European Annals of Otorhinolaryngology, Head and Neck diseases xxx (2016) xxx–xxx

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www.em-consulte.com/en

Original article

Single-center retrospective series of fourteen patients with mucosal melanoma of the nasal cavity and paranasal sinuses

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ARTICLE INFO

Keywords:
Mucosal melanoma
Nasal cavity
Paranasal sinuses

ABSTRACT

Objectives: Mucosal melanoma of the nasal cavity and paranasal sinuses is a rare and highly aggressive tumor. We report our experience over 20 years in management of this tumor.
Patients and methods: A retrospective study included 14 patients with primary sinonasal mucosal melanoma.
Results: The series comprised 8 male and 6 female patients, with a median age at diagnosis of 67 years. Staging on the American Joint Committee on Cancer classification of sinus cancer was 14% T2, 22% T3, 75% T4a and 7% T4b. All patients underwent primary surgical treatment; 71% received adjuvant external radiotherapy. Median recurrence-free interval was 28.7 months. Two- and 5-year overall survival was 43% and 32%, respectively. Median follow-up was 43 months.
Conclusions: Mucosal melanomas of the nasal cavity and paranasal sinuses are very specific entities. Limited pathophysiological knowledge still precludes effective medium- and long-term management. Future treatment will probably be based on global adjuvant or neoadjuvant-targeted chemotherapy.

1. Introduction

Mucosal melanoma of the nasal cavity and paranasal sinuses is a rare and highly aggressive tumor. Incidence is 0.2–1 per million [1,2]. The reference attitude is presently primary surgery in resectable forms. Five-year overall survival ranges from 20% to 40% [3,4]. We report our experience over 20 years in management of this tumor.

2. Methods

The study recruited patients managed between 1994 and 2014. Inclusion criteria comprised: primary malignant melanoma of the nasal cavities or paranasal sinuses (ethmoidal, maxillary, sphenoidal or frontal), confirmed on pathologic examination. Exclusion criteria comprised history of mucosal or cutaneous melanoma. Inclusion was retrospective, based on clinical files, surgical reports, diagnostic coding and the international classification of diseases.

Study data comprised gender, age at discovery, pathology and immunohistochemistry analysis, location, date of symptom onset, date and type of first consultation, all clinical and paraclinical findings, TNM staging based on the 2010 American Joint Committee on Cancer (AJCC) classification of nasal and paranasal sinus mucosal melanoma [5], date(s) of treatment(s), operative time for resection, recurrence date and location, follow-up duration, and date of death and of last consultation. All patients were registered with the French rare head and neck cancer expert network.

Statistics and survival were analyzed on the Kaplan-Meier method.

3. Results

3.1. Patients

Fourteen patients were managed in the department for primary malignant mucosal melanoma of the nasal cavities or paranasal sinuses: 8 males, 6 females; mean age at diagnosis, 67 years. The two main presenting symptoms were nasal obstruction (64.8%: bilateral in 77.7% of cases) and epistaxis (42.8%: lateralization not recorded). Mean interval between symptom onset and consultation was about 5.5 months. Locations comprised: nasal cavity, without further anatomic detail, in 5 cases, inferior turbinate in 3, maxillary sinus in 4, and ethmoidal sinus in 2; 57% of locations were in the nasal cavities and 43% in the paranasal sinuses.

Lesion assessment systematically comprised ENT consultation, and biopsy under local or general anesthesia for pathology or

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http://dx.doi.org/10.1016/j.anorl.2016.07.003
1879-7296/

immunohistochemistry examination, plus dermatology consultation in 3 cases. Imaging assessment comprised, in 2 cases, contrast-enhanced head and neck CT and AP and lateral radiography, performed prior to the ENT consultation on prescription from the patient's community physician; in the other 13 cases, imaging comprised contrast-enhanced facial and cervico-thoracic CT, plus, in 2 cases, contrast-enhanced cerebral and abdominopelvic CT, and cervical and axillary lymph node ultrasonography. Seven patients underwent facial MRI, and 2 (managed after 2006) underwent PET-scan as part of the initial work-up.

TNM staging (AJCC 2010) [5] found no cases of T1, 2 of T2 (14%), 3 of T3 (22%), 8 of T4a (57%), and 1 of T4b (7%).

There were no cervical lymph node or remote metastases on initial assessment (N0 and M0, respectively).

3.2. Treatment

All patients underwent primary surgery: 4 (29%) with surgery alone, and 10 (71%) with adjuvant external radiation therapy. Resection was endonasal in 3 cases (22%) and external in 11 cases (78%): paralateronasal (55%), transfacial (22%), or Rouge Denker approach (18%) (Table 1). Neck dissection was not performed. All specimens underwent pathology examination.

Mean interval between first consultation and surgery was 21 days (median, 21 days).

Mean operative time on external approaches was 1 h 35 min (data for 8 out of 11 cases), with a median of 1 h 27.

Mean operative time on endonasal approaches was 2 h 25 min (data for 2 out of 3 cases), with a median also of 2 h 25 min.

Overall, postoperative complications comprised: lacrimation (43%), open scar (7%), persistent facial edema (7%), and seromucous otitis (7%).

Mean adjuvant external radiation therapy dose to the tumor site was 60.6 Gy (median, 60 Gy). Seven of these patients received conformational radiation therapy, 1 hypofractionated conformational radiation therapy, and 3 conventional radiation therapy. Two patients received preventive cervical lymph node radiation. Mean interval between surgery and radiation therapy was 58 days (median, 45 days).

No other adjuvant treatments were prescribed.

3.3. Anatomopathology

Pathology examination systematically found mucosal melanoma, achromic in 3 cases.

Immunohistochemistry data were available in 10 cases and are shown in Table 2: 80% of these cases showed 3 positive melanocyte markers: (S100 protein, HMB-45 and Melan-A).

Resection showed safe margins in 8 patients and positive margins in 2; in 4 cases, margins were unidentifiable. One patient showed vascular emboli. There was no perineural sheathing.

3.4. Surveillance

Patients were followed up every 3 months with complete ENT examination including endoscopy. From 2010, dermatologic examination was performed at least once yearly, at a rate decided by the dermatology team. Certain complementary examinations were prescribed in case of clinically suspected local or metastatic recurrence, mainly comprising facial and/or cervical CT, facial MRI and PET. After 2007, head and neck CT was performed systematically 2 months after the end of surgery or radiation therapy, then yearly in the absence of clinical signs of recurrence.

Three patients were lost to follow-up, including 1 after diagnosis of recurrence.

Mean follow-up was 43 months (median, 18 months).

Table 1
Description, progression and treatment of lesions in 14 patients.

Patient	Gender	Age (yrs)	TNM	Location	Surgery	RT	R	Local recurrence	Metastatic recurrence	Progression
1	M	70	T2	Maxillary sinus	RD	Yes	0	Yes		LFU at 206 mo
2	M	87	T3	Inferior turbinate	E	No	–	Yes		Death at 14 mo
3	M	53	T4a	Nasal cavity	RD	No	–	Yes	Single	Death at 21 mo
4	F	74	T4a	Maxillary sinus	PLN	Yes	0		Multiple	LFU at 24 mo
5	F	50	T3	Nasal cavity	TF	No	0	Yes	Multiple	Death at 12 mo
6	F	50	T3	Nasal cavity	PLN	No	0	Yes	Single	Alive at 120 mo
7	F	64	T4a	Maxillary sinus	TF	Yes	–		Multiple	Death at 10 mo
8	M	67	T4a	Ethmoidal sinus	PLN	Yes	1	Yes	Multiple	Death at 48 mo
9	M	72	T4a	Nasal cavity	PLN	Yes	0		Multiple	Death at 25 mo
10	M	73	T4a	Maxillary sinus	TF	Yes	–		Single	Death at 5 mo
11	M	59	T4b	Ethmoidal sinus	PLN	Yes	1		Multiple	Death at 8 mo
12	F	77	T4a	Inferior turbinate	E	Yes	0			Alive at 15 mo
13	M	67	T2	Nasal cavity	E	Yes	0			Alive at 6 mo
14	F	72	T4a	Inferior turbinate	PLN	Yes	0	Yes		LFU at 91 mo

Surgery: approach: E: endonasal; PLN: paralateronasal; TF: transfacial; RD: Rouge Denker; RT: postoperative radiation therapy; R: resection margins; R0: safe; R1: microscopically positive; LFU: lost to follow-up.

Table 2
Immunohistochemistry results in malignant melanoma in 10 of the 14 patients.

Patient	Anti-S100 protein	Anti-HMB-45	Anti-Melan-A	Anti-Vimentin	Anti-AE-1	Anti-AE-3	Anti-CD-34	Anti-CD-45	Anti-CD-20
1	+	+	+						
6		+		+			–	–	
7	+	+	+		–	–			
8	+	+	+		–	–			
9	+	+	+		–	–			
10	+	+	+		–	–			
11	+	+	+		–	–			–
12	+	+	+		–	–			
13	+	+	+		–	–			
14	+	–	+	+	–	–			

Please cite this article in press as: Letievant J-C, et al. Single-center retrospective series of fourteen patients with mucosal melanoma of the nasal cavity and paranasal sinuses. European Annals of Otorhinolaryngology, Head and Neck diseases (2016), http://dx.doi.org/10.1016/j.anorl.2016.07.003