

CASE REPORT

Squamous Cell Carcinoma of External Auditory Canal Arising from CSOM: A Rare Presentation

Syed Mohammad Tariq Rafi¹, Shafaque Mehboob² and Ammara Manzoor³

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

How to cite this article: Rafi SM, Mehboob S, Manzoor A. Squamous cell carcinoma of external auditory canal Arising from CSOM: a rare presentation. Ann Jinnah Sindh Med Uni 2018; 4 (2): 86-88

درمیانی کان اور بیرونی سمعی نالی میں CSOM کے باعث رسولی کا تناسب بہت کم ہے اور ایک اندازہ کے مطابق چار ہزار میں سے ایک ہے۔ چونکہ CSOM میں مکمل طور پر مرض سے شفا یابی اور ہمیشہ کے لیے اس پر قابو پانا ناممکن ہوتا ہے اس لیے وقت پر کی گئی تشخیص معالج کے لیے CSOM کو ابتداء میں ہی قابو پانے میں مددگار ثابت ہو سکتی ہے۔ موجودہ مقالے میں ایک باون سالہ مریض کا ذکر کیا گیا ہے جسے CSOM کے ساتھ سر درد، vertigo اور کان سے ماڑے کے اخراج کی شکایت بھی تھی۔ مریض کو بیرونی سمعی نالی کا کینسر (SCC) کی تشخیص کی گئی جبکہ اسکی temporal bone بھی بری طرح متاثر تھی۔ اصل چیلنج یہ تھا کہ کیسے بیک وقت CSOM سے متاثرہ درمیانی کان کے علاج کے ساتھ ساتھ کینسر کو بھی قابو کیا جاسکتا ہے۔ اس مقصد کے لیے بیشتر کہ اور بہتر oncological اور otological حکمت عملی کی ضرورت درپیش تھی۔

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 life¹⁻³. 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 1 million 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/ management⁴⁻⁵.

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 condition⁶⁻⁸. 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.

1. Jinnah Sindh Medical University, Karachi, Pakistan

2. Institute of Pharmacy, Jinnah Sindh Medical University, Karachi, Pakistan

3. Jinnah Post Medical College, Karachi, Pakistan

Correspondence: Dr. Shafaque Mehboob, Institute of Pharmacy, Jinnah Sindh Medical University, Karachi, Pakistan

Email: shafaque.mehboob@hotmail.com

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 x TS x CC) T 4 size⁹. 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.



Fig. 1: Showing Sclerosis with Loss of Normal Air Lucencies Involving Left Mastoid Air Cells but Right Side Appears to be Normal



Fig. 2: Showing mass on left side

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

1. Yin M, Ishikawa K, Honda K, et al. Analysis of 95 cases of squamous cell carcinoma of the external and middle ear. *Auris Nasus Larynx*. 2006; 33 (3) : 251–257
2. Moody S. A., Hirsch B. E. and Myers E. N. Squamous cell carcinoma of the external auditory canal: an evaluation of a staging system. *Am j Otol*. 2000;21(4): 582–588
3. Nakagawa T., Kumamoto Y., Natori Y., et al. Squamous cell carcinoma of the external auditory canal and middle ear: an operation combined with preoperative chemoradiotherapy and a free surgical margin. *Otol Neurotol*. 2006; 27(2): 242–248
4. Lobo D, Llorente JL and Suarez C. Squamous cell carcinoma of the external auditory canal. Lobo D, Llorente JL and Suarez C. Squamous cell carcinoma of the external auditory canal. *Skull Base*. 2008;18(3):167–172
5. Kuhel WI, Hume CR and Selesnick SH. Cancer of the external auditory canal and temporal bone. *Otolaryngol Clin North Am*. 1996; 29(5):827–852
6. Gidley PW. Managing malignancies of the external auditory canal. *Expert Rev Anticancer Ther*2009; 9(9):1277–1282
7. Ueda Y, Kurita T, Matsuda Y, et al: Superselective, intra-arterial, rapid infusion chemotherapy for external auditory canal carcinoma. *J Laryngol Otol*.2009; 123(31): 75–80
8. Budrukkar A, Bahl G, Bhalavat R, et al. High-dose-rate brachytherapy boost for carcinoma of external auditory canal. *Brachytherapy*. 2009; 8(4):392–395
9. TNM classification AJCC 7th edition 2010. St-3.
10. Vikram BK, Saimanohar S, Narayanaswamy GN. Is Squamous Cell Carcinoma of Middle Ear a Complication of Chronic Suppurative Otitis Media? *Internet J Otolaryngol*. 2007; 6(1):10
11. Lasisi O, Ogunleye A, Akang E. Squamous cell carcinoma of mastoid- A report of two cases. *Ghana Med J*. 2005; 39(1):28-32