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Mucoepidermoid Carcinoma of the Temporal Bone: A Rare Cause of Ear Pain and Facial Palsy

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ABSTRACT

A patient with history of Right Chronic Otitis Media – Mucosal type for 6 years presented with a history of right ear pain and deviation of angle of mouth. We proceeded with surgical exploration and a mass was seen in the mastoid cavity. Histopathology studies showed mucoepidermoid carcinoma. Patient underwent post surgical radiotherapy and further CT studies showed no features of residual/recurrent lesion.

Keywords: Ear Pain, Facial Palsy

*See End Note for complete author details

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INTRODUCTION

Mucoepidermoid carcinoma of Temporal bone is a rare, malignant salivary gland tumor that can occur in the temporal bone which constitutes less than 1% of temporal bone malignancies.[1] This usually originates from the salivary gland tissue, composed of mucous, epidermoid and intermediate cells.[2-4] Major symptoms include hearing loss, ear pain, facial weakness and swelling. Treatment include surgery followed by radiation and chemotherapy and progress depends on tumour size and extend of invasion. The overall survival rate is 50-60%.

CASE REPORT

A 63 year old male smoker with a history of Right Chronic Otitis Media – Mucosal type for past 6 years presented with a 3 month history of right ear pain. This was accompanied by occasional bloody discharge from right ear about 3 episodes during the past 3 months, inability to close right eye and deviation of angle of mouth to left for 10 days. The patient also had a history of weight loss and fatigue for past 2 months. When enquired about addictions it was told that he was a smoker with almost 20 cigarettes daily.

On examination features suggestive of Grade II LMN facial nerve palsy was noted on right side. Right tympanic membrane showed large central perforation with a bulge seen from middle ear- promontory **(Figure 1).** Left tympanic membrane was intact. Post aural area showed no swellings and neck examination also showed no features of cervical lymphadenopathy.

Based on the complaints and examination findings the Differential Diagnosis were mastoiditis (complication of chronic otitis media), malignancy of temporal bone (squamous cell carcinoma>mucoepidermoid carcinoma) and therefore we proceeded with further investigations.

Pure Tone Audiogram showed mild mixed hearing loss on both ears of 33dBHL = Right ear; 30 dBHL on left ear. High Resolution CT temporal bone showed **(Figure 2)** mild enhancing soft tissue involving right mastoid causing erosion of air cells, tegmen mastoidium, basiocciput and facial canal. MRI brain showed **(Figure 3)** enhancing soft tissue lesion in right mastoid

History (R Chronic otitis media with ear pain & facial palsy)
↓
Facial nerve examination
↓
Otoendoscopy (Right ear)
↓
HRCT temporal bone followed by MRI brain
↓
Right mastoid exploration
↓
excision of mass in toto
↓
Histopathological examination

Diagram 1. Diagnostic Flowchart

Figure 1. Otoendoscopy of right ear

with extension and signal characteristics, s/o malignant etiology. **(Diagram 1. Diagnostic Flowchart)**

We therefore had proceeded with right mastoid exploration **(Figure 4a-4d).** Right William Wilde incision was made and cortical mastoidectomy was done following which a mass was seen in the mastoid cavity while drilling, which was sent for histopathology examination. The extent of drilling was superiorly upto tegmen, posteriorly sigmoid sinus, anteriorly facial nerve, lateral semi circular canal, inferomedially dura of posterior cranial fossa. Facial nerve preservation was attempted during mastoidectomy. Wound was sutured in layers and post operative period was eventful. Histopathological features **(Figure 5)** showed carcinoma with both squamous and mucinous component with possible diagnosis of Muco epidermoidal carcinoma. Immuno Histo chemistry showed the carcinoma to be of low grade.

Arriaga staging was applied for this temporal bone malignancy as T4N0- Stage IV. Patient was administered radiotherapy of 60Gy in 30 fractions with concurrent cisplatin (in view of infiltrated disease) and is under regular 3 monthly follow up. CT taken further after the last cycle of radiotherapy showed no features of residual/recurrent lesions. During Follow up period features of LMN palsy also got subsided.

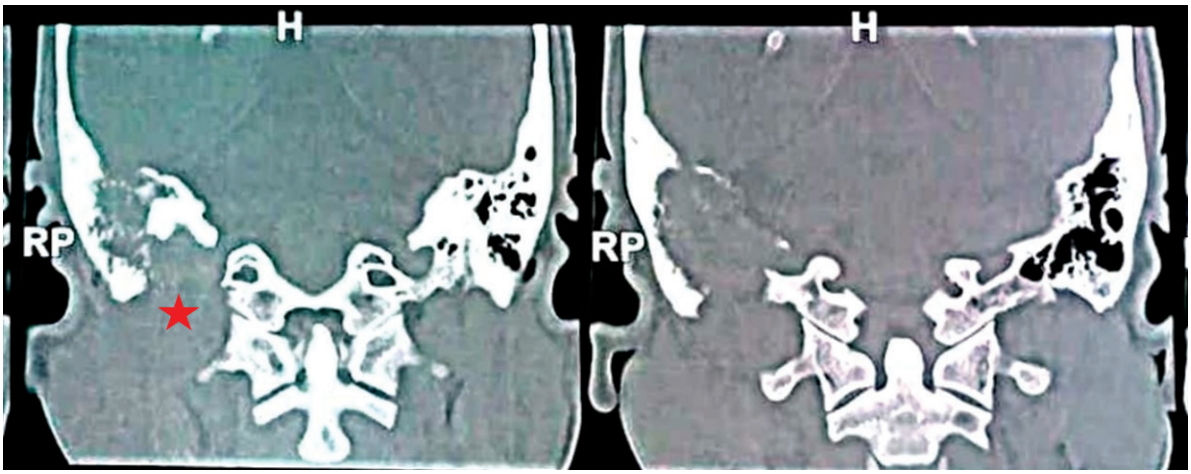

Figure 2. High resolution CT of temporal bone
★ **--Shows facial canal erosion**

Figure 3. Magnetic Resonance Imaging - Brain

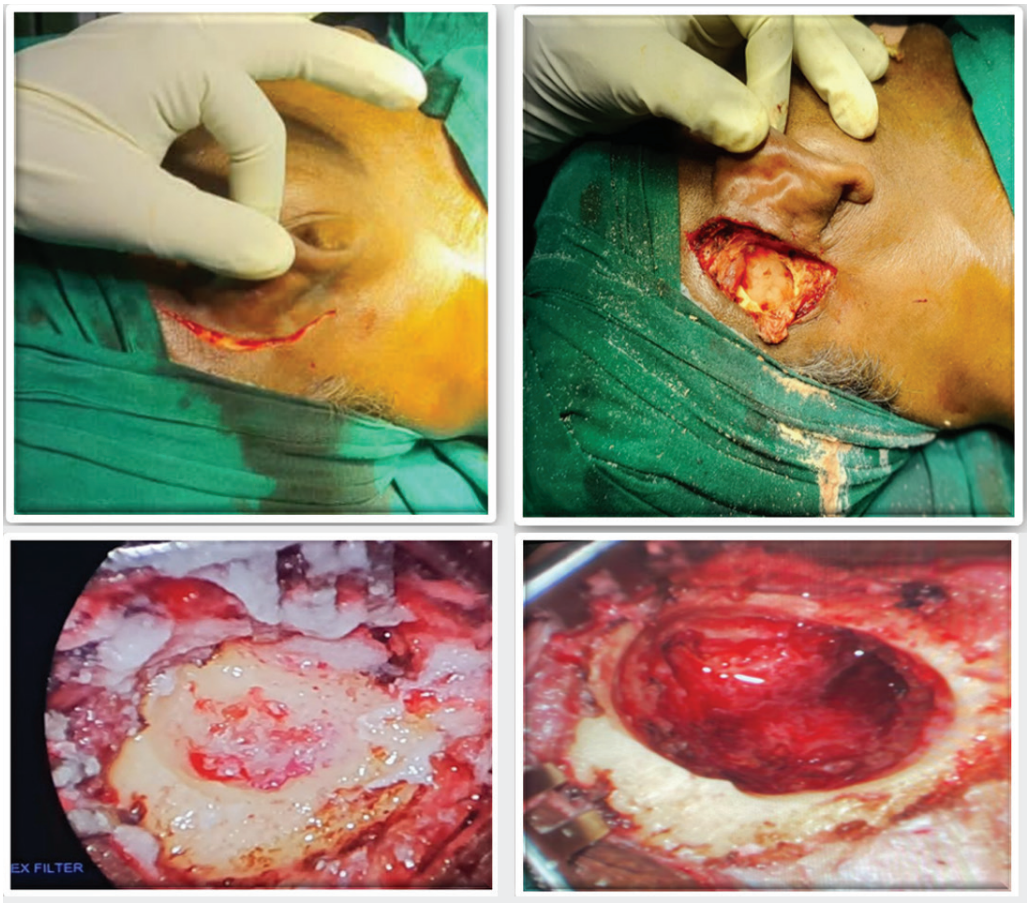

Figure 4. 4(a) Post aural incision; 4(b) Cortical mastoidectomy; 4(c) Mass visualised; 4(d) Mass excised in toto

Patient consent was obtained for conducting all the procedures involved in the study.

DISCUSSION

Temporal Bone Neoplasm is 1-0 benign/1-0 malignant in nature. Malignancies of temporal bone is rare and aggressive – 0.2% head and neck tumours. The most common type is Squamous cell carcinoma where as Muco epidermoid carcinoma is common in the major and minor salivary glands. Mucoepidermoid carcinoma of temporal bone is very rare. Research has shown that Low-grade MECs have a significantly better prognosis, with 5 year survival rates approaching 98.8%. In contrast, high-grade MECs have a much lower 5-year survival rate. But in our case it has been 2 years since our patient has received last fraction of radiation and is under 3 month follow up. In follow up period patient shows no features of residual / recurrent disease.

According to study by Bhattacharjee A et al, delay in diagnosis, masking of the disease by infection, and patient's noncompliance to treatment affected the outcome. However in our study as the disease was diagnosed earlier and since the patient and bystanders were fully in compliance to treatment, this has not affected outcome of our study.

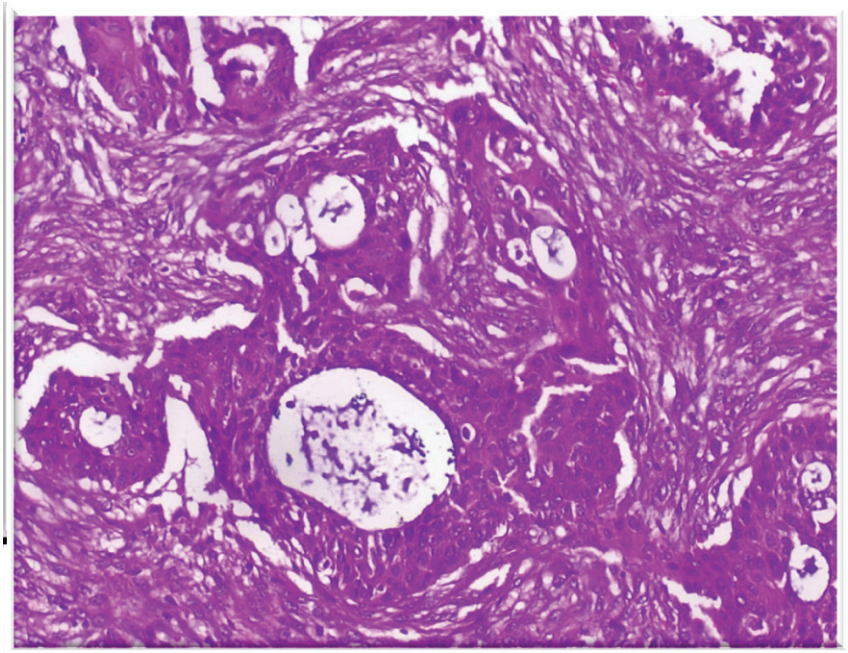

Figure 4. Histopathology picture showing carcinoma with both squamous and mucinous

END NOTE

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Conflict of Interest : None declared

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