

Contents lists available at [ScienceDirect](#)

Asian Journal of Surgery

journal homepage: www.e-asianjournalsurgery.com

Letter to Editor

A case report with discussion on the treatment of giant cell glioblastoma

To the Editor,

Giant cell glioblastoma (GCG) is a rare and aggressive subtype of glioblastoma multiforme (GBM), accounting for approximately 1–2% of GBM, with histological feature that presence of multinucleated giant cells within a background of glioblastoma cells.¹ Here, we are going to report a case of GCG, discussion on the treatment and the new findings (see Fig. 1).

A 53-year-old man complained of headaches, blurred vision, and slurred speech for one month. MRI revealed a left frontal lobe lesion consistent with glioma features, measuring with 55*55*40 mm. The patient underwent surgical resection of the tumor under general anesthesia, followed by comprehensive postoperative management. The patient was admitted to hospital and underwent surgical resection of the tumor under general anesthesia, followed by comprehensive postoperative management-. The patient recovered well with significant improvement in symptoms. Histopathological examination led to the diagnosis of left temporal lobe GCG (WHO grade IV). The patient received adjuvant radiotherapy concurrent with temozolomide, followed by temozolomide as maintenance therapy and regular follow-up. Three years after surgery, local recurrence was detected via MRI. The patient was then treated with bevacizumab, resulting in the remission of tumor.

The onset age of GCG have been reported across a wide range,

with a median age of approximately 50 years old.¹ The symptoms of GCG patients usually related to increased intracranial pressure and the tumor location, therefore the key of treatment is to remove the tumor, relieve compression, and reduce recurrence.^{2,3} Typical treatment of GCG involves maximal safe resection followed by adjuvant therapies such as radiation therapy and chemotherapy. However, due to the aggressive nature of the tumor and its high propensity for recurrence, the prognosis for patients with GCG remains poor, with a median survival ranging from several months to a few years. Research has found that a low mutation rate can lead to a better prognosis for GCG patients. Furthermore, by identifying the distinct gene expression profiles of GCG, we can explore better opportunities for targeted therapy against this rare tumor.⁴ In this case, the VEGF-targeted drug Bevacizumab for recurrent treatment, has shown promising therapeutic effects for recurrent GCG. We look forward to more prospective clinical trials in the future to improve patient prognosis.

Our case emphasized the importance of surgical treatment and postoperative care in improving patient survival and quality of life. The characteristic of a low mutation rate in GCG also poses more challenges for exploring more effective targeted treatment strategies. Further research into the molecular underpinnings of GCG and the development of novel therapeutic approaches are crucial to improving outcomes for patients.

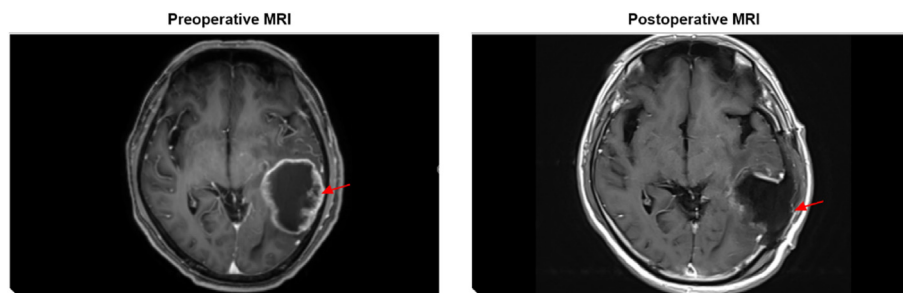


Fig. 1. Comparison of brain MRI before and after operation. The red arrows indicate the tumor site.

<https://doi.org/10.1016/j.asjsur.2024.05.129>

1015-9584/© 2024 Asian Surgical Association and Taiwan Society of Coloproctology. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Please cite this article as: L. Cai, Y. Liu and T. Sun, A case report with discussion on the treatment of giant cell glioblastoma, Asian Journal of Surgery, <https://doi.org/10.1016/j.asjsur.2024.05.129>

Declaration of competing interest

All authors declared no conflicts of interest

References

1. Kozak KR, Moody JS. Giant cell glioblastoma: a glioblastoma subtype with distinct epidemiology and superior prognosis. *Neuro Oncol.* 2009;11:833–841.
2. Bin Abdulrahman AK, Bin Abdulrahman KA, Bukhari YR, Faqih AM, Ruiz JG. Association between giant cell glioblastoma and glioblastoma multiforme in the United States: a retrospective cohort study. *Brain Behav.* 2019;9:e01402.
3. Oh T, Rutkowski MJ, Safae M, et al. Survival outcomes of giant cell glioblastoma: institutional experience in the management of 20 patients. *J Clin Neurosci.* 2014;21:2129–2134.

4. Shi Z-F, Li KK-W, Kwan JSH, et al. Whole-exome sequencing revealed mutational profiles of giant cell glioblastomas. *Brain Pathol.* 2019;29:782–792.

Lize Cai, Yongsheng Liu, Ting Sun*
Neurosurgery and Brain and Nerve Research Laboratory, First
Affiliated Hospital of Soochow University, Suzhou, Jiangsu, China

* Corresponding author. 296 Shizi St, Cang Lang Qu, Suzhou,
Jiangsu, China.
E-mail address: suntingst1979@126.com (T. Sun).

5 April 2024