

ABSTRACT

J Clin Neurosci. 2021 Nov;93:168-173. doi: 10.1016/j.jocn.2021.08.028. Epub 2021 Sep 21.

Intracranial meningioma metastasis: A case-based literature review.

Papadakis BK(1), Vorrias E(2), Bräutigam K(3), Chochlidakis N(4), Koutsopoulos A(5), Mavroudis D(6), Vakis A(7), Tsitsipanis C(4).

Author information:

(1)School of Medicine, University of Crete, Panepistimiou 71500, Heraklion, Greece.

(2)Department of Medical Oncology, General University Hospital of Heraklion, 71500 Voutes Heraklion, Greece.

(3)Institute of Pathology, University of Bern, Murtenstrasse 31, 3008 Bern, Switzerland.

(4)Department of Neurosurgery, General University Hospital of Heraklion, 71500 Voutes Heraklion, Greece.

(5)School of Medicine, University of Crete, Panepistimiou 71500, Heraklion, Greece; Department of Pathology, General University Hospital of Heraklion, 71500 Voutes Heraklion, Greece.

(6)School of Medicine, University of Crete, Panepistimiou 71500, Heraklion, Greece; Department of Medical Oncology, General University Hospital of Heraklion, 71500 Voutes Heraklion, Greece.

(7)School of Medicine, University of Crete, Panepistimiou 71500, Heraklion, Greece; Department of Neurosurgery, General University Hospital of Heraklion, 71500 Voutes Heraklion, Greece.

A tumor-to-tumor metastasis inside a meningioma is a rare phenomenon. Malignant neoplasms of the breast and lung are the most common primary tumors. Other sites of origin include prostate, renal and gastric neoplasms. The included case files were retrieved from the medical records of the University Hospital of Crete, Greece. A review of the literature was conducted in March 2020 via PubMed. Relevant search results were few. We report a case of a 66-year-old female, with known Small Cell Lung Cancer, who presented with left-sided hemiparesis. The Magnetic Resonance Imaging scan revealed a right frontal extra-axial mass. The patient underwent a craniotomy and a gross total removal of the tumor. Histological examination of the excised mass revealed metastatic adenocarcinoma deposits inside a meningioma: tumor-to-tumor metastasis. Reviewing the available literature, it has been hypothesized that the following factors play a role in the pathophysiology of this phenomenon: progesterone and estrogen receptors, cell-to-cell adhesion molecules, rich vascularization, favorable metabolic, micro-and immunological environment. Meningiomas seem to be the most common type of intracranial neoplasm to host a metastasis. There is a difference between tumor-to-tumor metastasis and collision tumors. The former implies a recipient role of the host tumor, and the latter refers to a co-localization of two different tumors that grow into one another, both being in the same organ. Tumor-to-tumor brain metastasis is a well-described phenomenon but with unclear pathophysiology. Deeper knowledge could be beneficial for its management.

Copyright © 2021 Elsevier Ltd. All rights reserved.

DOI: 10.1016/j.jocn.2021.08.028

PMID: 34656242

Conflict of interest statement: Declaration of Competing Interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.