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Case Presentation

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Acute Hemorrhagic Onset Meningothelial Meningioma: A Case Report with Emergent Resection

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Abstract

Meningiomas are typically slow-growing, benign tumors that rarely present with acute neurological symptoms. However, spontaneous intratumoral hemorrhage remains a rare but life-threatening complication. We report the case of a 70-year-old woman who presented with headache, dizziness, nausea, and a recent history of focal seizures affecting the right extremities. Initial neurological examination showed mild impairment, but her condition rapidly deteriorated, necessitating urgent imaging. Head CT revealed an inhomogeneous intraparenchymal hemorrhage in the left parietal lobe associated with a contrast-enhancing mass and midline shift. Emergency surgical intervention was undertaken, resulting in total tumor and hematoma resection. Histopathology confirmed a meningothelial meningioma (WHO Grade I). The patient showed significant postoperative recovery with no neurological deficits by day six and no evidence of recurrence at one-month follow-up. This case highlights the importance of rapid diagnosis and surgical management in hemorrhagic meningioma to prevent permanent deficits or death.

Keywords: Convexital meningothelial meningioma; Hemorrhagic onset; Total resection; Decompression; Tumor control

Introduction

Meningiomas are benign brain tumors that typically grow slowly and therefore do not usually require emergency therapeutic intervention **[1,2].** Meningiomas arise from arachnoid cap cells and are usually found in middle-aged and older women [**3].** Meningothelial meningiomas (also known as syncytial or endothelial meningiomas) are the most common histological subtype, accounting for approximately 60% of all meningiomas, either combined with fibrous meningioma (40%) or occurring in isolation (17%) **[4-6].** Grade 1 meningiomas are the most frequently encountered type. They are classified as low-grade tumors, meaning the tumor cells exhibit slow growth **[1,7].** Here is the patient presented below with acute hemorrhage from a left parietal lobe meningothelial meningioma, which was treated with emergency complete surgical resection.

Case Presentation

A 70-year-old women was admitted to the ER department with complains of headache, dizziness, and nausea, GCS was 13, followed commands partially and with delay, without any evident neurological deficit. In the last 2 months there have been several episodes of convulsions in the right extremities (presumably manifestations of focal seizures), along with decreased sensation. Given the patient's complains, the absence of clear neurological deficits and the need to exclude a possible stroke in the vertebrobasilar arterial system to clarify the final diagnosis, brain MRI was indicated. However, prior to the MRI, the patient's general condition deteriorated, GCS was 7-8.Focal neurological deficits emerged, suggestive of cerebral involvement (anisocoria with the right pupil smaller than the left, in the right side a weak flexor response to strong pain stimuli), necessitating urgent transfer for a brain CT scan.

Head CT, CTA revealed an inhomogeneous intraparenchymal hemorrhage in the left parietal lobe with midline shift, presumably associated with a peripheral contrast-enhancing mass **(Figure 1)**.

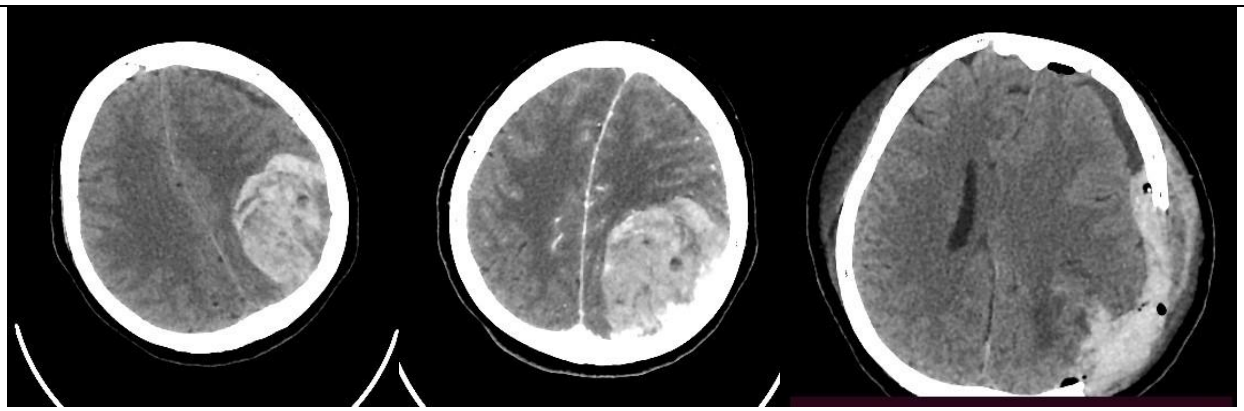
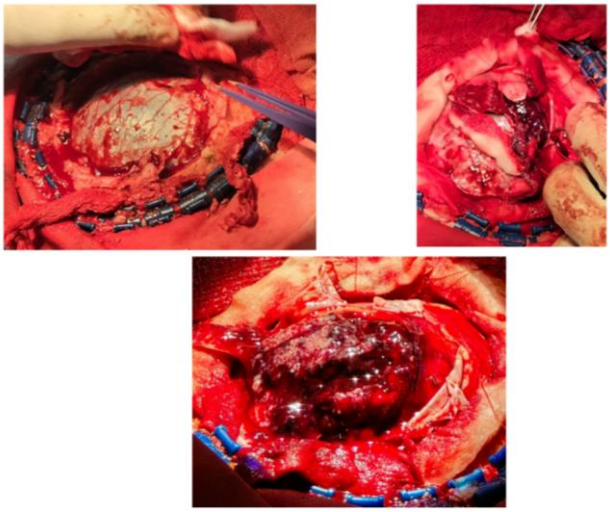
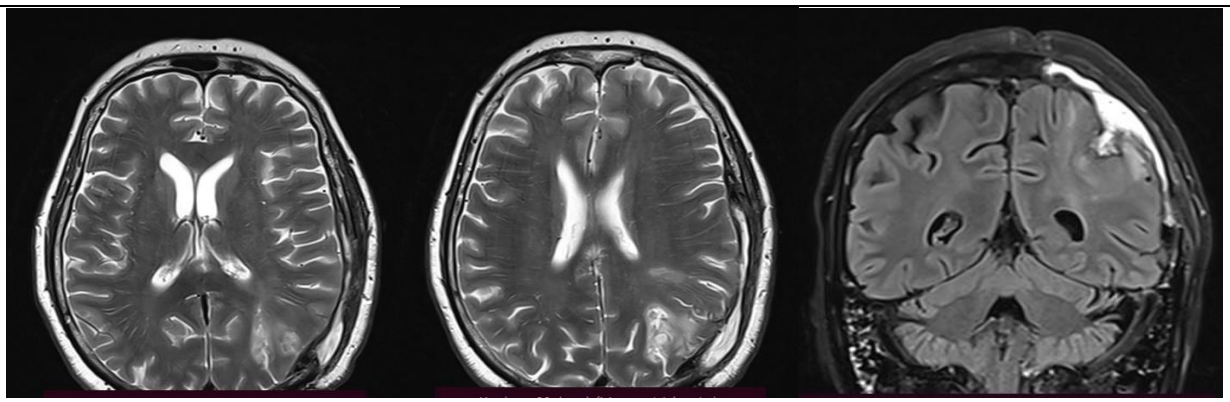


Figure 1: a. Native CT scan b. CT scan with contrast c. Postoperative CT scan.

No pathological changes were found in the intra- and extracranial arteries. Laboratory investigations were within physiological limits. Due to progressive deterioration in the patient's general condition further MRI investigation could not be performed. Patient underwent emergency surgery with total mass resection, hemorrhage removal with craniectomy **(Figure 2).**



Postoperatively, a CT scan was performed, revealing a small collection of blood in the subaponeurotic space **(Figure 1c).** The patient showed gradual clinical improvement, and by postoperative day 6, there were no detectable neurological deficits. The patient was subsequently transferred from the intensive care unit to the neurosurgical department for further management. The histopathological features and the immunohistochemical/antigenic profile of the tumor cells were consistent with fragments of meningioma, most compatible with meningothelial meningioma. A follow up MRI performed one month after surgery showed no evidence of tumor recurrence.



Discussion

Meningiomas are the most common benign intracranial tumors [1], with meningothelial meningiomas representing the most frequent histological subtype [5]. These tumors typically follow an indolent course and are often discovered incidentally or due to slow-onset neurological symptoms [2]. Acute hemorrhage associated with meningiomas is exceedingly rare, reported in less than 2% of all cases [8], and often leads to diagnostic and therapeutic challenges due to its resemblance to other intracranial pathologies such as stroke or vascular malformations [9]. In the presented case, the patient's subacute symptoms of focal seizures and paresthesias likely represented early cortical irritation by the tumor. The sudden neurological decline and imaging findings of intraparenchymal hemorrhage with midline shift necessitated immediate surgical intervention. Hemorrhagic transformation in meningiomas may be due to vascular rupture within the tumor or surrounding brain parenchyma, although the precise mechanism remains uncertain. The absence of vascular anomalies on CTA in this case supports a tumor-related etiology. Early recognition of clinical deterioration and timely imaging were critical to achieving a favorable outcome. Complete surgical resection remains the definitive treatment in such emergencies, both for hemorrhage control and histopathological diagnosis. Postoperative recovery in this case was notably rapid, and follow-up imaging confirmed the absence of residual or recurrent tumor.

Conclusion

Although meningiomas are generally benign and slow-growing, this case underscores the potential for rare but serious complications such as spontaneous hemorrhage. Acute clinical deterioration in patients with known or suspected intracranial tumors should prompt urgent imaging to rule out hemorrhagic events. Emergency surgical intervention can be life-saving and lead to excellent neurological outcomes when promptly executed. Continued vigilance and early management are essential in such high-risk presentations.

Acknowledgement

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