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Quality of life and patients satisfaction after maxillectomy and prosthethical rehabilitation

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Introduction

Ablative tumor surgery in the orofacial region is often forwared by a persistent disturbance of both function and aesthetic appearance. Resections of the upper jaw and the surrounding tissue have particulary long-lasting detrimental effects on masticatory function. Therefore reconstructive measures must aim at regaining functional abilities such as mastication and articulation besides restoring aesthetic integrity (Curtis et al., 1997). Defects after radical maxillectomy require a combined rehabilitation including prosthetic treatment, closure of an oronasal or nasoantral communication, stabilization of eyeball as well as the cranium. In some cases, a restoration of the bony orbital structures and the skin are necessary (Schliephake, 2000). New surgical procedures using various microvascular supported flaps were established and favorable long-term results had been reported in the recent years (Ugelesic et al. 2000). Therefore, the aim of the present study was to analyze the outcome of conservative prosthetic defect reconstruction after maxillectomy excluding implant supported dentures.

Material and Methods

During a follow up of 30 years a total of 117 patients were treated in the department of Oral and Plastic Maxillofacial Surgery, Martin-Luther-University Halle-Wittenberg.
The main topics of our broad retrospective analysis were the histological kind of differentiation and in case of maxillary squamous cell carcinoma the classification according to TNM-system, grading and five-year survival time. From the therapeutical point of view the kind of rehabilitation was analyzed.
Additionally, a prospective study examined 12 patients which were treated between 1990 and 2000 with a maxillary defect. Localization, size and type of the defects as well as denture support in the upper jaw were analyzed with regard to the retention. Furthermore, the patients were asked with the aid of a questionnaire concerning their contreatment and acceptance of the prosthesis.

Results

66 cases were squamous cell carcinomas and 32 zylindromas, respectively. The remaining 29 patients had other malignancies, among them 3 metastases. The five-year survival time of the most frequently occuring squamous cell carcinoma was 60% according to KAPLAN-MEIER (see Fig. 1). From the therapeutical point of few the surgical strategy was performed in 78 cases. 24 patients were radiologically treated, a combination of both was used in 15 patients. The rehabilitation strategy was almost a prosthetical: In 78 cases obturators were used. A treatment of local closure in combination with a denture was found in 10 patients and only in 5 cases a flap-based rehabilitation was preferred. The almost way of prosthetic rehablilitation were obturators or extended dentures.

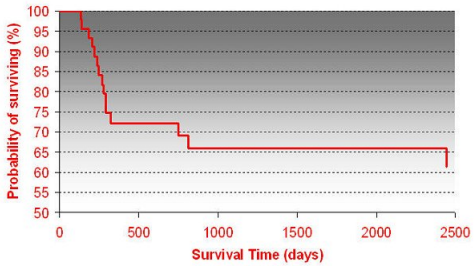

Fig. 1 Probability of surviving according to KAPLAN-MEIER in maxillary squamous cell carcinoma

The prospective investigation concerning the patient's satisfaction showed good functional results with regard to the retention in 7 of 12 patients. Moderate retention was found in 2 patients, a bad functional result was observed in 3 patients. The causes for an insufficient or bad retention are:

- hemimaxillary or complete defects without remaining teeth
- little retention due to the shape of defect
- no oral vestibulum, no undercuts.

Aesthetic and functional results after prosthetics with obturators were almost good. The obturators were accepted by all patients even in case of poorer fitting. All patients reported about a good speech function and a satisfactant swallowing. The noticed limitations were spicy meals and fluid coming through the nose.

Discussion and Conclusions

The prosthetic rehabilitation using obturators provides an easy and inexpensive treatment after maxillectomy. The main advantages are the reduced operating time and the "daily" given possibility to control a local recurrence. Tab. 1 summarizes all advantages and disadvantages compared to the flap reconstruction in detail. All patients could fully be reintegrated in the normal life by this "classical way" of rehabilitation after partial or total maxillectomy (see Fig 2 and Fig 3).

	Flap based	prosthetical
Operating time	extended	almost short
OP teams	2	1
Postoperative intensive care	+	-
Risk of operation	high	low
Infection rate	high	low
Aesthetical and functional results	+ (-)	+ (-)
Control of local recurrence	-	+

Tab. 1 Comparision between flap based and prosthetical rehabilitation of maxillary defects

Profile after hemimaxillectomy and obturator

Obturator to cover a hemimaxillary defect

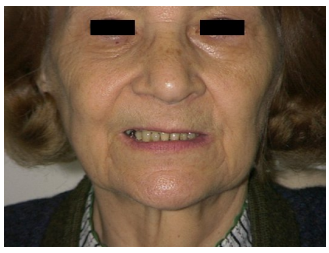

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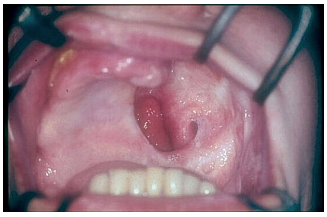
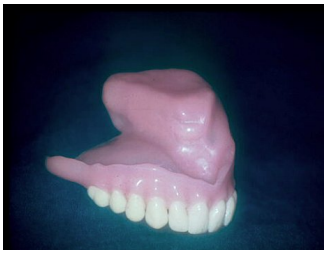
Fig. 2 Prosthetic rehabilitation of a maxillary defect: Good aesthetical rehabilitation



Extended hemimaxillary defect



The obturator to cover a left-side hemimaxillary defect

Normal occlusion after denture-based rehabilitation

Fig. 3 Intraoral aspects of a maxillary defect: Good functional and aesthetical results

Although midfacial tumor are rather rare they are challenging from the reconstructive point of view because they often include the maxilla, the sinus, nasal cavity, the zygoma, the periorbital region and the of the orbita. Reconstruction should be aimed at ensuring a soft tissue lining, adequate oral intake, provision for a prosthesis, and aesthetic rehabilitation (Deschler and Hayden, 2000).
With respect to any disadvantages the prosthetic rehabilitation is still the therapy of choice to cover maxillary defects especially in medical compromized patients.

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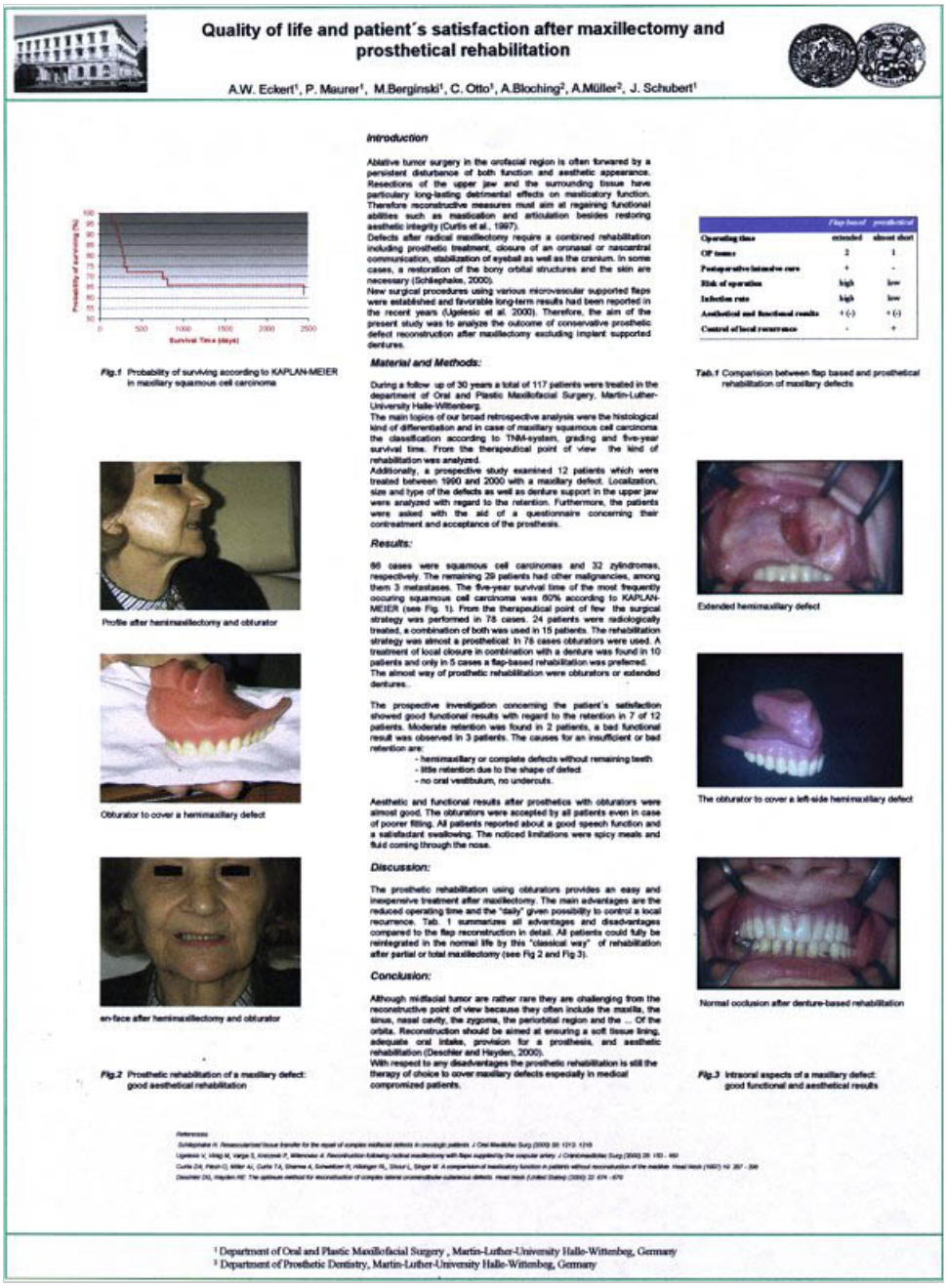

Quality of life and patient´s satisfaction after maxillectomy and prosthetical rehabilitation

A.W. Eckert[1], P. Maurer[1], M.Berginski[1], C. Otto[1], A.Bloching[2], A.Müller[2], J. Schubert[1]

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