

## Ceruminous Adenoma

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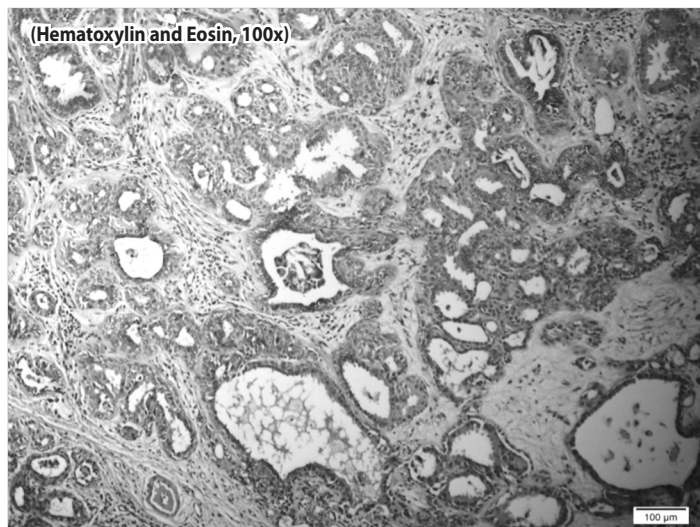
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**A 58-year-old Filipino man** with a two-year history of a left external auditory canal mass associated with ipsilateral hearing loss underwent polypectomy for a clinical impression of aural polyp.

We received several cream tan, irregular tissue fragments with an aggregate diameter of 1.4 cm. Histopathologic examination shows clusters of tumor cells forming variably sized ducts and glands some of which are cystically dilated; many of these structures have irregular lumina. (Figure 1) Higher magnification shows a dual cell population: an outer layer of round to ovoid cells with clear cytoplasm corresponding to basal myoepithelial cells; and an inner layer of cuboidal to columnar cells that have eosinophilic and granular cytoplasm with decapitating apical ends, corresponding to luminal epithelial cells with apocrine morphology. (Figure 2) Nuclear pleomorphism is mild to moderate, nucleoli are not prominent and mitoses, perineural invasion and necrosis are not seen. In some glands a yellow to golden brown, coarse pigment is seen at the cytoplasm of the luminal cells. (Figure 3) The tumor does not involve the epidermis and there is a variable amount of chronic inflammation. (Figure 4) Based on these features we diagnosed it as ceruminous adenoma.

Ceruminous neoplasms are uncommon tumors found in the external auditory canal. Benign ceruminous tumors include ceruminous adenoma, ceruminous pleomorphic adenoma and ceruminous syringocystadenoma papilliferum.<sup>1</sup> Most common among these is the ceruminous adenoma; making up 88% in one thirty-year review of benign ceruminous neoplasms.<sup>1</sup> These tumors occur in a wide age range, most commonly in the sixth decade, and have no sex

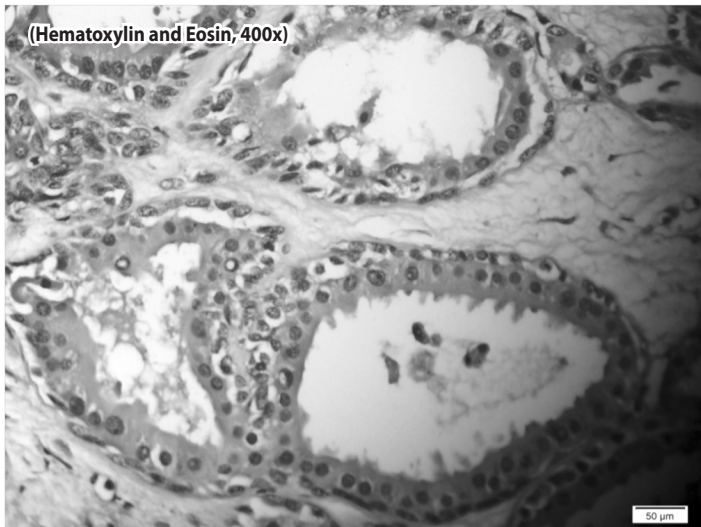


**Figure 1.** Hematoxylin and Eosin (100x) Neoplastic cells with a glandular and cystic architecture.

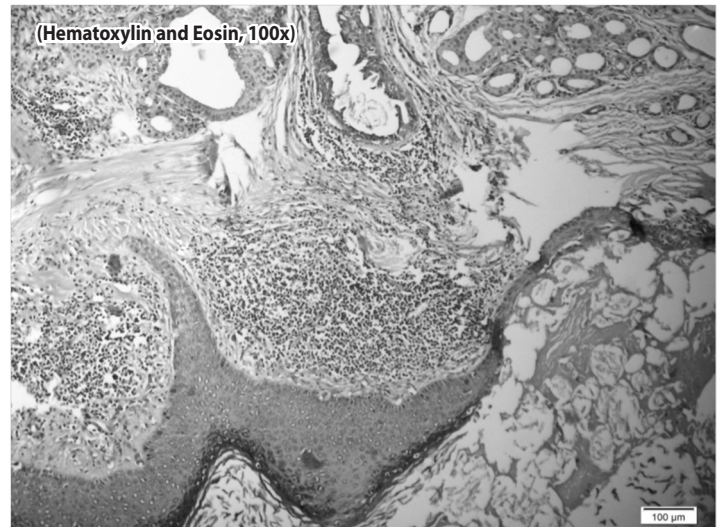
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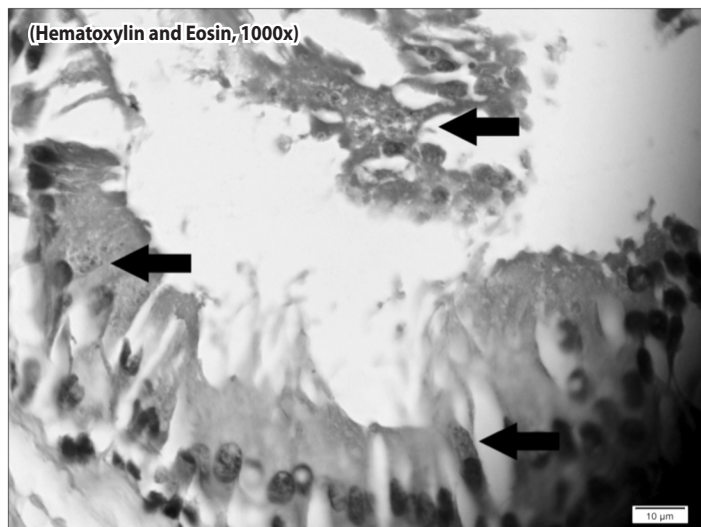
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**Figure 2.** Hematoxylin and Eosin (400x) Glands and ducts have a dual cell population of basal myoepithelial cells and luminal epithelial cells with apocrine features.



**Figure 4.** Hematoxylin and Eosin (100x) Chronic inflammation is variably present, sometimes peritumorally. The tumor does not involve the skin.



**Figure 3.** Hematoxylin and Eosin (1000x) Yellow to golden brown, granular "ceroid" material present in cytoplasm of the luminal epithelial cells (marked by black arrows).

predilection.<sup>2</sup> They present as masses in the outer half of the external auditory canal with hearing changes and pain.<sup>2</sup> They can be mistaken for aural polyps especially when there is associated chronic suppurative otitis media.<sup>3</sup>

Ceruminous adenomas arise from ceruminous glands<sup>4</sup> which are modified sweat glands of the outer one half of the external auditory canal.<sup>1</sup> These are well-circumscribed tumors with glandular architecture composed of two populations of cells with apocrine features as described above. Two microscopic features reinforce the ceruminous nature of the glands: the apocrine morphology and presence of "ceroid" material which are lipofuscin-like pigment granules seen in the cytoplasm of ceruminous gland luminal cells.<sup>1,2</sup> Both are evident

in our case. The main differential diagnosis of ceruminous adenoma is a ceruminous adenocarcinoma.<sup>1,2,5,6</sup> Marked pleomorphism, brisk mitoses, necrosis, invasion (e.g. perineural), and loss of the two-cell population favor a diagnosis of ceruminous adenocarcinoma but some well-differentiated cases can be confused with an adenoma. In these cases, sometimes the only clue of malignancy is invasion especially at the surgical margins.<sup>6</sup> Lassaletta *et al.*<sup>5</sup> stressed the importance of adequate tumor excision for a more accurate diagnosis. The presence of a dual cell population and the absence of malignant features led us to a diagnosis of ceruminous adenoma. Immunohistochemical staining for cytokeratin (specifically CK7) which highlight the luminal cells and for basal/myoepithelial cell markers like CK 5/6, S-100 and p63 may be done to further demonstrate the dual cell population.<sup>2</sup> Complete or adequate local excision is the treatment of choice; however, residual tumor often remains because of the difficulty of surgery at this location leading to recurrence. Subsequent repeat surgery to completely remove the tumor leads to cure.<sup>1,2,6</sup>

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