



World Neurosurgery

Volume 122, February 2019, Pages e1536-e1541

Original Article

Multiple Intracranial Meningiomas: A Case Series and Review of the Literature

Benedito Jamilson Araújo Pereira¹  , Antônio Nogueira de Almeida^{1,2}, Paulo Henrique Pires de Aguiar¹, Wellingson Silva Paiva¹, Manoel Jacobsen Teixeira¹, Suely Kazue Nagahashi Marie¹

[Show more](#)<https://doi.org/10.1016/j.wneu.2018.11.097>[Get rights and content](#)

Objective

To review the published data to create a more comprehensive natural history of **multiple meningiomas** (MM).

Methods

A review of MM published until now was carried out through a Medline search up to August 2018. The use of the “multiple meningiomas” keyword returned 278 articles, and the characteristics analyzed in our present cohort were searched on those publications. Articles without detailed description of clinical findings, **neuroimaging** confirmation of tumor multiplicity, follow-up at least of 5 years, and clear description of clinical findings were excluded. We added series to this review.

Results

293 patients with MM were analyzed: 220 women and 73 men, with a total of 932 tumors (3.1 tumors per patient). The majority of tumors were located in the convexity (65.3% to 74.5%). The total number of tumors treated was 429 (43.9%): 338 (78.8%) by surgical resection and 91 (21.2%) by **radiotherapy**. Histopathologic description was available in 303 of 429 cases, being grade I in 272 (90.3%) cases, with a predominance of the meningotheial subtype (30.7%). **Tumor recurrence** was described in 32 (8.07%) among 397 and only 10 deaths (3.4%) of 281 reported cases, where this characteristic was evaluated.

Conclusions

World Health Organization grade I predominance was observed among multiple meningiomas in similarity to single meningiomas. Only a fraction of MM patients (43.89%) needed treatment. A **benign tumor** behavior was corroborated by the observed low frequency of **recurrence** and mortality.

[Previous](#)[Next](#)

Key words

Multiple meningioma; Recurrence; Surgery

Abbreviations and Acronyms

CS, Cowden syndrome; MM, Multiple meningioma; NF2, Neurofibromatosis type 2; WHO, World Health Organization

[Recommended articles](#)

[Citing articles \(0\)](#)

Conflict of interest statement: The authors declare that the article content was composed in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

© 2018 Elsevier Inc. All rights reserved.

ELSEVIER

[About ScienceDirect](#) [Remote access](#) [Shopping cart](#) [Advertise](#) [Contact and support](#) [Terms and conditions](#)
[Privacy policy](#)

We use cookies to help provide and enhance our service and tailor content and ads. By continuing you agree to the [use of cookies](#).

Copyright © 2019 Elsevier B.V. or its licensors or contributors. ScienceDirect® is a registered trademark of Elsevier B.V.

 RELX Group™