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Video Abstract

Microsurgery for a medial left giant lesser sphenoid wing meningioma complicated by postoperative vasospasm of the ipsilateral supraclinoid carotid artery

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ABSTRACT

Background: Sphenoid wing meningiomas present close contact with intracranial arteries and have great potential for vascular complications. Here, we describe the case of a patient who presented a medial left giant lesser sphenoid wing meningioma involving the supraclinoid carotid artery. One week after surgery, she developed vasospasm whose treatment using milrinone achieved excellent results.

Case Description: This is the case of a 23-year-old female with a large meningioma of the middle third of the lesser wing of the left sphenoid. Furthermore, the patient had symptoms of headache, diplopia, and left amaurosis (Video 1). The lesion involved the supraclinoid left carotid artery, causing significant stenosis of the vessel. The patient underwent surgical treatment without complications. One week after the procedure, she evolved with lowered level of consciousness, complete, and proportionate right hemiparesis and right Babinski's sign. Angiographic study demonstrated significant stenosis of the left supraclinoid artery. After endovascular treatment with milrinone, the patient evolved with immediate improvement of signs and symptoms.

Conclusion: Giant meningiomas with vascular involvement involve a higher risk of postoperative vascular complications. Other studies should be carried out to predict these complications and thus develop preventive measures.

Keywords: Endovascular treatment, Giant sphenoid wing meningioma, Microsurgery, Vascular encasement, Vasospasm

[Video 1]-Available on:
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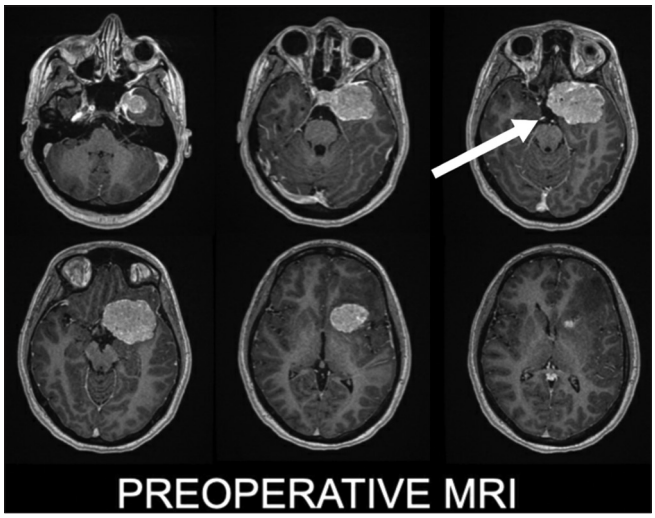
Annotations[1-10]

1) 0:13 – Clinical presentation
2) 0:39 – Neurological examination
3) 0:44 – Neuroimage findings
4) 2:05 – Rationale for procedure
5) 2:29 – Risks of the procedure and its potential benefits



Video 1: Surgical procedure. Video is accessible from the portal.

6) 3:12 – Alternatives and why they were not chosen
7) 4:05 – Description of the setup
8) 4:25 – Necessary equipment
9) 4:36 – Key surgical steps
10) 4:42 – Video
11) 7:02 – Disease background
12) 8:12 – A brief review of clinical and image outcome.

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Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Balase A, Hurghis C, Tamas F, Chinezu R. Surgical strategies and clinical outcome of large to giant sphenoid wing meningiomas: A case series study. Brain Sci 2020;10:957.
2. Behari S, Giri PJ, Shukla D, Jain VK, Banerji D. Surgical strategies for giant medial sphenoid wing meningiomas: A new scoring system for predicting extent of resection, Acta Neurochir (Wien) 2008;150:865-77.
3. Brastianos PK, Galanis E, Butowski N, Chan JW, Dunn IF, Goldbrunner R, *et al*. Advances in multidisciplinary therapy for meningiomas, Neuro Oncol 2019;21 Suppl 1:i18-31.
4. Bulsara KR, Patel T, Fukushima T. Cerebral bupass surgery for skull base lesions: Technical notes incorporating lessons learned over two decades, Neurosurg Focus 2008;24:E11.
5. Chaddad-Neto F, Doria-Netto HL, Filho JM, Neto MR, Silva-Costa MD, Oliveira E. Orbitozygomatic craniotomy in three pieces: Tips and tricks. Arq Neuropsiquiatr 2016;74:228-34.
6. Goldsmith B, McDemott MW. Meningioma. Clin N Am 2006;17:111-20.
7. McCracken DJ, Higginbotham RA, Boulter JH, Liu Y, Wells JA, Halani SH, *et al*. Degree of vascular encasement in sphenoid wing meningiomas predicts postoperative ischemic complications, Neurosurgery 2017;80:957-66.
8. Mooney MA, Ibn Essayed W, Aziz-Sultan MA, Al-Mefty O. Concomitant embolization and microsurgical resection of a giant, hypervascular skull base meningioma: 2-Dimensional operative video. Oper Neurosurg (Hagerstown) 2021;21:E97-8.
9. Slot KM, Verbaan D, Bosscher L, Sanchez E, Vandertrop WP, Peerdeman SM. Agreement between extent of meningioma resection based on surgical Simpson grade on postoperative magnetic resonance imaging findings. World Neurosurg 2018;111:e856-62.
10. Yang J, Ma SC, Liu YH, Wei L, Zhang CY, Qi JF, *et al*. Large and giant medial sphenoid wing meningiomas involving vascular structures: Clinical features and management experience in 53 patients. Chin Med J (Engl) 2013;126:4470-6.

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