63rdAnnual European Ophthalmic Pathology Society (EOPS)Meeting

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Location:	Basel, Switzerland
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Case number:	E10123/24
Material Submitted:	Digital slide

Surprise in the orbit

Clinical history:

A 78-year-old patient was referred for evaluation of left eye exophthalmos with a 2-week history of vision loss. The patient denied pain. Upon presentation, there was no light perception in the affected eye. Clinical examination revealed a dilated pupil and severely impaired ocular motility. Slit lamp examination demonstrated chemosis and cataract formation. Ophthalmoscopy showed optic nerve head swelling. Exophthalmometry revealed 3 mm of proptosis compared to the contralateral eye. The patient's medical history was significant for cardiac disease and renal insufficiency. Magnetic resonance imaging identified a retroorbital mass. A diagnostic biopsy was subsequently performed.

Ocular pathology:

Macroscopic examination:

The specimen consisted of two gray tissue fragments, folded together, measuring up to 9 mm in greatest dimension.

Microscopic examination:

Histopathological analysis revealed infiltration of fat and connective tissue by atypical epithelial cell formations. The tumor cells displayed markedly irregular, enlarged, and pleomorphic nuclei arranged in an adenoid-solid growth pattern with numerous mitotic figures. A desmoplastic stromal reaction was present. The tumor demonstrated aggressive features including focal vascular invasion and perineural infiltration.

ImmunohistochemicalProfile:
Positive: MNF116, CK5/6, CK7, and focal TTF-1
Negative: p40, p63, Melan A, CK20, S100, NKX3, PAX8, CDX2, CD117, thyroglobulin, and Synaptophysin

Diagnosis:

Poorly differentiated carcinoma, most consistent with a metastasis potentially originating from a bronchial adenocarcinoma (first opinion) or a thyroid carcinoma (second opinion).

Discussion:

Orbital metastasis from lung carcinoma is uncommon, occurring in approximately 7-12% of lung cancer cases, with adenocarcinoma being the predominant histological subtype.[1] The clinical presentation typically includes proptosis, diplopia, pain, and decreased visual acuity, though our patient notably presented without pain.[2] While MRI or CT imaging is essential for initial detection and characterization of orbital masses, definitive diagnosis requires histopathological examination with immunohistochemical studies.

In this case, the immunohistochemical profile, including TTF-1 positivity combined with CK7 expression raised suspicion of a pulmonary origin. However, also a primary tumor of the thyroid, i.e. anaplastic thyroid carcinomais possible, even if the tumor cells were negative for thyroglobulin.Subsequent systemic evaluation revealed multiple enlarged lymph nodes and subcutaneous masses in the shoulder region and occipital scalp, confirming widespread metastatic disease.

Management options for orbital metastases include local radiotherapy, systemic chemotherapy, and targeted hormone or immunotherapy in appropriate cases.[3] Given the advanced stage of disease in this patient, a palliative care approach was initiated, focusing on symptom management and quality of life.

This case highlights the importance of considering metastatic disease in the differential diagnosis of orbital masses, particularly in elderly patients, even with limited systemic symptoms. It also emphasizes the value of prompt histopathological diagnosis to guide appropriate management decisions.

References:

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