Malignant melanoma of the sinonasal mucosa: Two case reports and a review

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Abstract

Malignant melanoma of the sinonasal cavity is an uncommon disease, and therefore a limited amount of data exists regarding its optimal treatment. The course of the disease is highly variable. Individual survival is also highly variable, but the overall prognosis is poor, probably because patients generally present at a late stage and because the disease has a proclivity for distant dissemination. We describe 2 recent cases of primary malignant melanoma of the sinonasal mucosa, and we review the literature.

Introduction

Malignant melanoma of the sinonasal mucosa is an uncommon disease, and survival is poor. Diagnosis is often delayed because the onset of symptoms is insidious. The paucity of reported cases limits researchers’ ability to perform randomized, prospective trials. Therefore, retrospective reviews and case reports are important for assessing the disease and its response to treatment. With that in mind, we describe 2 new cases of malignant melanoma of the sinonasal mucosa that were recently treated at our institution during a 4-month period.

Case reports

Patient 1. A 77-year-old man presented to the emergency department with recurrent epistaxis from his right naris. Upon his referral to the otolaryngology clinic, a friable lesion was noted in his right nasal vault. The results of a biopsy taken at that time—the nasal mucosa was positive for HMB-45 and melan-A (figure 1, A and B) and negative for S-100, pan-cytokeratin, synaptophysin, chromogranins, and Epstein-Barr virus (EBV) immunoperoxidase—were consistent with malignant melanoma. Computed tomography (CT) of the sinuses revealed the presence of an expansile lesion in the right ethmoid air cell with extension into the right nasal cavity and orbit (figure 1, C). Positron-emission tomography (PET) demonstrated uptake in the right ethmoid sinus, right submandibular gland, right and left jugular digastric lymph nodes, and right adrenal gland.

The patient underwent endoscopic sinus surgery for debulking of the tumor in the right ethmoid cavity. Postoperatively, however, he developed a rapid recurrence of the tumor, and he continued to experience right-sided epistaxis. The recurrent tumor was aggressive in nature, rapidly enlarging and extending into the orbit. The patient was treated with nasal packing and repeat surgical debulkings. Following the third debulking, he had no further problems with epistaxis, even though his nasal cavity was filled with tumor. Twelve months after presentation, he died of metastatic disease.

Patient 2. A 67-year-old man presented to the otolaryngology clinic with a 3-month history of left nasal obstruction. CT of the paranasal sinuses revealed opacification of the left nasal cavity and portions of the left paranasal sinuses (figure 2, A). The patient underwent endoscopic sinus surgery for tissue debulking. Findings on biopsy were consistent with malignant melanoma.

The exact origin of the tumor was difficult to ascertain. The biopsy sample exhibited pleomorphic and epithelioid subtype characteristics with nodular and flat spreading growth patterns (figure 2, B). Immunohistochemical staining was positive for HMB-45 and S-100 and negative for pan-cytokeratin, epithelial membrane antigen, synaptophysin, chromogranins, and EBV immunoperoxidase. CT of the neck and chest and a PET scan were all negative for distant disease.

Four weeks postoperatively, the patient developed two nodules on his left septum (figure 2, C). He was taken
back to the operating room for resection of the septum and wide local excision of the nasal mucosa. Final margins were clear of disease. The patient completed a course of postoperative radiation therapy. Nine months after presentation, he was being monitored closely for recurrence.

Discussion

Malignant melanoma of the sinonasal mucosa accounts for only 1.3% of all malignant melanomas. Most mucosal melanomas (55%) occur in the head and neck. The incidence of the disease is roughly equal among men and women, and most patients with the disease present between the ages of 60 and 80 years. Symptoms on presentation can include nasal obstruction, epistaxis, swelling of the nose or the presence of a visible mass at the vestibule, pain, and nasal discharge. Diplopia and proptosis have been documented as late findings. Patients with mucosal melanoma tend to present later in the disease course than do patients with cutaneous melanoma, most likely because their symptoms are often associated with benign conditions that may be ignored early on. Persistent symptoms warrant a thorough evaluation to exclude neoplastic disease.

The diagnosis is dependent on histologic findings. Mucosal melanoma differs from cutaneous melanoma in that the former frequently lacks melanin pigment. Also, a lack of histologic landmarks for mucosal melanoma precludes accurate staging; there is no epidermis-to-dermis interface, making it difficult to determine the tumor’s depth of invasion. Many surgical specimens become fragmented upon removal.

Microscopic findings include surface deviation, pagetoid spread, pigmentation, giant-cell formation, and necrosis. Other findings include a spindle-shaped, peritheliomatous, solid-sheet, or meningothelial growth pattern and a spindle-cell, epithelioid, plasmacytoid, rhabdoid, or undifferentiated subtype. Immunohistochemical stains aid in the diagnosis. S-100 protein, HMB-45 (gp100), tyrosine, melan-A, microphthalmia transcription factor, vimentin, neuron-specific enolase, CD117, CD99, synaptophysin, CD56, and CD57 stains have all been identified in malignant melanoma.

The uncommon nature of sinonasal malignant melanoma makes it difficult to predict its outcome, but we do know that the prognosis is poor. Suggested poor prognostic
factors include age greater than 60 years at presentation, presentation with obstructive symptoms only, the location of a tumor in the nasopharynx, an undifferentiated histology, more than 10 mitotic figures per 10 high-power field, and the development of a recurrence. Additional poor prognostic factors include advanced clinical stage at presentation, tumor thickness greater than 5 mm, the presence of vascular invasion, and the development of distant metastases. The presence of positive lymph nodes has also been indicated as a poor prognostic indicator. Early stage at presentation has been shown to predict a more favorable outcome.

Aggressive surgery aimed at achieving local control is the preferred method of treatment. Resection options include radical surgery (partial or total maxillectomy with or without orbit exenteration) or local resection (debulking or wide local excision). Total surgical excision is not always possible because of the location of the tumor and adjacent structures. Aggressive resection can achieve local control. Local control has been shown to increase survival in some studies.

The interval between the treatment of the initial tumor and its recurrence is highly variable; the reported range of local recurrences is 1 to 12-plus years. Although radiation therapy alone has been shown to result in complete or partial control initially, neither radiation nor chemotherapy, singly or combined, has been shown to affect overall survival. In a retrospective review of 69 patients, Temam et al found that the addition of postoperative radiation therapy improved local control but worsened overall survival. Conversely, in a review of 13 patients, Kingdom and Kaplan reported that postoperative radiation therapy was associated with better overall survival and better disease-free survival. Chemotherapy has been shown to provide little or no benefit in the treatment of the disease. Immunotherapy is still experimental.

Reported 5-year survival rates for patients with mucosal melanoma range from 10 to 47% (table). Ten-year survival rates range from 20 to 24.3%. Disease-related mortality is associated with local or regional recurrence with metastasis. The common sites of metastasis are the lung, liver, bone, and brain.

References