

ABSTRACT

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Bone metastasis from glioblastoma: a systematic review.

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INTRODUCTION: Glioblastoma (GBM) is a devastating disease with poor overall survival. Despite the common occurrence of GBM among primary brain tumors, metastatic disease is rare. Our goal was to perform a systematic literature review on GBM with osseous metastases and understand the rate of metastasis to the vertebral column as compared to the remainder of the skeleton, and how this histology would fit into our current paradigm of treatment for bone metastases.

METHODS: A Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)-compliant literature search was performed using the PubMed database from 1952 to 2021. Search terms included "GBM", "glioblastoma", "high-grade glioma", "bone metastasis", and "bone metastases".

RESULTS: Of 659 studies initially identified, 67 articles were included in the current review. From these 67 articles, a total of 92 distinct patient case presentations of metastatic glioblastoma to bone were identified. Of these cases, 58 (63%) involved the vertebral column while the remainder involved lesions within the skull, sternum, rib cage, and appendicular skeleton.

CONCLUSION: Metastatic dissemination of GBM to bone occurs. While the true incidence is unknown, workup for metastatic disease, especially involving the spinal column, is warranted in symptomatic patients. Lastly, management of patients with GBM vertebral column metastases can follow the International Spine Oncology Consortium two-step multidisciplinary algorithm for the management of spinal metastases.

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