Combined Transcranial, Endonasal, Endorbital Craniofacial Resection of Invasive Sinonasal Undifferentiated Carcinoma

A. Cherukupalli[1], A. Gomati[1], J. Kam[2], V. Yin[3], S. Makarenko[2], A. Janjua[1]

1 – Division of Otolaryngology-Head & Neck Surgery, Department of Surgery, University of British Columbia, Canada
2 – Division of Neurosurgery, Department of Surgery, University of British Columbia, Canada
3 – Department of Ophthalmology & Visual Sciences, University of British Columbia, Canada

Clinical Picture

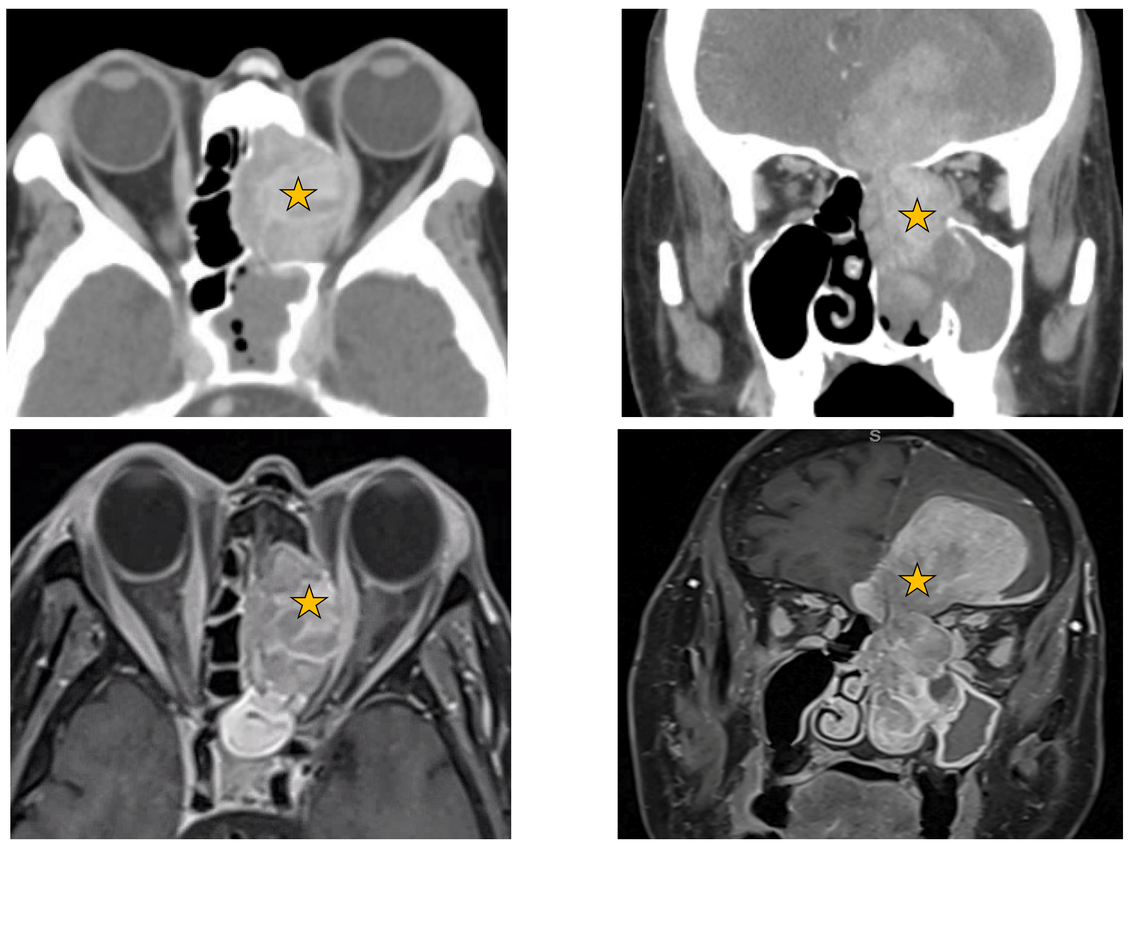
74F Admitted to hospital for confusion

- Sever headache and nasal obstruction x 1 year
- No epistaxis
- VA 20/30 BL, normal EOM, normal fundi BL
- CN II-XII intact

No relevant past medical history, medications

Non-smoker, no alcohol intake or recreational drugs and completely independent at home prior to hospital admission

Pre-operative Imaging

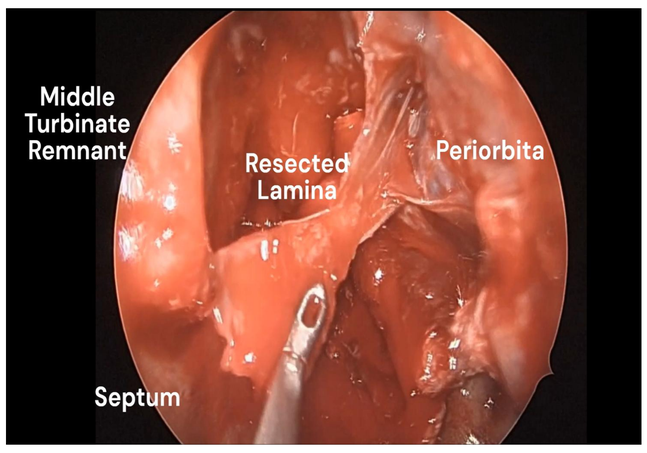


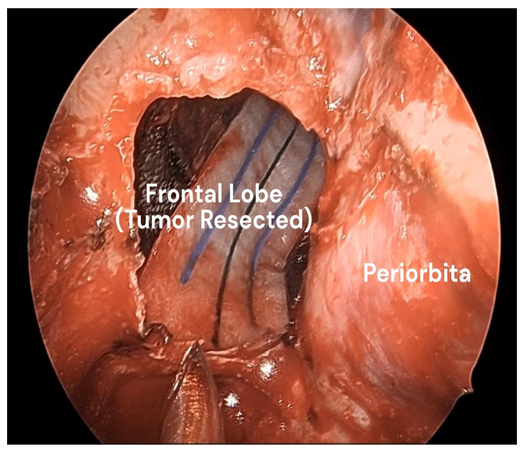
Endonasal Approach

The tumor was visualized extending from the middle meatus to the floor of the nose, along the lamina papyrcea and towards the cranial base superiorly and posteriorly

Surgical steps:

- Tumor debulking and middle turbinate resection
- Elevation of tumor off lateral wall and removal of lamina with protection of orbital contents due to silastic stent placement
- AEA artery ligation
- Draf III outside-in approach to frontal sinus to expose cranial base
- Thinning of cranial base using drill and cold steel to resect bone and expose to Neurosurgery above
- With view from Neurosurgery, ENT and Opthalmology all borders of the tumor were resected while protecting critical structures





Reconstruction and Post-op

Ophthalmology placed orbital fat back into correct position and TFL graft placed overtop periorbita laterally

Duragen placed overtop resected dura at cranial base

- Larger TFL graft placed overtop and draped into common sphenoid cavity

Post-op:

- Complete resection of tumor and return to functional status
- Complete re-mucosalization at 1-year post-op post chemoradiation therapy

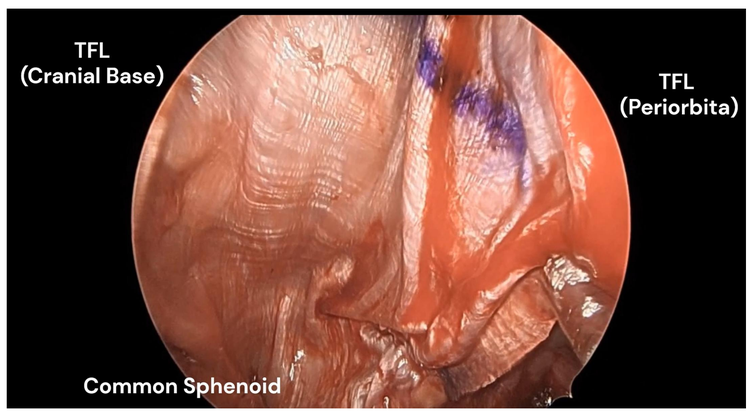
Neurosurgical and Endorbital Approach

Neurosurgery

- Fronto-temporal craniotomy performed, and dura incised to expose the tumor abutting the frontal lobe and peel it off superiorly

Ophthalmology

- Retrocaruncular approach to access orbit and move contents laterally
- Silastic stent placed to protect the orbital contents from the tumor medially during sinonasal portion of the resection



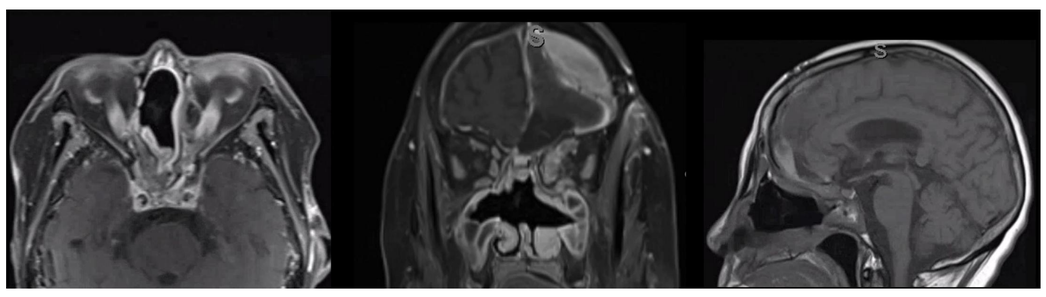
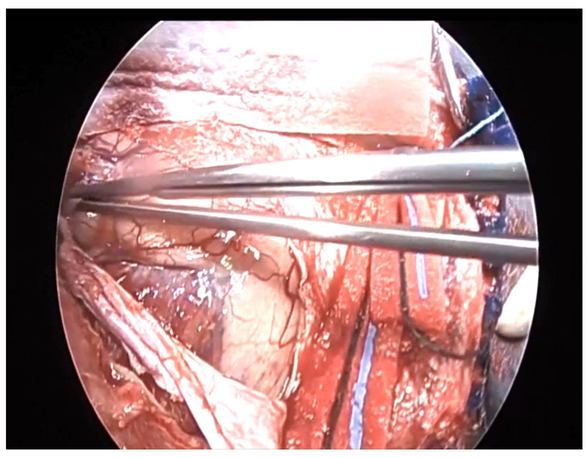
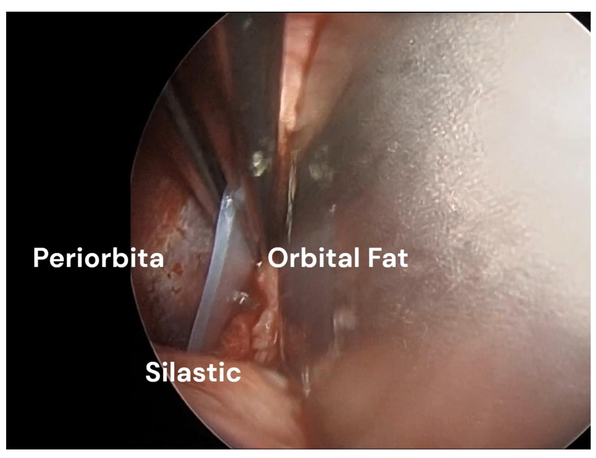


Figure – 2-month post-op MRI showing complete resection of tumor





Conclusions

- Approach to large SNUC requires a multidisciplinary approach
- Multiple points of operative access provides adequate visualization of tumor and oncologic resection with preservation of critical structures
- Surgical resection with adjuvant chemoradiation can drastically improve the post-operative outcomes of these patients

Contact

Dr. Jeremy Kam
Division of Neurosurgery,
Division of Neurosurgery
11th Floor, 2775 Laurel Street
Vancouver, BC Canada V5Z 1M9
drjeremykam@gmail.com
Tel 604 875 4111 ex 23119