

## Dural Metastasis of Glioblastoma: Case Report

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### ABSTRACT

Metastases extra neural stemming from are a rare progression of glioblastoma, with an incidence of 0.4-0.5% of all glioblastoma cases. The locations can be extra neural, such as leptomeninges and dural venous sinuses, extra neural and extracranial, such as solid organs and lymph nodes, yet in this study, we report the case of a patient previously diagnosed with glioblastoma presenting extramedullary dural metastases. The lesson learned from this case is to look for early craniospinal metastasis in GBM patient.

**Keywords:** Glioblastoma, Dural, Metastasis, Extra neural

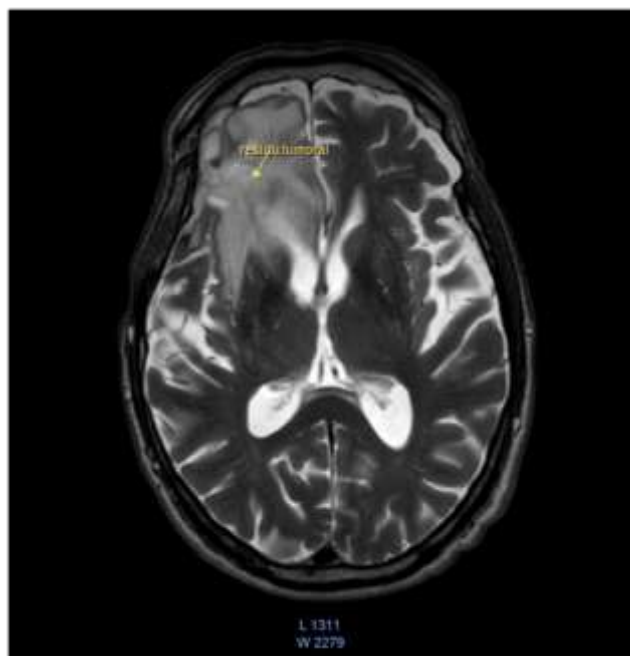
**Abbreviations:** MRI: Magnetic Resonance Imaging; SNC: Society of Nutrition Counselors

### INTRODUCTION

Glioblastoma The occurrence of dural metastasis from glioblastoma is relatively rare. It's estimated that dural metastases occur in less than 5% of cases involving secondary intraspinal locations, and among these, only about 3.5% are strictly intramedullary. Glioblastomas typically tend to metastasize within the central nervous system rather than outside the brain or spinal cord [1]. And when they do spread, dural involvement is a less common manifestation compared to other sites within the CNS [2]. However, cases of spinal locations have been reported, typically situated outside the spinal cord, as seen in our case study.

### CASE STUDY

A 73-year-old patient previously diagnosed with right glioblastoma reported intensified back pains, particularly in the lumbar region. A spinal MRI was conducted to identify imaging anomalies that could explain these symptoms. The MRI revealed secondary metastases, both bone-related and extramedullary intradural, localized at the level of the spinal cord (L1-L2) and dorsal vertebrae (D9 and D11). These areas exhibited unusual signals on MRI images following gadolinium injection (Figures 1-5).

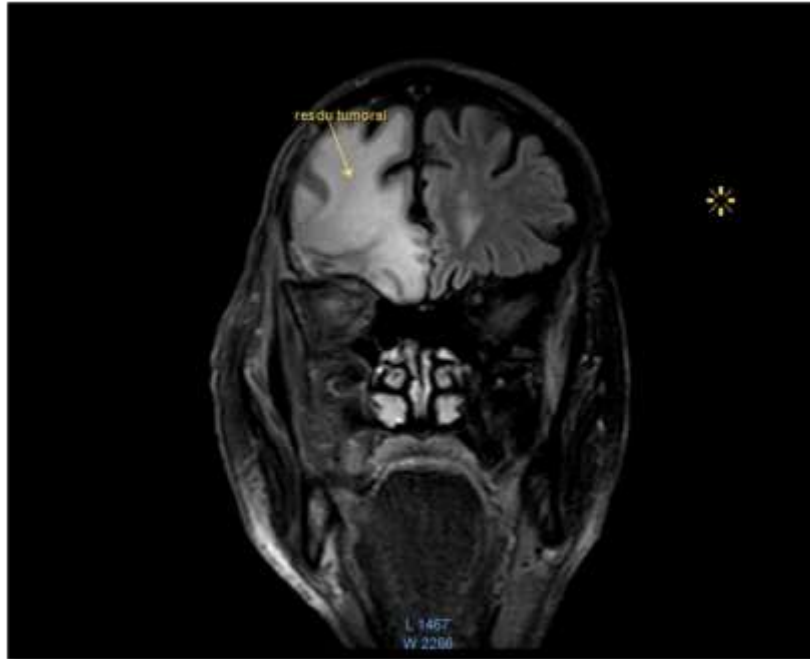


**Figure 1.** Axial T2 image: showing edema and residue of the right frontal glioblastoma in T2 hypersignal.

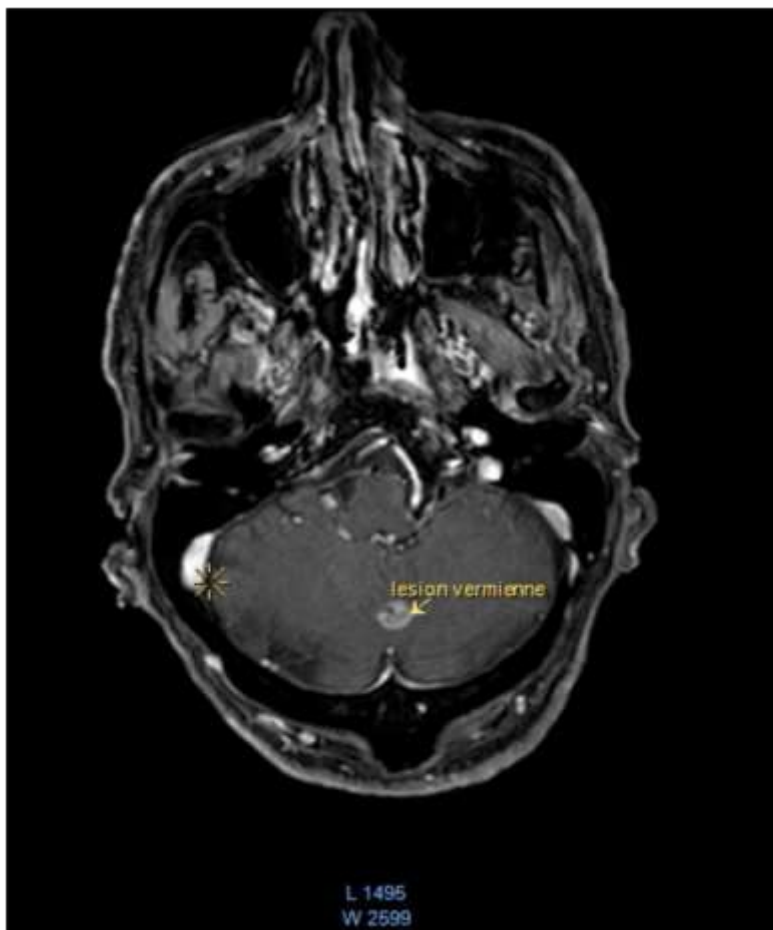
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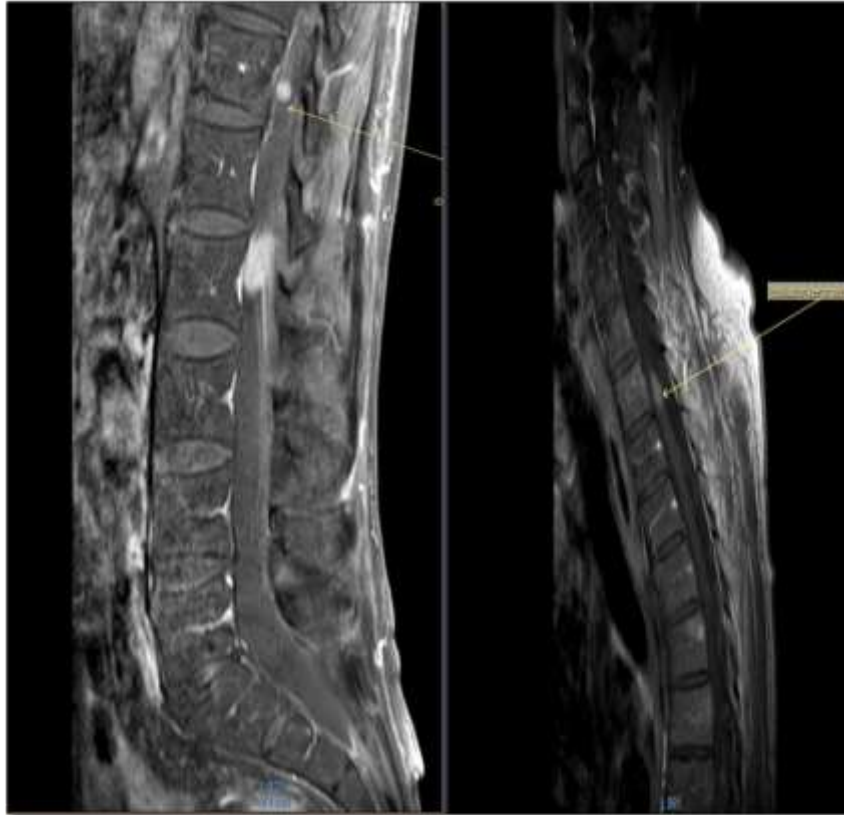
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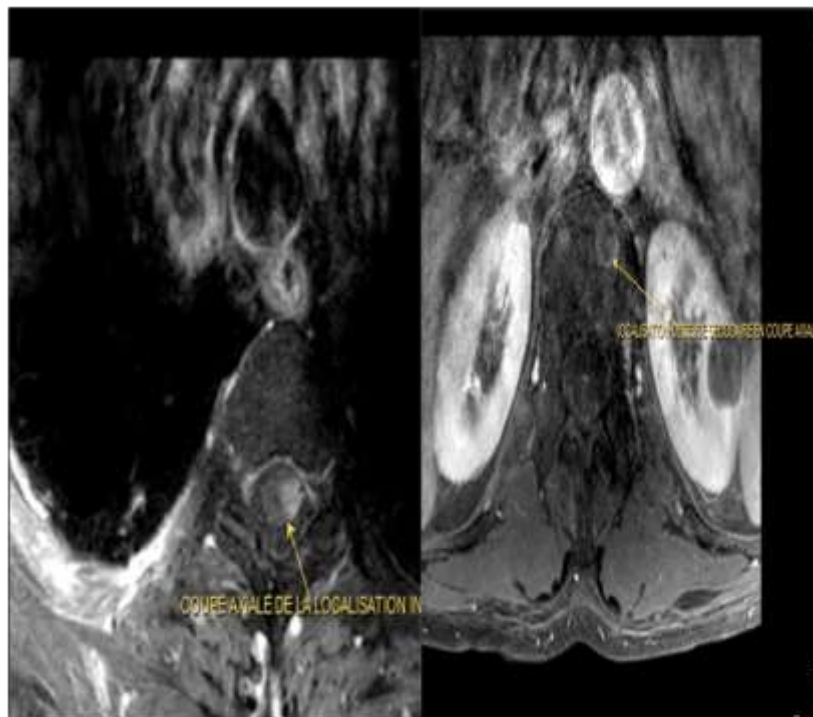
**Figure 2.** Coronal T2 image: showing edema and residue of the right frontal glioblastoma in T2 hypersignal.



**Figure 3.** Axial Post-Contrast: Shows Left Cerebellar Metastasis of Right Glioblastoma.



**Figure 4.** Sagittal Post Contrast Showing Two Lumbar Extramedullary and One Cervical Extramedullary and Dural Enhancements as Dural Metastasis of the Glioblastoma.



**Figure 5.** Axial Post-Contrast: Showing Dural Metastasis Compressing the Spinal Cord. Due to Glioblastoma and So Metastasis in Vertebral Body.

## DISCUSSION

Intradural metastases constitute only a small fraction of secondary spinal localizations, typically situated outside the spinal cord. Only 3.5% are strictly intramedullary, attributed to the aggressiveness of glioblastoma within the subarachnoid spaces [3]. In contrast, intradural metastases seem to follow a different path of spread through cerebrospinal fluid (CSF). These cases remain rare, primarily due to the short lifespan associated with this type of intradural metastasis stemming from glioblastoma. Surgical removal of these spinal metastases is often decided based on patient symptoms and the lesion's location [4-5]. Unfortunately, patient survival is reduced, ranging from a few months to two years, with a discouraging prognosis.

## CONCLUSION

Extracranial metastases of glioblastoma multiforme (GBM) are rare due to the short survival experienced by the patients [6]. Spinal MRI remains pivotal for diagnosis, and the recommended treatment involves surgical resection and postoperative radiotherapy, accompanied by concurrent and adjuvant temozolomide chemotherapy, remain the standard of care [5].

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