

Lateral Temporal Bone Resection for Osteosarcoma

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Abstract

This video demonstrates a lateral temporal bone resection performed as part of a combined approach with head and neck surgery for management of a large mandibular osteosarcoma. The combined approach provided access to the infratemporal fossa for complete resection of the tumor.

Case Presentation

40 year old Male:

- No significant medical history
- Non-smoker, non-drinker
- With left mandible osteosarcoma treated initially with
 - Chemotherapy (ifosfamide, doxorubicin, cisplatin) and Radiation
- With subsequent growth, presenting for salvage resection and reconstruction

Pre-op

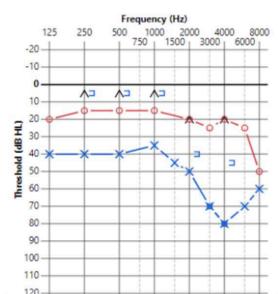


Figure 1. Audiogram with left moderate to severe mixed hearing loss



Figure 2. Pre-operative CT Scan

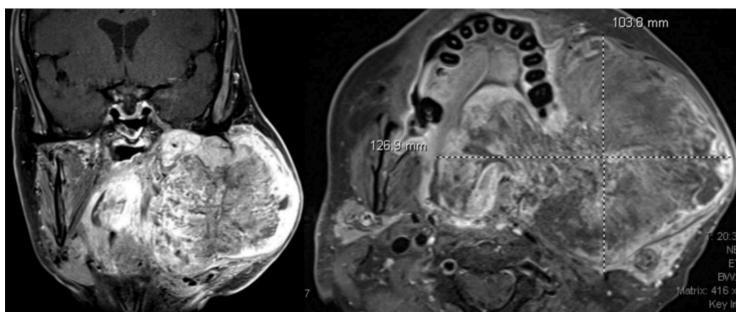


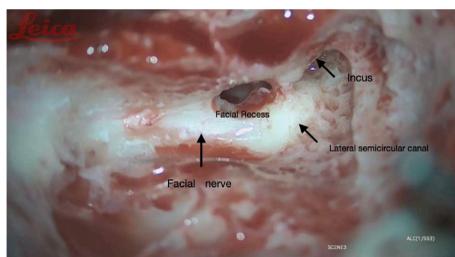
Figure 3. Pre-operative MRI

CT and MRI imaging demonstrated an erosive mass involving the infratemporal fossa, as well as the masseter, parapharyngeal, submandibular, and parotid spaces.

Procedure



1. Initial exposure of the mastoid cortex after soft tissue resection and mandibulectomy



2. Mastoidectomy was done exposing the mastoid segment of facial nerve to the stylo-mastoid foramen, facial recess, and lateral semicircular canal, with posterior tympanotomy through the facial recess.

The incudostapedial joint was then severed, the incus removed, and the tensor tympani tendon sharply cut.

Procedure



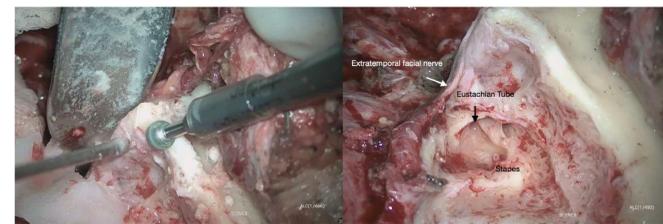
3. The superior trough was drilled between the tegmen and ear canal until the glenoid fossa was encountered anteriorly.



4. The inferior trough was drilled anterior to the facial nerve along the curvature of external auditory canal by following the annulus until the glenoid fossa was encountered anteriorly



5. Complete circumferential drilling yielded an island of external auditory canal bone, which was fractured anteriorly and removed en bloc



6. The zygomatic root and tegmen were smoothed down



7. The eustachian tube was obliterated

Conclusion



The lateral temporal bone resection as part of a combined approach with head and neck surgery, allowed for access to the infratemporal fossa for complete resection of the mandibular osteosarcoma

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