

# Tumor-to-meningioma metastases

Tumor-to-meningioma metastases (TTMM) is an uncommon phenomenon, however repeatedly found in the literature. Meningiomas occur to be the most frequent target of metastatic expansion of systemic cancers. Meningiomas often vary in symptoms and treatment, and this largely depends on the tumour location. Due to their variable locations, they can be classified as convexity meningiomas, which includes falcine and parasagittal tumours, and cranial base, which includes tumours located in the olfactory groove, sphenoid wing, petrous bone and other cranial base locations. The aim of this study was to analyse all data regarding metastases to cranial base meningiomas. We performed a literature search to locate all cases of metastases to cranial base meningiomas in PubMed and Medline databases using the following key words: metastasis to meningioma, meningioma metastasis, and cranial base meningioma. We collected patient and cancer parameters, exact meningioma location and clinical presentations including characteristics which may suggest TTMM. We found 100 articles describing 111 patients of metastasis to cranial base meningioma. Among these articles, 55 cases (49.55%) included metastases to non-skull base meningiomas. In 24 cases (21.62%), the location of meningioma was not precisely described or other data were unavailable, in particular histopathological examination. The most common location of TTMM was sphenoid wing, which was found in 9 patients. The other locations included cerebellopontine angle in 5 patients, and tuberculum sellae in 3 cases. 81.25% cases of TTMM were reported in women, and the most common cancer origins were the breast (28.3%), lung (18.7%), kidney (9.38%) and prostate (9.38%). In two cases the metastatic origin was unclear, and in 15.6% of cases the patients were in remission for more than 1 year. In 78.1% of cases patients presented focal deficits, followed by increased intracranial pressure, and seizures. In almost one-third of cases, TTMM first appeared from a previously unknown cancer. Rapid clinical presentation of cranial nerve palsies may suggest the dual nature of intracranial pathology. The metastasis to cranial base meningioma should be suspected in patients with oncological background, regardless of meningioma parameters or cancer status <sup>1)</sup>.

A 73-year-old female patient diagnosed with breast cancer was found to have [convexity meningioma](#). Since the size of tumor and peritumoral brain edema increased during follow-up period, the meningioma was treated with surgical resection. Postoperatively, histopathologic examination confirmed metastasis of invasive ductal carcinoma within a secretory meningioma. The final diagnosis was TTM of breast cancer in meningioma. A rare case of intra-meningioma metastasis and a review of literature to provide a better understanding of this rare phenomenon <sup>2)</sup>

<sup>1)</sup>

Rzehak A, Sobstyl M, Bojarski P. Metastases to cranial base meningiomas. Clinical presentations and surgical outcomes. Literature overview. *Folia Neuropathol.* 2022;60(4):375-383. doi: 10.5114/fn.2022.123500. PMID: 36734379.

<sup>2)</sup>

Joe WH, Lee CY, Kim CH, Ko YS, Kim SP, Kwon SM. Breast Cancer to Meningioma: A Rare Case of Tumor-to-Tumor Metastasis. *Brain Tumor Res Treat.* 2023 Jan;11(1):73-78. doi: 10.14791/btrt.2022.0042. PMID: 36762811; PMCID: PMC9911711.

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