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Material distributed: 1 glass slide

Endocrine mucin-producing sweat gland carcinoma

Clinical History:A 73-year-old female presented to the Ophtalmology Clinic for a 7mm in diameter, smooth, erythematousnodulewith teleangectasiason the right upper eyelid of 4 years duration. Madarosis was also observed. Past clinical history included a previous diagnosis of breast cancer 10 months before for which the patient was submitted to neoadjuvant chemotherapy. After neoadjuvant therapy, the eyelid nodule had progressively reduced in size. The clinical diagnosis was basal cell carcinoma vs. cutaneous metastasis from breast cancer. The patient was submitted to surgical intervention (wedge resection).

Clinical Course: The clinical course was uneventful and there was no recurrence after 10 months of follow-up.

Pathology:

Macroscopic examination: The surgical specimentaken from a wedge resectionmeasured 0,9x 7 x 0,5 cm and included a nodular lesion 0,5 x 0,5 mm. The lateral, nasal and superior margins were separately analyzed.
Microscopic examination: Histopathological examination showed a well-demarcated expansile low-grade dermal tumor with cribriform architecture surrounded by fibrous stroma. At the periphery, there were artefactual clefts between tumor aggregates and adjacent stroma. Cytologically bland, uniformpolygonal, small to intermediate-sized ductal cells, with bluish cytoplasm and round to oval nuclei with finely stippled chromatin and inconspicuous nucleoli were demonstrated, suggestive of neuroendocrine differentiation. No significant cytological atypia was noted. Small amounts of extracellular mucin and rare melanophageswas demonstrated in the surrounding stroma. The tumor was completely excised.
Immunohistochemistry: Neoplastic cellsshowed positivity for synaptophysin, chromogranin, neuron-specific enolase (NSE), CD56, CK7, GCDFP-15, ER and PR. GATA-3 displayed diffuse and strong nuclear positivity. Ki-67 was positive in less than 5% of cells. HER-2 was negative.

The morphological findings were consistent with the diagnosis of *endocrine mucin-producing sweat gland carcinoma*.

Discussion:

Endocrine mucin-producing sweat gland carcinoma (EMPSGC) is a rare low-grade mucin-producing neuroendocrine neoplasm of sweat gland origin which frequently occurs in the eyelid and periorbital skin of elderly patients. Much of the interest and recent debate related to EMPSGC has been focused on its taxonomy, immunohistochemical profile and biological behavior. Due to morpho-phenotypic similarity, EMPSGC has been regarded as the cutaneous analogue of solid papillary carcinoma of the breast and now there is consensus in considering EMPSGC as a true precursor of primary adnexal mucinous carcinoma with neuroendocrine differentiation.

In the current case, the striking tumor size reduction following neoadjuvant therapy for previously diagnosed breast carcinoma prompted a clinical suspicion of cutaneous metastasis from breast carcinoma. Upon excision, accurate distinction was straightforward based on cyto-architectural and immunohistochemical features. However, the association of the two tumors in itself and the clinical observation is intriguing and reinforces the potential relationship of EMPSGC with other hormonally sensitive tumors, as previously suggested also based on EMPSGC multicentricity.

In EMPSGC, a careful search for foci of mucinous carcinoma is mandatory since the presence of extracellular pools of stromal mucin and/or infiltrating tumour glands and nests indicates progression to mucinous adenocarcinoma. Accordingly, it has been recommended to classify hybrid lesions as mucinous adnexal carcinoma.In our case, however, scant deposition of stromal extracellular mucin was observed in absence ofinfiltrating strands or nests of atypical tumor cells floating in lakes of extracellular mucin thus the final classification of this case may be open to discussion.

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