Cystic Low-Grade Sweat Gland Carcinoma with Apocrine Features: A Rare Eyelid Neoplasm

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Introduction

Apocrine sweat gland carcinomas of the eyelid are rare, often presenting diagnostic challenges due to their overlapping features with benign adnexal lesions and other malignancies. Accurate histopathological and immunohistochemical evaluation is essential for proper diagnosis and management. This case report describes the clinical, pathological, and immunohistochemical features of a cystic low-grade sweat gland carcinoma, emphasizing diagnostic challenges and the importance of complete excision.

Clinical History

A 53-year-old female with no significant history presented with a fluid-filled cystic lesion on the right upper eyelid. Clinical examination suggested a hydrocystoma. The lesion was excised under local anesthesia, and tissue samples were sent for histopathological analysis.

Results

Sections were stained with hematoxylin and eosin (H&E) and subjected to special stains (Alcian Blue PAS) and immunohistochemistry (IHC) to assess markers including CK7, ER, GCDFP-15, CK5, p63, synaptophysin, chromogranin, AR, and Ki-67. Histological examination revealed a mitotically active cystic neoplasm with mucinous content. Immunohistochemistry demonstrated apocrine differentiation with positivity for CK7, ER, GCDFP-15, and AR, while Ki-67 proliferation was estimated at 5%. The differential diagnoses included endocrine mucin producing sweat gland carcinoma, mucoepidermoid carcinoma, apocrine cystadenoma. An atypical squamous proliferation in the overlying epidermis was also reported.

Results (Continued)

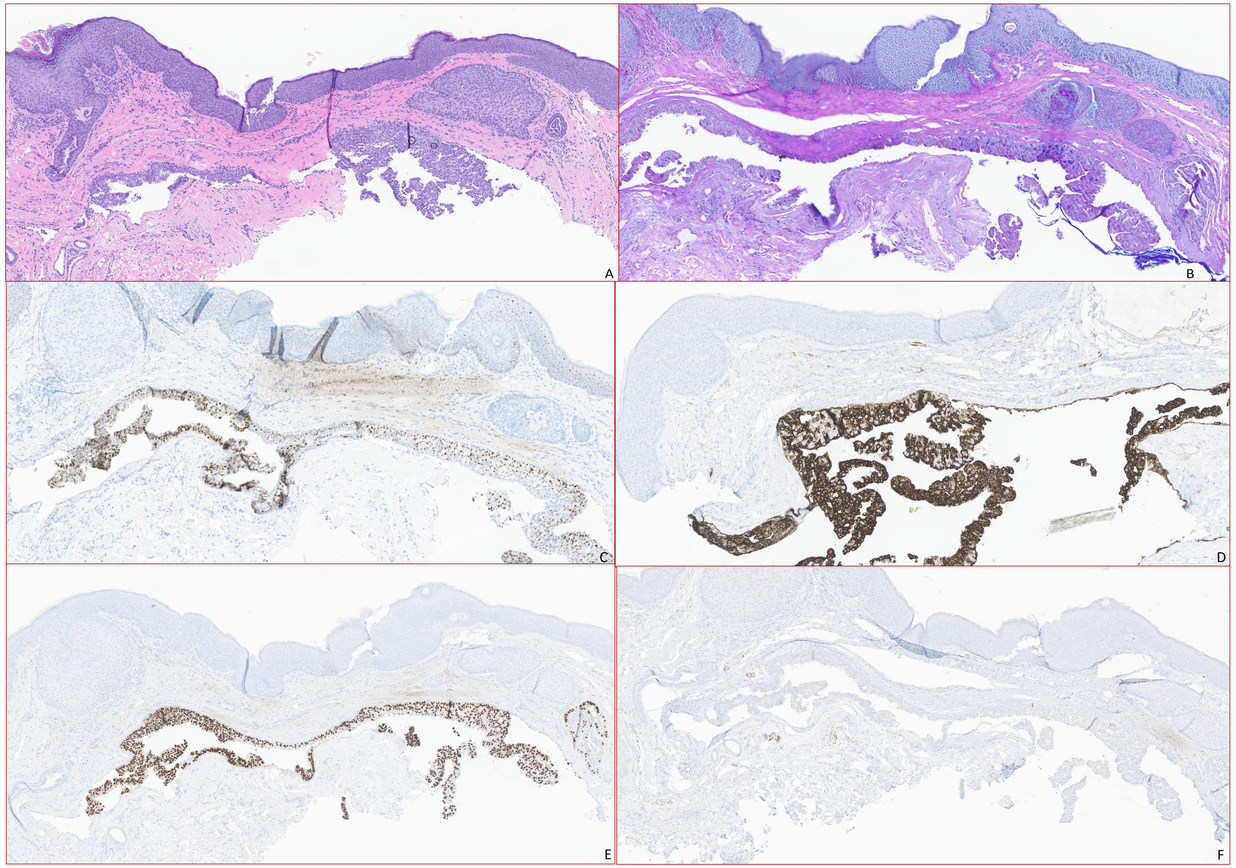

Figure: (A) H&E image showing a dermally based cystic epithelial neoplasm with mucinous features and few mitotic figures; (B) Alcian Blue stain highlighting intracytoplasmic mucin within neoplastic cells and extravasated mucin; (C) Androgen receptor (AR) is positive, consistent with apocrine features; (D) CK7 is positive, suggestive of primary cutaneous adnexal tumor; (E) Estrogen receptor (ER) is positive, suggesting apocrine origin; (F) Synaptophysin is negative, ruling out neuroendocrine differentiation.

Discussion

The rarity of cystic low-grade sweat gland carcinoma with apocrine features contributes to diagnostic complexity. Histological overlap with benign and malignant adnexal lesions necessitates comprehensive evaluation using immunohistochemical markers. Despite its low-grade nature, the potential for local recurrence or progression underscores the importance of achieving complete excision with clear margins. This case highlights the need for more awareness of rare adnexal neoplasms in clinical practice to ensure accurate diagnosis and management.

Conclusion

This case demonstrates the diagnostic and therapeutic challenges of cystic low-grade sweat gland carcinoma with apocrine features. Comprehensive histopathological and immunohistochemical analysis is essential for diagnosis, and complete excision remains critical for optimal patient outcomes.

References

Barker-Griffith AE, Streeten BW, Charles NC. Moll Gland Neoplasms of the Eyelid: A Clinical and Pathological Spectrum in 5 Cases. Arch Ophthalmol. 2006;124(11):1645–1649. doi:10.1001/archopht.124.11.1645