Hürthle cell carcinoma

- Surgical management of metastatic Hurthle cell carcinoma to the skull base, cortex, and spine: illustrative case
- Thyroglobulin as a Rapid and Cost-Effective Biomarker for Diagnosis of Thyroid Carcinoma Brain Metastasis: A Case Report of a Patient with Metastatic Hurthle Cell Thyroid Carcinoma
- The differences in distant metastatic patterns and their corresponding survival between thyroid cancer subtypes
- Hurthle cell carcinoma presenting as a single choroid plexus metastasis
- Solitary spinal metastasis of Hurthle cell thyroid carcinoma
- Radio-guided surgery for non-131I-avid thyroid cancer
- Management of brain metastases from thyroid carcinoma: a study of 16 pathologically confirmed cases over 25 years

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Hürthle cell carcinoma (HCC) is an unusual and aggressive variant of the follicular type of differentiated thyroid cancer (DTC), accounting for less than 3% of DTCs but posing the highest risk of metastasis. Brain metastases are uncommonly reported in the literature but pose a poor prognosis. The low rate of brain metastases from HCC coupled with ambiguous treatment protocols for extracranial disease complicate successful disease management and definitive treatment strategy.

Case reports

Hameed et al. from the Departments of Neurosurgery and Hillman Cancer Center, University of Pittsburgh Pennsylvania. present the case of a patient with HCC metastasis to the skull base, cortex, and spine with recent tibial metastasis.

Despite the presence of metastasis to the cortex, skull base, and spine, the patient responded very well to radiation therapy, sellar mass resection, and cervical spine decompression and fixation and has made a remarkable recovery.

The authors' multidisciplinary approach to the patient's care, including a diverse team of specialists from oncology, neurosurgery, orthopedic surgery, radiology, endocrinology, and collaboration with clinical trial researchers, was fundamental to her successful outcome, demonstrating the utility of intersecting specialties in successful outcomes in neuro-oncological patient care [1)]

An 81-year-old man who had undergone total thyroidectomy for goiter in the past and presented with metastatic papillary thyroid carcinoma (PTC) to the neck after a gap of 16 years. After two years, the patient developed a solitary cystic brain PTC metastasis associated with raised thyroglobulin (Tg) inside the cystic lesion aspirated during brain surgery. He was admitted for a space-occupying brain lesion in the right frontal lobe. The patient's history included metastatic disease of PTC to the neck with cervical lymph node metastasis and local recurrence after surgery and radioactive iodine-131 treatment. The patient underwent craniotomy and removal of the lesion. The aspirated fluid was sent for cytological examination and measurement of Tg levels, which were interestingly high. Pathology of

the brain lesion revealed infiltration of brain parenchyma from a metastatic lesion characterized by eosinophilic cells with irregular contours forming grooves, resulting in cytoplasmic pseudo-inclusions, an oncotic variant of PTC. This report has shown that residual tissue may be present following total thyroidectomy and may be the origin of PTC with metastasis to the brain. The patient in this study suffered from a brain lesion that could be excised. However, aspiration of cystic compartments could provide a rapid diagnosis in patients with non-removable brain lesions [2].

The first reported patient with an isolated Hurthle cell papillary thyroid carcinoma metastasis to the choroid plexus of the lateral ventricle. Unresponsive to iodine ablation and refusing surgery, the patient underwent Gamma Knife radiosurgery (Elekta AB, Stockholm, Sweden), receiving 15Gy to the 50% isodose line. The lesion regressed until 5 years later at which time it was unresponsive to 18Gy and required surgical resection. Although extraneural metastatic cancers are recognized as potential sources for the single choroid plexus mass, we must consider even the unusual culprit in patients with a history of cancer [3].

McWilliams RR, Giannini C, Hay ID, Atkinson JL, Stafford SL, Buckner JC. Management of brain metastases from thyroid carcinoma: a study of 16 pathologically confirmed cases over 25 years. Cancer. 2003 Jul 15;98(2):356-62. doi: 10.1002/cncr.11488. PMID: 12872357.

1)

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2)

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3)

Healy AT, Otvos B, Schroeder J, Hamrahian AH, Angelov L, Kamian K. Hurthle cell carcinoma presenting as a single choroid plexus metastasis. J Clin Neurosci. 2014 Aug;21(8):1448-50. doi: 10.1016/j.jocn.2013.12.012. Epub 2014 Jan 24. PMID: 24656751.