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ORIGINAL ARTICLE

Should older head and neck patients be treated differently?

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KEYWORDS

Upper aerodigestive tract cancer;
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Abstract

Objectives: Growing life expectancy is resulting in an increasing number of elderly patients with upper aero digestive tract tumor. The objective of this study was to assess the appropriateness of aggressive curative treatment for these older patients.

Patients and Methods: Patients over the age of 70 years, with head and neck squamous cell carcinoma (HNSCC) of the oral cavity, pharynx or larynx, primarily treated in our department between 2005 and 2007, were assessed retrospectively at 36 months' follow-up. Demographics, comorbidity and treatment strategies and their associated morbidity and mortality were reviewed.

Results: Thirty-two males and 12 females with a median age of 77 years (range, 70–88 yrs) were given curative treatment. The majority presented with a least one comorbidity. Seven had a history of myocardial ischemia, 15 of chronic obstructive bronchopathy, and 10 of type-2 diabetes; 17 were under treatment for arterial hypertension, four had chronic renal insufficiency, and two had cirrhosis. Nine patients received radiation therapy alone; 18, concomitant chemoradiotherapy; 14, surgery with adjuvant chemoradiotherapy; three were treated by salvage surgery after failure of radiation therapy. In the 44 patients, there were 12 deaths: seven from recurrence, two from treatment complications, one from MI, one from peritonitis and one from pneumonia. At 36 months' follow-up, 32 of the 44 patients were alive.

Conclusion: HNSCC is a serious disease that often necessitates aggressive treatment. All patients who are medically eligible should receive curative treatment, without age being an exclusion criterion. Taking comorbidity into account, on the other hand, enables treatment options to be optimized.

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Introduction

New surgical techniques, notably in the field of reconstructive surgery, improved medical treatment and advances in anesthesiology allow more aggressive management of upper aerodigestive tract (UAT) tumor, matching the aggressive-

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ness of the pathology. Can this aggressive attitude be applied in elderly patients? The question needs to be raised and is of great relevance in developed countries given the aging of the patient population. As life expectancy increases along with the number of malignancies diagnosed at ages exceeding 70 years, the number of patients will continue to rise.

The present study sought to assess the appropriateness of aggressive treatment in elderly UAT tumor patients.

Patients and Methods

The clinical records of patients over the age of 70 years, presenting with UAT tumor of the oral cavity, pharynx or larynx were reviewed. Baseline clinical status was assessed on the ASA classification, of proven effectiveness for precise determination of expected short and medium term morbidity in elderly patients. Treatment options were surgery, radiation therapy and concomitant chemoradiotherapy. Demographics, comorbidity and treatment strategies and their associated morbidity and mortality were assessed.

Results

Thirty-two men and 12 women, with a median age of 77 years (range, 70–88 yrs) were treated. Twenty-three presented with stage IV UAT tumor, five with stage III, 13 with stage II and three with stage I (Fig. 1).

Forty-five percent of tumors involved the larynx, 23% the hypopharynx, 15% the oral cavity, 6% the oropharynx and 6% were of unknown origin (Fig. 2). Patient distribution according to tumor stage and location is presented in Table 1.

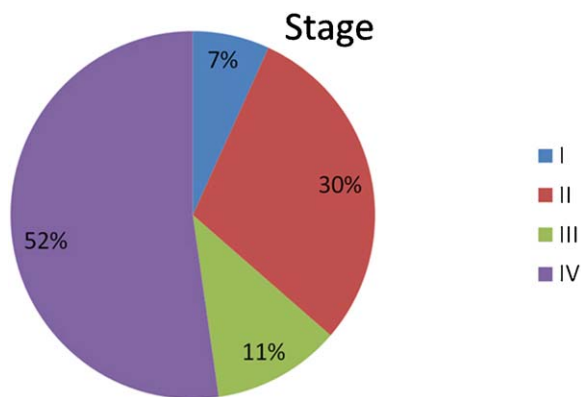


Figure 1 Patient distribution according to tumor stage at diagnosis.

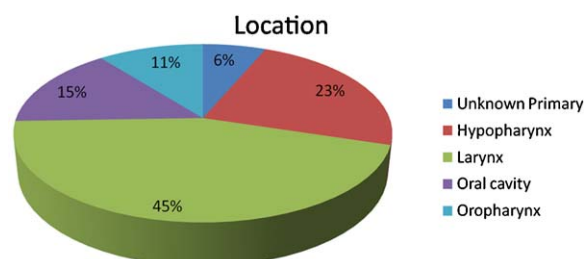


Figure 2 Patient distribution according to tumor location.

A majority of patients presented with at least one comorbidity factor: seven with history of myocardial ischemia, 15 of chronic obstructive bronchopathy, and 10 of type-2 diabetes; 17 were under treatment for arterial hypertension, 4 had chronic renal insufficiency, and two had cirrhosis; three had had stroke.

Nine patients received radiation therapy (65–70 Gy) alone; 18, concomitant chemoradiotherapy; 14, surgery with adjuvant chemoradiotherapy; three were treated by salvage surgery after failure of radiation therapy.

In the 18 patients receiving concomitant chemoradiotherapy, no fatal complications occurred. Grade-3 mucositis was diagnosed in 22% of cases and grade-3 leukocytopenia in 4%. Global response to treatment on clinical, endoscopic and radiologic assessment was 88%.

There was no postoperative mortality in patients managed by first-intention surgery. One patient treated by laryngectomy associated to bilateral ganglion curage developed a fistula, which resolved spontaneously. One patient developed pneumopathy, treated by antibiotherapy.

There were 12 deaths among the 44 patients. Seven patients showed locoregional recurrence; two died of a treatment-linked complication, one of myocardial infarction, one from peritonitis and one from pneumopathy complicated by septic shock.

There was no mortality in stage-I patients ($n=3$). Of the stage-II patients ($n=13$), one died of pneumopathy, without signs of recurrence, one of MI and one, who showed locoregional recurrence, died despite salvage chemoradiotherapy. There was no mortality in stage-III patients ($n=5$). Of the stage-IV patients ($n=23$), 14 were alive without signs of recurrence at the time of writing, six died following recurrence, two following a treatment-linked complication, and one following peritonitis.

At 12 months' FU, 35 of the 44 patients were alive, and 32 at 36 months.

Discussion

UAT tumor requires an aggressive attitude if curative treatment is intended. Age has frequently been seen as an exclusion criterion for such an approach.

However, in a society in which the population is observed to be aging, an increasing number of elderly UAT tumor patients, considered unsuited for appropriately aggressive treatment, can be expected [1,2]. Reassessment of treatment strategies is therefore certainly needed in this age group [3].

The current opinion in the literature is divided as to treatment recommendations (and to associated complications) for elderly UAT tumor patients.

Radiation therapy is, however, an obvious option in elderly subjects [4]. While their clinical characteristics and treatment response patterns differ from those found in the younger population, their tolerance does not. Associated acute and chronic toxicity is identical in both age groups, as is efficacy in terms of locoregional control. In the present series, nine patients were managed by radiation therapy alone. Compliance was acceptable, and the intended radiation dose could be administered in all cases. No courses of treatment had to be interrupted due to acute toxicity.

Table 1 Patient distribution according to tumor stage and location.

Stage	Larynx	Hypopharynx	Oropharynx	Oral cavity	Unknown primary origin	Total
I	3					3 (7%)
II	10			3		13(30%)
III	1	3	1			5 (11%)
IV	6	6	4	4	3	23 (52%)
Total	20 (45%)	9 (23%)	5 (11%)	7 (15%)	3 (6%)	

When conservation of the larynx is sought, concomitant chemoradiotherapy is mandatory. Tsukuda et al. [5] assessed feasibility and associated toxicity in elderly UAT tumor patients. 50 of the patients presenting with stage III or IV tumor were treated. Grade-3 oral cavity mucositis was observed in 20% and grade-3 leukocytopenia in 6%. Response on clinical, endoscopic and radiological assessment was 93% in stage-III and 54% in stage-IV tumors. The authors concluded that concomitant treatment could be applied in elderly patients and was well tolerated and effective.

In the present study, 18 patients were treated by concomitant chemoradiotherapy and assessed. No fatal complications occurred. Grade-3 mucositis was found in 22% and grade-3 leukocytopenia in 4%. Global response on clinical, endoscopic and radiological assessment was 88%.

Likewise, results of first-intention surgery were assessed in patients over the age of 80 years, notably by Clayman et al. [6]. Mean global survival was identical to the actuarial survivorship for the general octogenarian population ($P=0.001$). Although the elderly patient group presented with elevated baseline comorbidity as compared to the under-80 year-old group, no difference in pre- and post-operative complications rates or treatment efficacy was found.

In the present study, 17 patients were managed surgically: 14 in first intention, and three by salvage after failure of radiation therapy. There was no associated mortality. One patient treated by laryngectomy associated to bilateral curage developed a spontaneously resolving fistula, and one developed pneumopathy, treated by antibiotherapy.

Sarini et al. [2], on the other hand, in 273 UAT tumor patients over 75 years of age, found that treatment option according to patient age affected prognosis. Surgery or surgery associated to radiation therapy was significantly less frequently applied in the group of elderly patients, and the mortality rate was the double of that in the younger age group: median overall survival was 14 months in the elderly group, versus 20 months in the younger age group.

In reality, treatment strategy should be founded on the full set of factors influencing the patient's evolution, and not on age alone. Pre-operative comorbidity should be assessed: if it is high, then surgical stress is to be minimized [7].

First intention surgery associated to complex reconstruction may thus be feasible in elderly subjects, with satisfactory results and an acceptable rate of complications.

Zabrodsky et al. [7] reported an overall postoperative complications rate of 63% in elderly patients, similar to that in a younger population, even though 54% of the elderly patients presented with at least one comorbidity factor.

Specifically, Shaari et al. [8] assessed postoperative complications rates in reconstructive surgery by non-pediculated flap secondary to UAT tumor exeresis in an elderly population, on a retrospective comparison between patients aged more or equal to 71 vs. less or equal to 70 years, clinically matched for comorbidity factors and tumoral staging. The rate in the former group was 48%, versus 57% in the latter, with no difference in type of complication; no difference in postoperative complications rates was found analyzing complications according to defect site, comorbidity factor or pre-operative radiation therapy. The non-pediculated flap reconstruction success rate was 100% in the former group and 94% in the latter. In the present series, the postoperative complications rate was not higher in the elderly group. One patient showed postoperative hematoma requiring surgical drainage. The rate of medical complications was, however, higher, comprising bronchopulmonary and cardiovascular involvement at equal rates. One patient died of respiratory insufficiency.

Blackwell et al. [9] also reported a higher rate of post-operative medical complications in their older age group, but with a success rate equal to that found in the group of younger patients.

Sarletti et al. [10], however, showed that higher ASA ranking was associated with higher postoperative complications rates. In their series, two patients scored ASA 1, 49 ASA 2, 45 ASA 3 and 4 ASA 4. A total of 104 flaps were used in 100 patients. The non-pediculated flap reconstruction success rate was identical to that in the general population of all ages taken together.

Finally, it is clear that, if a poorly adapted treatment option (radiation therapy, chemo(radio)therapy, surgery) is chosen, prognosis in elderly UAT tumor patients will be affected: survival did not exceed 19.9% in the specific case of patients receiving treatment that was maladapted in terms of an underestimation of pre-operative comorbidity, advanced tumor stage, age and low Karnofsky index [11].

Conclusion

Upper aerodigestive tract tumor is an aggressive malignancy requiring aggressive management. All elderly patients without medical contraindications should receive optimal treatment, without chronological age operating as an exclusion criterion. It is knowledge of comorbidity factors that finds treatment options and adaptation.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

References

- [1] Cinamon U, Hier MP, Black MJ. Age as a prognostic factor for head and neck squamous cell carcinoma: should older patients be treated differently? *J Otolaryngol* 2006;35:8–12.
- [2] Sarini J, Fournier C, Lefebvre JL, et al. Head and neck squamous cell carcinoma in elderly patients: a long term retrospective review of 273 cases. *Arch Otolaryngol Head Neck Surg* 2001;127:1089–92.
- [3] Syrigos KN, Karachalios D, Karapanagiotou EM, et al. Head and neck cancer in the elderly: An overview on the treatment modalities. *Cancer Treat Rev* 2008;70–80.
- [4] Bernardi D, Barzan L, Franchin G, et al. Treatment of head neck cancer in elderly patients: state of the art and guidelines. *Crit Rev Oncol Hematol* 2005;53:71–80.
- [5] Tsukuda M, Ishitoya J, Mikami Y, et al. Analysis of feasibility and toxicity of concurrent chemoradiotherapy with S-1 for locally advanced squamous cell carcinoma of the head and neck in elderly cases and/or cases with comorbidity. *Cancer Chemother Pharmacol* 2009;15:15–21.
- [6] Clayman GI, Eicher SA, Sicard MW, et al. Surgical outcomes on head and neck cancer patients 80 years of age and older. *Head Neck* 1998;20:216–23.
- [7] Zabrodsky M, Calbrases L, Tosdoni A, et al. Major surgery in elderly head and neck cancer patients: immediate and long term surgical and complication rates. *Surg Oncol* 2004;13:249–55.
- [8] Shaari CM, Buchbinder D, Costantino PD, et al. Complications of microvascular head and neck surgery in the elderly. *Arch Otolaryngol Head Neck Surg* 1998;124:407–11.
- [9] Blackwell KE, Azizzadeh B, Ayala C, et al. Octogenarian free flap reconstruction: complications and cost of therapy. *Otolaryngol Head Neck Surg* 2002;126:301–6.
- [10] Serletti JM, Higgins JP, Moran S, et al. Factors affecting outcome in free-tissue transfer in the elderly. *Plast Reconstr Surg* 2000;106:66–70.
- [11] Sanabria A, Carvalho AL, Vartanian JG, et al. Factors that influence treatment decision in older patients with resectable head and neck cancer. *Laryngoscope* 2007;117:835–40.