Journal of Research in Medical and Dental Science
2021, Volume 9, Issue 11, Page No: 266-268

Available Online at: www.jrmds.in
eISSN No.2347-2367: pISSN No.2347-2545

A Rare Case of Squamous Cell Carcinoma of External Auditory Canal

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ABSTRACT

With an annual incidence of 1 to 6 occurrences per million persons, squamous cell carcinoma of the temporal bone and external auditory canal is a rather rare tumour. This anatomically complex region yields three-dimensional specimens that are challenging to analyse macroscopically and microscopically. We present a case of squamous cell carcinoma of the external auditory canal in a 50-year-old woman who had a 10-day history of right ear ache with serosanguinous discharge that had been on and off for three months. Due to its significant expansion into the middle ear, her tumour was deemed unrespectable at the time of diagnosis, and she received palliative chemotherapy and radiation therapy.

Key words: Tumour, Chemotherapy, Radiation therapy

HOW TO CITE THIS ARTICLE: MK Rajasekar, Nithya Balasubramanian, Sarenya, A Rare Case of Squamous Cell Carcinoma of External Auditory Canal, J Res Med Dent Sci, 2021, 9(11): 266-268

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Received: 06/10/2021
Accepted: 15/11/2021

INTRODUCTION

Carcinoma of the temporal bone is extremely rare, accounting for less than 0.3 percent of all head and neck cancers, with an annual incidence of 0.8-1/million. SCC of the EAC and temporal bone is a relatively rare tumour that accounts for around 0.2 percent of all head and neck tumours, with an annual incidence of 1-6 occurrences per million. This is a condition that affects the elderly, most usually in their seventh decade.

The main etiologic factor for SCC of the temporal bone and EAC is long-term chronic otitis media, which explains the average age of presentation in the elderly, but our case came with a mass in his second decade of life without any history of otorrhoea.

The other risk factors are chronic dermatitis, cholesteatoma, history of irradiation and occupation like radium dial painter. None of these risk factors were present in our patient.
Otalgia is the most common presenting complaint and the EAC mass is the most common mass. Other clinical features include hearing loss, headache, facial numbness, hoarseness, dysphagia, blood stained otorrhoea, facial palsy, other cranial nerve palsy [1-6].

CASE HISTORY

A 50 year old female presented to the Department of ENT, in Sree Balaji Medical College and Hospital with a 10 day history of right ear pain. The pain was associated with sero sanguinous discharge on and off since three months. A CT scan of the temporal bone was done to see the extent of the tumour (Figures 1-3).

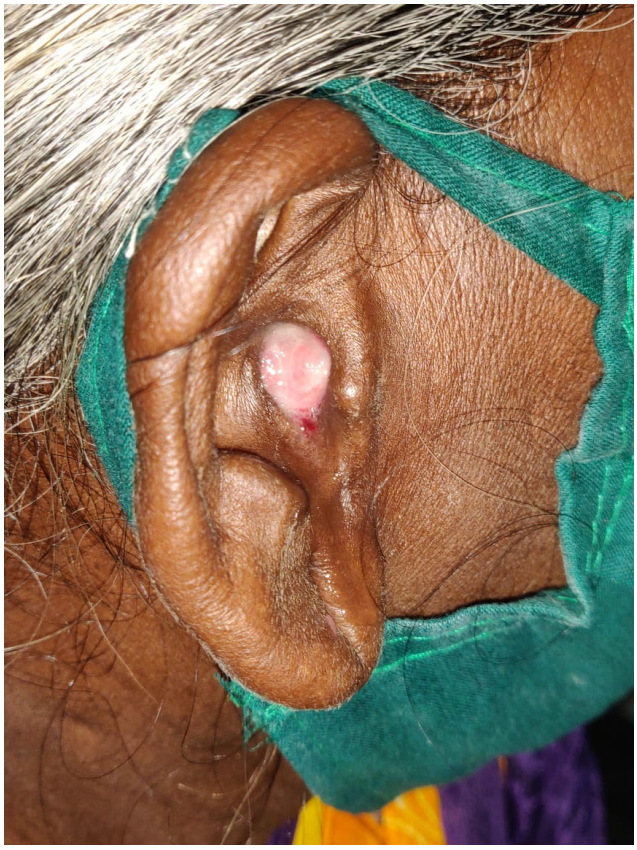


Figure 1: Before CT scan.

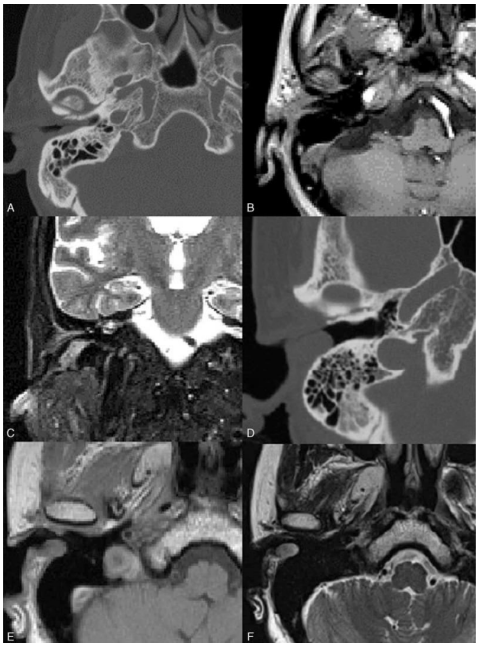
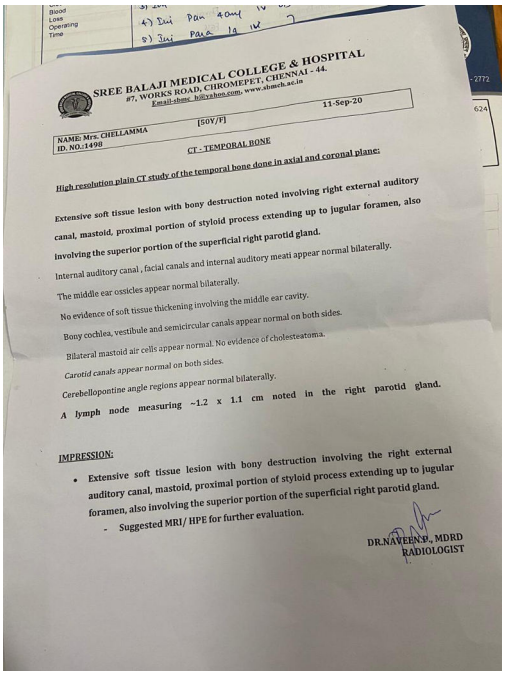


Figure 2: CT scan showing the tumour.



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CT - TEMPORAL BONE

High resolution plain CT study of the temporal bone done in axial and coronal plane:

Extensive soft tissue lesion with bony destruction noted involving right external auditory canal, mastoid, proximal portion of styloid process extending up to jugular foramen, also involving the superior portion of the superficial right parotid gland.

Internal auditory canal , facial canals and internal auditory meati appear normal bilaterally.

The middle ear ossicles appear normal bilaterally.

No evidence of soft tissue thickening involving the middle ear cavity.

Bony cochlea, vestibule and semicircular canals appear normal on both sides.

Bilateral mastoid air cells appear normal. No evidence of cholesteatoma.

Carotid canals appear normal on both sides.

Cerebellopontine angle regions appear normal bilaterally.

A lymph node measuring ~1.2 x 1.1 cm noted in the right parotid gland.

IMPRESSION:

- Extensive soft tissue lesion with bony destruction involving the right external auditory canal, mastoid, proximal portion of styloid process extending up to jugular foramen, also involving the superior portion of the superficial right parotid gland.
  - Suggested MRI/ HPE for further evaluation.

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RADIOLOGIST

Figure 3: CT report.

DISCUSSION

Squamous cell carcinoma of the external auditory canal is staged based on the amount of tumour dissemination in the ear and temporal bone. According to the Pittsburgh tumour staging system for squamous cell carcinoma of the temporal bone, T4 tumours have eroded the cochlear, petrous apex, medial wall of the middle ear, with extension of the carotid canal, jugular foramen, or dura. Facial nerve tumours should be included in the classification of T4 tumours, according to Moody et al. In the modified Pittsburgh staging of squamous cell cancer of the temporal bone, patients with facial paralysis are classed as T4 tumours.

The stage of squamous cell carcinoma of the external auditory canal, which includes lymph node metastases and facial nerve involvement, determines how the tumour is treated. The most common treatment is a combination of en bloc surgical resection of the main tumour with tumor-free surgical margins, as well as postoperative chemotherapy and radiotherapy. A technique known as a lateral temporal bone resection (LTBR) or a subtotal temporal bone resection (STBR) is very common. The presence of a positive margin, involvement of the dural and cranial nerves, and facial nerve paralysis are all bad prognosis indicators. Individuals with squamous cell carcinoma of the temporal bone have a 5-year survival rate that ranges from 40% to 70%, but can reach 20% in advanced stages.

Surgical removal of these tumours had a high risk of morbidity and mortality in the past. These fatality rates have decreased dramatically from Lewis's series to the more recent series of Moffat et al and Yin and colleagues as a result of improvements in surgery and radiotherapy in the prior three decades. Overall 5-year survival rates range from 40% to 70%, however when advanced phases are taken into account, barely 20% survive. Local recurrence, not regional or metastatic disease, is the leading cause of death.

Treatment for EAC squamous carcinoma is determined by the degree of the illness, both locally and regionally, as well as lymph node metastases. En bloc surgical excision with tumor-free cut margins and post-operative chemo radiotherapy are the goals of the treatment. The most common operation is a post-auricular lateral temporal bone excision for tumours restricted to the EAC. The procedure entails a complete mastoidectomy with an expanded facial recess that extends anteriorly until the root of the zygoma. The incudostapedial joint is separated, and the incus is removed; the bone anterior to the tympanic annulus and the vertical facial are removed until the stylomastoid foramen is reached; the parotidectomy and neck dissection are completed, and the specimen is released with a bone cut lateral to the styloid process. Abdominal fat is used to close the deformity.

Tumors of the middle ear and mastoid are treated with subtotal temporal bone excision. The whole pinna and temporal bone are removed lateral to intracranial artery calcification and the carotid artery. A rectus abdominus free flap or a trapezius flap is used to close the deficiency [7-11].

CONCLUSION

Malignant neoplasms of the temporal bone are extremely uncommon, leading to a lack of suspicion, especially in children, as in our case. This is due to the fact that more prevalent disorders such as otitis external, cholesteatoma, and aural polyp are suspected and treated as such. However, a high level of suspicion, early tissue biopsy, and radio imaging are essential for early detection and a better prognosis of these cancers.

In this case, the patient's tumour had spread far and wide, making it unrespectable. As palliative care, the patient got ten cycles of radiotherapy and chemotherapy.

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