**Sinonasal melanoma: shifts in paradigm with open versus endoscopic surgery**

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**Background**

Sinonasal melanomas are rare tumors that comprise less than 1% of all head and neck melanomas and 4% of all mucosal melanomas. The prognosis is noted to be grim with 5 year survival of 13-45%. Endoscopic techniques have recently been used to treat sinonasal melanomas and show promising early results.

**Objectives**

1. Study results from surgical resection (open and endoscopic)
2. Present key points in oncologic resection with endoscopic technique

**Study Design and Methods**

A retrospective review of the electronic medical records and surgical database for all cases of mucosal melanoma treated from 1994-2011 was conducted. Details of case selection and technique utilized with endoscopic approaches are also presented.

**Results**

Sixteen patients with sinonasal melanoma underwent surgery (11 women and 5 men). Mean age was 73.8 years (range 47-92). Average follow-up was 24.4 months (range 2-151). Eight patients underwent open resection, and the other eight endoscopic. Two patients in the open cohort presented with distant metastasis; all other patients underwent surgery with curative intent. Overall, 8 patients were noted to be alive (50%) at mean follow-up of 24.4 months (range 2-151). In the endoscopic group, average follow-up was 18.1 months (6-34), with 6 patients alive and disease free. Five patients (63%) had no recurrence and 2 died of disease at 6 and 32 months. There was one local recurrence (14.3%) at 21 months (patient died after refusing surgery), one regional neck recurrence at 12 months (salvaged and alive at 5 months) and one brain metastasis at 4 months post-operatively (dead). In the open group, mean follow up was 29.5 months (range 2-151 months). Two patients (22%) are alive, while 6 died at average of 11.0 months (range 2-33). Three of 8 patients had local recurrences (37.5%) at an average of 10.7 months (range 9-12), and 5 (63%) patients developed distant metastases at an average of 9.6 months (range 4-13). Three patients with local recurrence also had distant metastasis. No statistically significant difference was noted between endoscopic and open cohorts in terms of recurrence, local recurrence, or survival. The average hospital stay was 1 day (range 0-4) for the endoscopic group and 3.7 days (range 1-13) for open group. No complications were noted in the endoscopic group. One patient in the open cohort required urgent decompression for a subdural hematoma.

**Key Points in Endoscopic Resection**

- **Localization of Tumor Attachment**
  - Meticulous hemostasis and visualization are critical. Identification and wide local resection of the attachment of the tumor are key. Images A-D show a left sinonasal melanoma. This was carefully debulked under a magnified endoscopic view, avoiding local trauma and seeking the site of attachment. The suction on a microdebrider pulls tumor away from the nasal walls and assists with the debulking as well as identification of attachment sites: A: Tumor B: Careful debulking reveals site of tumor attachment. C & D: Tumor attachment (inferior turbinate). The entire inferior turbinate & inferior medial wall was then resected with negative margins.

- **Postoperative surveillance**
  - The endoscopic access route creates a path for routine disease surveillance for early detection of recurrence as in this patient who underwent endoscopic anterior craniofacial resection (ACFR). A. Dural resection. B. Healed skull base with nasoseptal flap at 2 years. C. Endoscopy in 3 years without recurrence with endoscopic ACFR.

**Discussion**

Sinonasal melanoma continues to have a grave prognosis with studies reporting a 5-year survival rate ranging from 13-45%. In our study, overall survival was 50% at 24.4 month average follow-up (range 2-151 months). There was no significant difference between patients that underwent endoscopic or open resections in terms of loco-regional recurrence, distant metastasis and survival, even when excluding the 2 patients in the open group that had distant metastases at time of presentation. The endoscopic group had a much shorter follow-up period (average 18.1 versus 29.5 months) since the approach was utilized only since 2008. Thus the long-term recurrence and survival in this group is not available. Contraindications to use of endoscopic techniques include soft tissue involvement, extensive brain involvement and lateral supraorbital extension.

**Conclusions**

Sinonasal melanoma continues to have a grave prognosis. Short-term results with endoscopic approaches show at least comparable results to open techniques with respect to disease free survival, local recurrence and systemic metastasis. This data should be interpreted with caution as long-term follow up is not available. Although endoscopic techniques offer decreased morbidity and shorter hospitalization, the real benefit from these approaches come from superior visualization and access into areas difficult to reach by open techniques. The endoscopic technique may be utilized in conjunction with open approaches. In summary, choice of approach should be guided by one that offers the best access to oncologic resection.

**References**