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A RARE CASE OF CERUMINOUS ADENOCARCINOMA OF THE EXTERNAL AUDITORY CANAL: CASE REPORT

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ABSTRACT **Background:** Ceruminous adenocarcinoma is an uncommon malignant neoplasm of the external auditory canal (EAC) that frequently presents with features resembling benign ear conditions, often resulting in delayed recognition.**Case presentation:** A 65-year-old male presented with left-sided facial nerve weakness, long-standing ear discharge, and a sensation of aural fullness. Radiological evaluation demonstrated an aggressive lesion involving the left EAC with extensive osseous destruction and regional lymph node enlargement. Histopathological examination, supported by immunohistochemistry, established the diagnosis of poorly differentiated ceruminous adenocarcinoma (not otherwise specified). The tumor was classified as T4N2aM0 (Stage IV), and the patient was planned for combined chemoradiotherapy.**Conclusion:** This case underscores the need for early clinical suspicion and the combined use of imaging and histopathological assessment in identifying rare malignancies of the EAC to facilitate timely management.

KEYWORDS : Ceruminous adenocarcinoma, external auditory canal, case report, temporal bone neoplasm, facial nerve palsy.

BACKGROUND

Ceruminous adenocarcinoma is a rare malignant tumor originating from the ceruminous (modified apocrine) glands of the external auditory canal. It represents a very small proportion of cutaneous malignancies in the head and neck region. These tumors are known for their aggressive biological behavior, including a tendency for local tissue invasion and distant spread.

The clinical presentation is often vague and overlaps with common benign otologic disorders. Symptoms such as persistent ear discharge, hearing loss, ear pain, and tinnitus are frequently encountered, which may lead to initial misdiagnosis. In more advanced cases, involvement of cranial nerves may be observed. The rarity of this entity combined with its non-specific presentation makes early diagnosis particularly challenging.

CASE PRESENTATION

A 65-year-old male presented with a 3-week history of left-sided facial nerve palsy. He also reported a sensation of fullness in the left ear for the preceding 3 months, along with a 10-year history of intermittent, foul-smelling, blood-stained ear discharge.

Otoscopic evaluation revealed an irregular, granulation-like lesion occupying the left external auditory canal.

High-resolution contrast-enhanced computed tomography (CT) of the temporal bone demonstrated an ill-defined soft tissue mass with heterogeneous enhancement within the left EAC. The lesion extended into the middle ear cavity, mastoid air cells, and adjacent parapharyngeal space. There was evidence of extensive bony destruction involving the walls of the EAC, facial nerve canal, carotid canal, sigmoid plate, and styloid process.

Further imaging with contrast-enhanced CT of the neck identified multiple enlarged necrotic lymph nodes in the left cervical region, specifically at levels II and III.

Histopathological analysis of the biopsy specimen revealed tumor cells arranged in nests with focal glandular differentiation. The cells exhibited marked pleomorphism, hyperchromatic to vesicular nuclei, eosinophilic cytoplasm, and increased mitotic activity. Areas of necrosis were also present.

Immunohistochemical staining showed tumor positivity for pancytokeratin and cytokeratin 7, while markers such as p63, S-100, and CD117 were negative. These findings supported the diagnosis of poorly differentiated ceruminous adenocarcinoma, not otherwise specified.

Based on the University of Pittsburgh staging system for EAC carcinoma, the tumor was staged as T4N2aM0 (Stage IV). Given the advanced stage and extent of disease, the patient was planned for combined chemoradiotherapy.

DISCUSSION

Ceruminous glands are specialized apocrine glands located in the external auditory canal and are responsible for cerumen production. Malignant transformation of these glands is rare, with recognized histological subtypes including adenocarcinoma (NOS), adenoid cystic carcinoma, and mucoepidermoid carcinoma.

Due to the similarity of presenting symptoms with benign inflammatory or infectious ear conditions, these tumors are often overlooked in the early stages. This contributes to delayed diagnosis and more advanced disease at presentation.

Radiological imaging plays a pivotal role in evaluating these tumors. CT scanning is particularly useful for identifying bony involvement and erosion, while magnetic resonance imaging (MRI) provides superior assessment of soft tissue extension and perineural spread.

Definitive diagnosis relies on histopathological examination, with immunohistochemistry aiding in distinguishing ceruminous adenocarcinoma from other neoplasms of the external auditory canal.

Treatment strategies are guided by tumor stage. Early-stage lesions may be effectively managed with complete surgical excision. In contrast, advanced tumors often require a multimodal approach, including radiotherapy and chemotherapy, and are associated with less favorable outcomes.

Several factors have been associated with poor prognosis, including advanced tumor stage, regional lymph node metastasis, perineural and vascular invasion, and incomplete surgical resection.

CONCLUSION

Ceruminous adenocarcinoma is an uncommon but highly aggressive malignancy that can closely resemble benign ear conditions in its early stages. Clinicians should maintain a high level of suspicion in cases of persistent or atypical otologic symptoms. Early diagnosis through appropriate imaging and histopathological evaluation is essential to optimize treatment outcomes.

Abbreviations

- **EAC:** External auditory canal
- **HRCT:** High-resolution computed tomography
- **NOS:** Not otherwise specified

DECLARATIONS

Ethics approval: Not applicable / obtained
Consent for publication: Written informed consent was obtained from the patient
Competing interests: None declared
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FIGURE LEGENDS

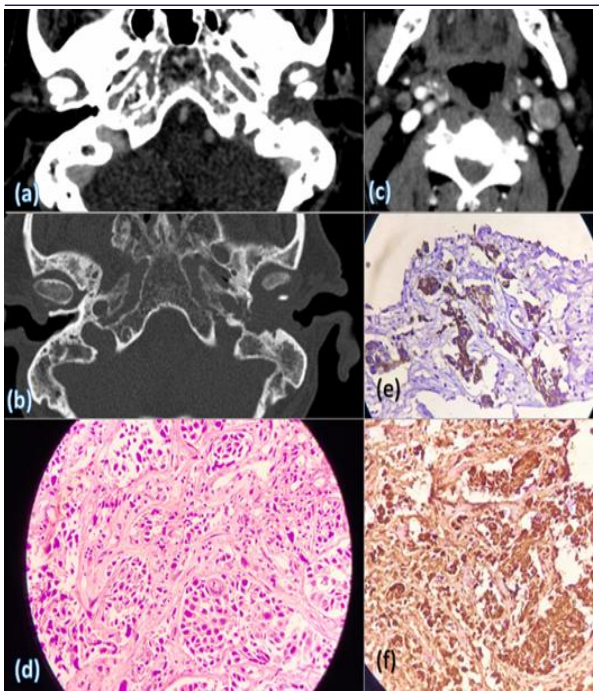

Figure 1:
(a) Axial contrast-enhanced CT image (soft tissue window) showing a heterogeneously enhancing lesion in the left external auditory canal extending into the middle ear cavity.

(b) Axial HRCT (bone window) demonstrating bony erosions of the anterior wall of the external auditory canal, carotid canal, and sigmoid plate.

(c) Contrast-enhanced CT neck showing an enlarged necrotic lymph node in the left level II region.

(d) Histopathological image showing pleomorphic tumor cells with hyperchromatic nuclei and eosinophilic cytoplasm (H&E stain).

(e–f) Immunohistochemistry showing positive staining for cytokeratin-7 and pancytokeratin.

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