

A Case Report - Basal Cell Carcinoma of the External Auditory Canal

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ABSTRACT

Basal cell carcinoma (BCC) of the external auditory canal (EAC) is extremely rare, accounting for less than 0.2% of all head and neck cancers. We report a case of a 63-year-old man who presented with a six-month history of right ear discomfort, pruritus, and bloody discharge. Computed tomography and magnetic resonance imaging demonstrated a localized lesion confined to the cartilaginous EAC without bone or soft tissue invasion. Histopathology confirmed BCC, and the lesion was successfully treated by wide local excision with tumor-free margins under local anesthesia. At the six-month follow-up, the patient remained disease-free with preserved hearing. Early diagnosis and complete excision ensure excellent oncologic and functional outcomes for EAC BCC.

Keywords: Basal cell carcinoma, external auditory canal, local excision, temporal bone, case report

INTRODUCTION

Neoplasms of the external auditory canal (EAC) are rare, accounting for less than 0.2% of all head and neck cancers [1]. Across the spectrum of EAC cancers, squamous cell carcinoma (SCC) occurs most frequently, whereas basal cell carcinoma (BCC) accounts for less than 15% [2]. BCCs of the EAC are typically less invasive than SCCs, but can still cause local destruction if not recognized early. They arise most often in elderly patients with a history of chronic sun exposure. Despite their rarity, awareness is crucial because delayed diagnosis can lead to advanced disease.

Malignant tumors of the EAC typically occur in adults aged 40 years or older. Men are affected more frequently than women. SCC is the most common type, while BCC accounts for fewer than 15% of cases. These tumors may extend from the canal into the middle ear, temporal bone, skull base, or intracranial space. Metastasis to the EAC from other primary cancers is rare. Five-year survival depends on disease stage and treatment, ranging from 10%-15% in advanced cases to 80%-85% in early cases. The epidemiologic and survival data presented here were obtained from the study by Correia-Rodrigues et al. [3].

This report highlights the clinical presentation, diagnostic evaluation, and successful surgical management of a rare case of BCC confined to the cartilaginous portion of the EAC. The authors present a case of BCC of the EAC.

The patient provided consent without coercion; he was fully informed about how his data would be protected, stored, and used.

CASE REPORT

A sixty-three -year-old male presented to the otolaryngology outpatient clinic with a 6-month history of right ear discomfort, progressive itching, and bloody discharge. He reported a mass in the right EAC and intermittent dull otalgia. The patient denied experiencing hearing loss, vertigo, or facial weakness.

The patient, a lifelong farmer, had chronic sun exposure but no prior otologic surgery, trauma, or history of radiation. The patient denied tobacco use and reported occasional alcohol consumption.

On otoscopic examination, a 2.1×1.3 cm irregular, non-ulcerated lesion was observed on the posteroinferior wall of the right EAC (Figure 1); the lesion had rolled, pearly borders,



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central crusting, and minimal bleeding on touch. The tympanic membrane was intact. No palpable cervical lymphadenopathy was detected.

Pure-tone audiometry demonstrated normal hearing thresholds bilaterally. Temporal bone computed tomography revealed a focal soft-tissue density lesion confined to the cartilaginous portion of the EAC, without bony erosion. Contrast-enhanced magnetic resonance imaging showed an enhancing mass confined to the EAC, with no extension into the middle ear or parotid gland and no disruption of surrounding tissue.

An incisional biopsy was performed. The lesion was classified as a nodular subtype of BCC. No other cutaneous or auricular lesions were identified on dermatologic screening. It confirmed BCC, characterized by nests of basaloid cells with peripheral palisading and retraction artifacts within a fibromyxoid stroma. Immunohistochemical analysis demonstrated positivity for Ber-EP4 epithelial antigen and cytokeratin 5/6, confirming the diagnosis.

According to the Pittsburgh staging system [4], the tumor remained restricted to the EAC without invasion of bone or soft tissue (T1), and there was no regional lymph node involvement (N0) or distant metastatic disease (M0).

The lesion was completely excised under local anesthesia, achieving histologically confirmed tumor-free 4-mm margins

(Figure 2). Intraoperative frozen-section analysis confirmed tumor-free margins. The post-excision defect was subsequently reconstructed (Figure 3), and no adjuvant radiotherapy was required.

Pathologic analysis confirmed BCC *in situ* without cartilage infiltration, and all surgical margins were free of malignancy.

At the 6-month follow-up, the patient remained disease-free, with no evidence of recurrence on otoscopic examination. The reconstructed EAC was patent and fully epithelialized,



Figure 1. Preoperative view showing a well-circumscribed, reddish mass in the cartilaginous portion of the external auditory canal. There is an irregular, non-ulcerated mass (2.1×1.3 cm) on the posterior-inferior wall of the right external auditory canal



Figure 2. Photograph of a surgical specimen after excision



Figure 3. Photograph of the surgical area following wide local excision and reconstruction

and hearing thresholds were preserved. The patient was advised on sun protection measures and scheduled for regular dermatologic and otologic surveillance.

DISCUSSION

Because carcinomas of the EAC are uncommon and can resemble more common ear disorders, they are often misdiagnosed. In a study by Zhang et al. [5], 44 cases of EAC carcinoma at the Eye and Ear, Nose and Throat Hospital were reviewed. Over 40 percent of these patients were initially given incorrect diagnoses. Specifically, six cases were misdiagnosed as otitis media, five as otitis externa, and two as EAC cholesteatomas. Additional misdiagnoses included EAC stenosis, ear neuralgia, furuncles of the EAC, benign EAC tumors, and preauricular fistulas [5]. The early symptoms, such as itching, mild pain, otorrhea, or minor bleeding, are non-specific and overlap with chronic inflammatory conditions. However, several clinical features should prompt suspicion of malignancy, such as persistent otorrhea or bloody discharge, visible mass or ulcer with rolled, pearly borders, pain disproportionate to clinical findings, facial nerve weakness, or new-onset hearing loss.

EAC has a complex etiopathogenesis. The main risk factors include long-term exposure to ultraviolet radiation, light skin, older age, and ongoing irritation or inflammation of the external ear [6-8]. The auricular and periauricular skin are thin, directly exposed to sunlight, and lack subcutaneous tissue, making them more susceptible to actinic damage and malignant transformation. Occupational exposure, such as in outdoor workers, are also at a higher risk [7].

One retrospective study of non-melanoma skin cancers in the EAC and auricular area showed that 60.5% of cases were SCC, 26.3% were BCC [9]. In a series from a tertiary center in Portugal, SCC accounted for 55.6% of EAC malignancies, followed by BCC at 40.7% [3].

Gidley [10] reviewed multiple studies addressing treatment strategies for carcinomas of the EAC, emphasizing that early-stage tumors are best treated with surgery alone, while radiotherapy should be reserved as a salvage option for recurrent or residual disease.

Nyrop and Grøntved [11] analyzed 20 consecutive patients who underwent surgical treatment for EAC cancer. They concluded that prognosis was closely associated with disease stage, indicating that the Pittsburgh staging system is also applicable to patients with non-SCC tumors.

Although surgical excision with clear margins remains the standard treatment for BCC of the EAC, a recent study by Xu et al. [12] suggests that photodynamic therapy with 5-aminolevulinic acid may be a promising non-invasive option for early-stage lesions. This could be especially helpful for patients who cannot, or who choose not to, undergo surgery.

In this case, factors such as advanced age, bloody discharge, and a visible mass indicated a risk of EAC carcinoma. Another important risk factor, chronic sun exposure, was found to be positively associated. An incisional biopsy confirmed BCC. Fortunately, the tumor was confined to the EAC, without bony erosion or soft-tissue extension (T1), with no regional lymph node involvement (N0), and no distant metastases (M0). In our case, the lesion was successfully treated with local excision, resulting in complete tumor removal and excellent functional and oncologic outcomes.

CONCLUSION

In conclusion, BCCs of the EAC are rare and often present with nonspecific symptoms that can delay diagnosis. This case emphasizes that even small, non-ulcerated EAC lesions may harbor malignancy. Prompt biopsy, precise imaging, and early surgical excision with negative margins are essential to achieving a cure while preserving auditory function. Long-term follow-up with periodic otologic and dermatologic evaluations is recommended to monitor for recurrence or secondary skin cancers.

Ethics

Informed Consent: A written informed consent has been granted from the patient.

Footnotes

Authorship Contributions

Surgical and Medical Practices: A.A., Concept: N.A., A.M., A.A., Desing: N.A., A.M., A.A., Data Collection or Processing: N.A., A.M., A.A., Analysis or Interpretation: N.A., A.M., A.A., Literature Search: N.A., A.M., A.A., Writing: N.A., A.M., A.A.

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