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Treatment of malignant tumors of the oral cavity - state of the art

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In the past decades minimally invasive surgery and multimodal treatment strategies have gained in importance in the treatment of oral cancer as well as elsewhere. Within this concept, the primary tumor is resected enorally whenever possible, especially by carbon dioxide laser. The regional lymphatics are treated preferentially with functional neck dissection, preserving the sternocleido-mastoid muscle, accessory nerve and internal jugular vein. As a part of this multimodal treatment concept, percutaneous and interstitial radiotherapy was of great significance. Interstitial radiotherapy with iridium-seeds in the region of the (removed) primary tumor allows, on the one hand, local application of a high radiation dose and, on the other, protection of the surrounding tissues. The neck may be irradiated percutaneously, if necessary. By using this concept, extensive surgery with disfiguring defects, impaired swallowing, speech and chewing, and the necessity of reconstruction measures can be avoided in many cases with equally good treatment results and even improved quality of life. Tumours which cannot be resected by organ sparing surgery, will be treated by simultaneous radiochemotherapy. This report discusses the results of treating of 614 patients with oral cancer admitted to the Department of Otolaryngology, Head and Neck Surgery, University Erlangen-Nüremberg, during the period of 1970 to 1994.

Key words: mouth neoplasms-therapy; combined modality therapy

Introduction

Most common etiologic factors for oral cancer are abuse of alcohol and nicotine; recent epidemiologic data have demonstrated an increase in incidence in the last decades.

The progress in oncology all in all has failed to demonstrate a significant improvement on survival of patients with oral cancer, since most patients ask for medical help only just in advanced stages of the disease.

In the past, a typical treatment of oral cancer was transcutaneous surgery with the resection of the primary tumour and the lymphatics of the neck "en bloc" (commando procedure,[1]). Therefore, often the continuity of the mandible had to be interrupted. The neck dissection was performed as a radical surgery method with resection of the sternocleidomastoid muscle, the internal jugular vein and the accessory nerve.[1] These jaw-neck procedures either required mandibular reconstructions with extensive flaps for covering the defects or resulted in disfiguring defects with severe functional impairment and loss of quality of life.

The concept of organ sparing treatment with minimally invasive surgery tries to avoid percutaneous or transmandibular surgical access to the primary site and instead makes use of the natural "entrance" through the oral cavity. The primary tumour is resected with high-frequency diathermic knives and needles and carbon dioxide laser.[2-4] The neck is treated discontinously and, if possible, using functional, nerve and muscle sparing surgical techniques.[3]

Postoperative radiotherapy proved to be especially beneficial in stages III and IV of the disease. If tumour resection seems unfeasible from the func-

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tional point of view, simultaneous chemoradiotherapy must nowadays be considered as the treatment policy of choice. We discuss the results in oral cancer treatment obtained in the last two decades, especially by comparing "functional" vs. "radical" therapy.

Materials and methods

Within a retrospective analysis, the records of all 506 patients, treated for oral cancer at the Department of Otorhinolaryngology, Head and Neck Surgery, University Erlangen, between 1970 and 1990, were reviewed. TNM classification was updated in accordance with the 4th edition. Follow-up data were obtained from cooperating hospitals (especially radiation oncology departments), the resident doctors, the registration offices and the relatives of the patients.

Data were analyzed by using the statistic software Stat View for Macintosh.

The mean age of the 423 men and 83 women was 56 years (range: 29 - 93 years). Patients of group 1 (242) were treated by enoral surgery and the patients of group 2 (143) by percutaneous surgery. T-, N- and stage distributions are shown in Figure 1. In group 1, 43% received postoperative radiotherapy, in group 2, 28%.

Results

The 5-year and 10-year disease free survival rates for the whole group were 57% and 51%, respectively. The 5-year and 10-year disease-free survival rates were 61% and 58% resp. for group 1 and 62% and 53% resp. for group 2 (Figure 2). The difference in disease-free survival between the two groups was not statistically significant. The stage dependent survival rates are summarized in Table 1.

Table 1. Percentage of the disease free survival in both treatment groups according to stage

Stage	Group 1 enoral			Group 2 percutaneous		
	n	5 years	10 years	n	5 years	10 years
I	59	61,7	61,7	9	(87,5)	(87,5)
II	43	70,7	55,0	22	62,8	52,9
III	76	67,8	67,8	53	65,8	59,2
IV	66	43,2	43,2	59	53,9	46,0

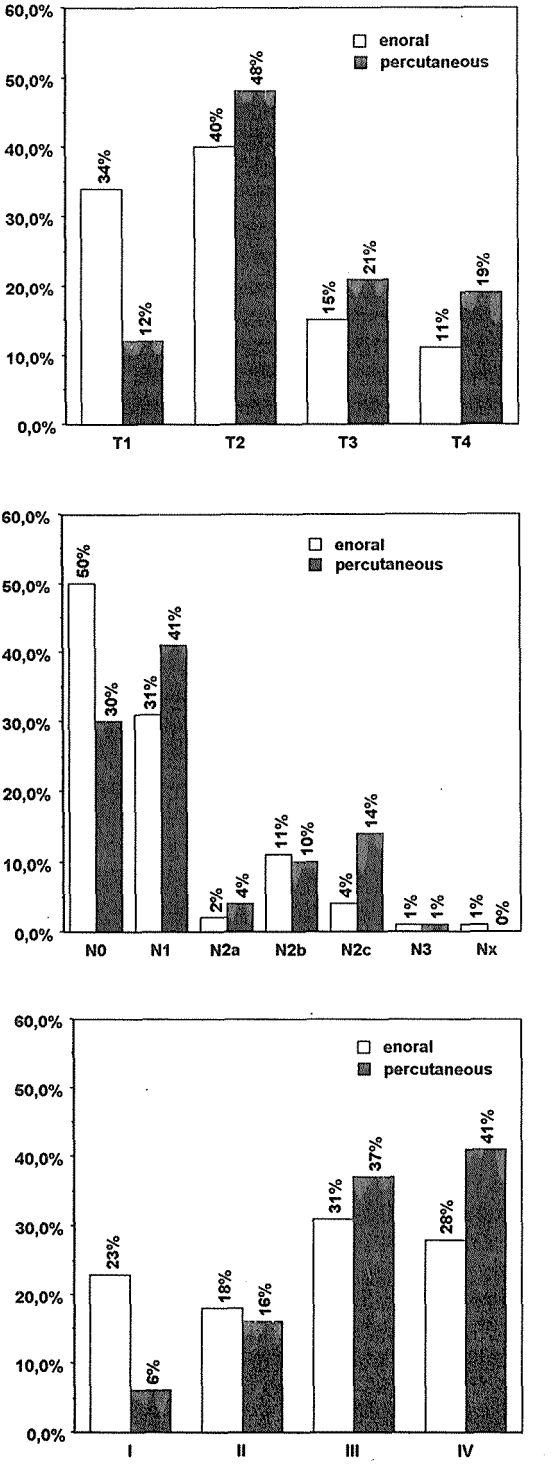

Figure 1. Distribution of T-, N-categories and stage in both treatment groups.

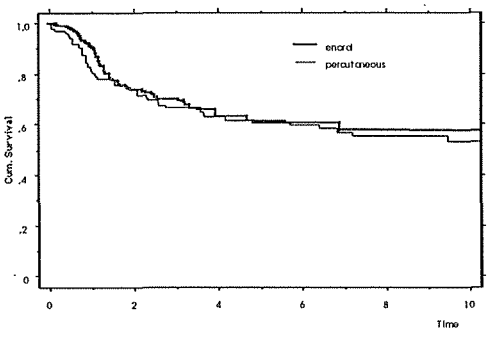

Figure 2. Disease free survival by method of surgery.

Discussion and conclusions

Figure 2. shows that in oral cancer enoral surgery and percutaneous surgery, such as commando operation, jaw-neck procedure or mandibular split procedure seem to be equal from the viewpoint of prognosis. However, when comparing T, N and stage distributions, some minor heterogeneities were obvious, but also stage dependent survival rates as demonstrated in Table 1. failed to demonstrate any significant difference in survival between the two groups for stages II to IV. In stage I the numbers are too small for valid statements.

Within the last two decades, various authors have published reports on enoral resections of oral cancer.[2,4,5] The treatment results reported are comparable to those achieved by en bloc resections and reconstruction of the resulting defects by peddled or microvascular anastomosed flaps.[6]

We conclude with reference to our analysis, that organ sparing or "functional" surgery (in combination with postoperative radiotherapy) in comparison with classic "radical" surgery can be performed without any decrease in survival rate. Considering the lesser impairment of swallowing and speech in particular and of function in general,[7] "functional" treatment of cancer of the oral cavity should be emphasized as the treatment option of choice.

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