conceive a prosthetic obturator depends on factors such as: the age and medical history of the patient, the size of the maxillary defect, and the experience of the surgeon. Surgical reconstruction and prosthetic rehabilitation both provide advantages and disadvantages.

CONCLUSION

In all cases, teamwork between doctors, and the psychological and social aspects of the treatment are essential. Treatment must include surveillance of the defect, and an adaptive global rehabilitation. The future reconstructions of maxillary defects seem to evolve towards an alliance of techniques: microvascular surgery, osseous distraction, implantology, and prosthetic rehabilitation by Computer-Aided Design and Computer-Aided Manufacturing (CAD-CAM).