CASE REPORT

Squamous Cell Carcinoma of External Auditory Canal Arising from CSOM: A Rare Presentation
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ABSTRACT
Malignant tumors of external auditory canal and of middle ear due to chronic suppurative otitis media (CSOM) are rare and complicated with the reported incidence of 1 out of 4000 cases. Since it is related to poor prognosis, therefore, early diagnosis may help the health caretakers to treat or manage this rare malignancy. In this report, we describe a clinical case of a 52-years-old male patient presenting with headache, vertigo, ear discharge with CSOM history who developed squamous cell carcinoma (SCC) of external auditory canal with temporal bone erosion and intracranial extension. This presented many challenges associated with the management of CSOM and treatment trends to make the strategy more beneficial for this particular neoplasm. The patient was managed by a combined oncological and otologic approach.

Key words: Chronic suppurative otitis media, temporal bone, squamous cell carcinoma, malignant tumors

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INTRODUCTION
Carcinoma arising from external auditory canal is a rare presentation in otological practice in which squamous cell carcinoma (SCC) is the most common type. Patients with pre-existing complications of CSOM, SCC usually present with poor prognosis but with good survival rate if diagnosed early as compared to the late stage. On the other hand, with the passage of time, hearing loss, depression and other disturbances may compromise the quality of life. The malignancy of the temporal bone is not frequently reported, especially in the context of otitis externa which makes its treatment guidelines unclear. According to an estimation, 0.1-0.6 out of 1million population in the United States of America encounter this tumour every year but in the case of CSOM history, its prevalence rate is much lesser. Therefore, at advance stage, the challenging invasion of the mass requires combinations of technique for treatment/management.

Several treatment protocols are reported but insufficient data and lack of randomized studies make the decision of the best modalities difficult. Usually, the most frequently employed method is surgical intervention for complications associated with CSOM after induction chemotherapy with or without radiotherapy. Other options such as intra-arterial chemotherapy can be taken under consideration. Delayed diagnosis, recurrent infections, and unclear signs and symptoms of CSOM may result in less follow up motivation which worsens the condition. The current study presented a rare case of squamous cell carcinoma with temporal bone erosion that was initially diagnosed with CSOM in a tertiary care hospital, to highlight the diagnostic procedure and adopted therapy plan.

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Case report:

A 52-years-old patient, resident of Karachi, belonging to a poor socio-economic background was admitted in ENT ward for chronic suppurative otitis media. He presented with complaints of severe headache, fever, vertigo and nausea with a history of CSOM for over 30 years. On examination of ear pus, Proteus Mirabilis was identified as disease-causing agent that was resistant to several antibiotics such as ampicillin, gentamycin, and ceftriaxone but sensitive to amoxicillin/ clavulan, amikacin, piperacillin, and ciprofloxacin. Pure tone audiometry reflected hearing loss in left ear up to 80 dB at the frequency of 4KHz. Weight loss reached up to 10 kilograms within two months. The blood glucose level was on borderline with 13.3 g/dl haemoglobin level. The CT scan of the temporal region showed that there was sclerosis with loss of normal air lucencies involving left mastoid air cells. There was opacification of external auditory canal and middle ear cavity on left side as shown in Figure 1. Auditory ossicles were not visualized on left side. There was erosion of mastoid temporal bone and epitympanum. Findings were most likely due to left-sided acute on CSOM and otitis externa with cholesteatoma formation.

Right mastoid air cells show no evidence of mass, erosion, or sclerosis. Mild polypoidal mucosal thickening was seen in both maxillary sinuses representing sinusitis. The opacification of left mastoid air cells measured 2.2x1.1 cm in mastoid temporal bone. After the confirmation of temporal bone erosion, the patient was subjected to biopsy.

When the brain MRI with the scanning protocol of multiplanar multisequential images using usual protocols with contrast was carried out, redemonstration of abnormal signal intensity mass lesion was seen involving left temporal bone involving its petrous and squamous parts extending into mastoid air cells and showing complete obliteration of external auditory canal. It was appearing isointense on both T1W and T2W images showing significant postcontrast enhancement. The mass measured 6.3x5.0x4.0 cm (AP xTS x CC) T 4 size. Medially, the mass was showing intracranial extension into the temporal lobe associated with perilesional edema. Posteromedially, the mass was seen infiltrating the temporal bone involving its petrous and squamous parts and it was extending into left cerebellopontine angle and abutting left cerebellar hemisphere. It was partially encasing petrous part of left internal carotid artery. Medially, it was partially infiltrating left pterygoid muscles and anteriorly it was reaching up to zygomatic arch.

The case was referred to oncological department with diagnosis of SCC (well to moderately differentiated histology) where it was discussed in multidisciplinary tumour board and planned for induction chemotherapy with three cycles of cisplatin 100 mg/m2 iv D1 and 5 fluorouracil 1000mg/m2 iv d1-d4, repeated every three weeks, followed by concurrent chemoradiotherapy to make the surgical intervention/ reconstruction easier if required, depending on patient’s response.

DISCUSSION

Although malignancy of external auditory canal is not common, but most of this neoplasm is squamous cell carcinoma which contributes 60–80% of the temporal bone cancer. The signs and symptoms usually associated
with it are not reported in detail but usually represent otologic bleeding, sudden hearing loss, facial palsy, and vertigo etc. The peak reported age of this neoplasm is between 5th to 6th decade of life as happened in the case under discussion. The most challenging aspect of the treatment is the complications of CSOM especially with cholesteatoma which delays early diagnosis; therefore, suspicious cases should be subjected to biopsy.

Many risk factors associated with co-existence of CSOM and SCC are reported in different literature such as chronic suppuration, radiation, chemical carcinogens, and infections but most strongly found is recurrent infections over decades that may favour the development of malignancy. Cholesteatoma may facilitate the carcinogenesis but lack of evidence does not promote this suggestion10.

Some studies also support the involvement of human papilloma virus in pathogenesis of tumour development in recurrent chronic inflammation11.

Patients with a history of CSOM over decades may have granulation with internal haemorrhage and should be immediately subjected to histopathological evaluation to avoid poor prognosis as happens in advanced stages.

Surgical reconstruction for CSOM following radiotherapy and chemotherapy are usually adopted to encounter the consequences and to improve quality of life10.

The case under discussion is reported due to its rare incidence to help the healthcare providers and policy makers to look at preventing the progression of the diseases and follow the combined therapy of possible surgical intervention with radiotherapy and chemotherapy.

Authors’ contributions: Professor S.M.Tariq Rafi worked on interpretation and reviewed the manuscript. Shafaque Mehboob collected data, worked on interpretation and wrote the manuscript. Dr Ammara Manzoor worked on oncological interpretation.

References