



A SCARE-compliant case report of recurrent meningioma in a 75-year-old patient after 10 years of surgical resection

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Introduction and importance: Meningiomas are intracranial extracerebral tumors derived from arachnoid cells of the neural crest. They represent ~20% of primary intracranial tumors and are seen as more common in elderly patients and women. Recurrence of meningioma can be observed during the early years after surgical treatment, but their occurrence within 10 years is rare.

Case presentation: In this report, the authors discuss a case of a 75-year-old patient with a recurrence of a frontal meningioma after 10 years of successful surgical resection. Our patient was a female who presented amnesia and memory lapses associated with several weeks of progressive heaviness of the lower limbs accompanied by speech heaviness, intense headaches, asthenia, consciousness disorder, and tonic-clonic convulsive seizures for 10 days. The patient had previously been treated for a benign meningioma by surgical excision. Imaging was performed, and recurrent frontal meningioma was retained as a final diagnosis. The patient underwent a successful total resection of her frontal tumor.

Clinical discussion: Recurrent tumors after complete surgical removal of meningiomas are rare and may be associated with microscopic residues. The more radical the surgery, the lower the risk of observing a recurrence. Adjuvant radiotherapy can be proposed, but the evidence is still lacking. Careful follow-up of all patients with or without complete surgical resection is therefore recommended.

Conclusion: This case illustrates the importance of suspecting recurrence of meningioma in adult patients after successful surgical excision, even after 10 years of free disease. Clinicians should be aware of long-term meningioma recurrence in this population, and imaging is key for a positive diagnosis.

Keywords: case report, long-term recurrence, meningioma, surgical resection

Introduction

Meningiomas are intracranial and extracerebral malignancies originating from arachnoid cells^[1]. These tumors often invade the dura mater and the skull with hyperplastic growth of bone tissue^[2]. The annual incidence of all meningiomas is estimated at 8 per 100 000 inhabitants^[3]. They represent ~20% of primary intracranial tumors and are more common in elderly patients, particularly women^[1,4,5]. Meningiomas are frequently diagnosed

HIGHLIGHTS

- Meningiomas are intracranial and extracerebral benign tumors.
- Long-term recurrence after complete surgical resection is rare.
- Long-term and accurate follow-up of these patients with imaging is crucial to detect recurrence.

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in the elderly population, with an increased incidence in subjects aged more than 56 years^[6]. The recurrence of meningioma is frequent, but it becomes rare after 10 years of successful surgical removal^[7,8]. Several symptoms can reveal recurrence, particularly cognitive and executive impairments^[5]. In this paper, we discuss a case of a 75-year-old patient with a recurrence of a frontal meningioma after 10 years of complete surgical excision according to SCARE (Surgical CASe REport) guidelines^[9].

Case report

Our 75-year-old patient had amnesia and memory lapses for several months and a progressive heaviness of the lower limbs for several weeks accompanied by signs of aggravation, including heaviness of speech, intense headaches and asthenia, disorders of consciousness, and tonic-clonic convulsive seizures. Her past medical history was marked by hypertension since 1995,

and she was previously treated successfully for benign frontal meningioma by complete resection. Upon admission, her Karnofsky performance index was 70%, and her Glasgow score was 12 without hemodynamic instability. The clinical examination found a patient with total Broca's aphasia, characterized by a complete inability to speak and name relatives and objects associated with anxiety.

A brain MRI (Fig. 1) with contrast injection showed a bilateral frontal meningioma more marked on the right, measuring 7.3 cm laterally, 5.7 mm in the anteroposterior side, and extended in height over 5 cm. The tumor had meningeal implantation encompassing the anterior part of the longitudinal sinus and had a mass effect on the frontal horns of the lateral ventricles and the corpus. A computed tomography scan was also performed and

showed the presence of a bifrontal extra-axial lesion surrounded by significant perilesional edema (Fig. 2).

The patient underwent total resection of her frontal tumor by a senior neurosurgeon with the support of young fellows. The histopathological examination found a meningioma with a hemorrhagic appearance of a grayish-white color. This was an atypical WHO grade II meningioma composed of a proliferation of meningothelial cells largely altered by fibrosis. The cells were arranged in clumps and the mitotic count was estimated at one mitosis per 10 fields. Two weeks following total surgical excision, Broca's aphasia disappeared with a Glasgow score of 15/15

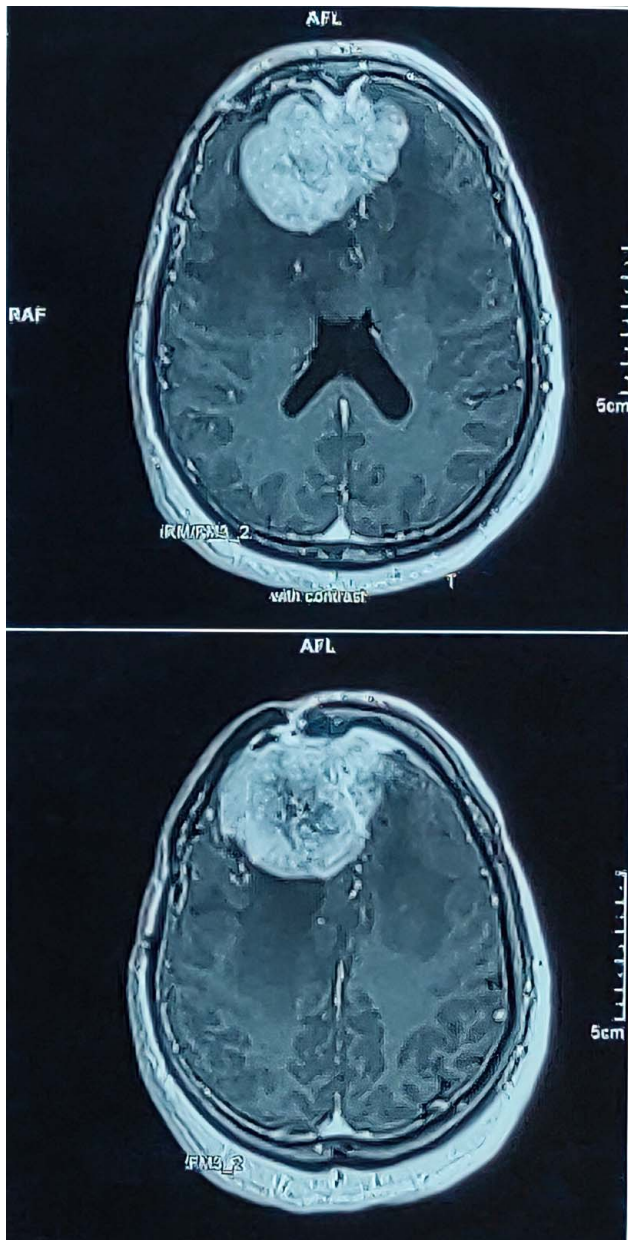


Figure 1. Brain MRI showing a recurrent bilateral frontal meningioma.

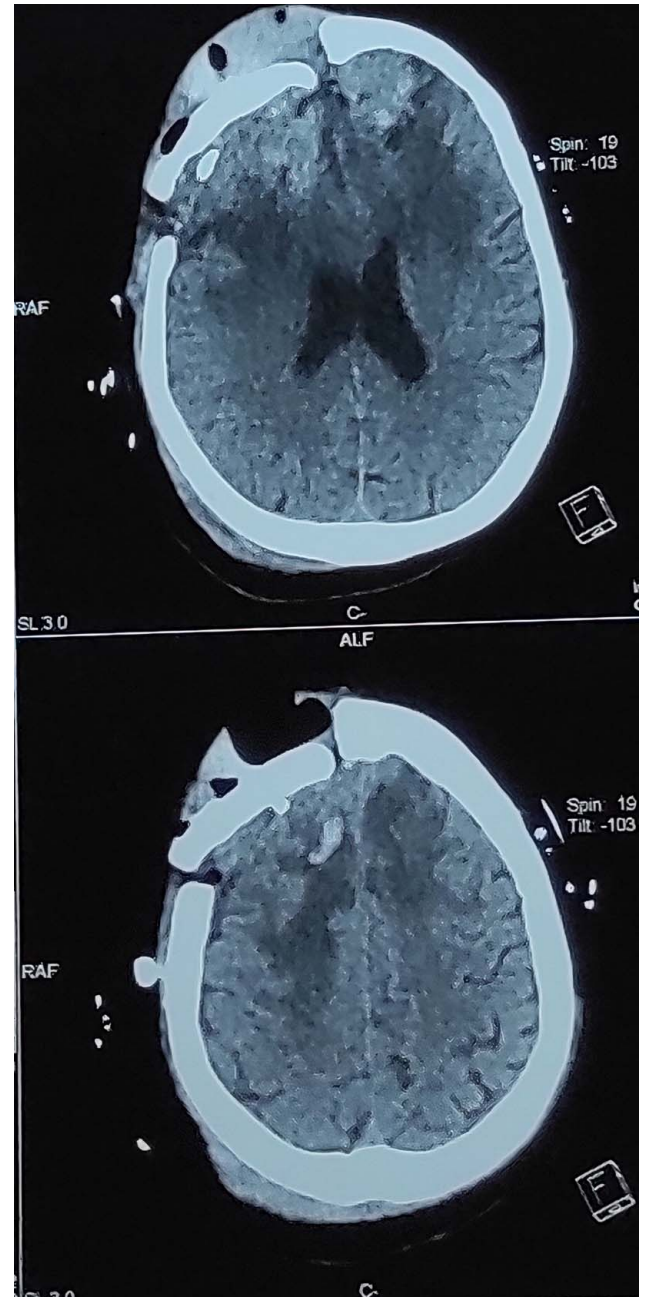


Figure 2. Computed tomography scan showing a recurrent lesion surrounded by significant perilesional edema.

without any deficit. The Mini-Mental State Examination for global cognitive assessment was performed, and our patients had mild cognitive dementia. The patient also had postoperative anxiety without depression based on the Hospital Anxiety and Depression Scale (HADS) test. We discharged the patient, and she was followed up regularly as per international recommendations. At the time of reporting this case, our patient had a gradual decrease in anxiety and weakness in her lower limbs, and she was satisfied with our management.

Discussion

Meningiomas are frequent and represent an important number of primary brain tumors^[6,7]. The diagnosis of meningiomas is usually made between 20 and 60 years of age, with a peak incidence in the 5th decade^[10]. Recurrence of meningiomas after complete removal is estimated to be 10–32% of cases within 10 years^[7,8]. The female predominance is classic and the prevalence in women is explained in part by the presence of progesterone receptors on these tumors in addition to other types of hormonal receptors such as estrogen, androgen receptors, and glucocorticoid receptors^[10–14]. This accounts for 63–79% of female predominance^[12–15]. Headaches represent predominant revealing symptoms^[10,16–18] and the motor deficit is frequent in patients treated for meningiomas and its prevalence accounts for more than 50% in some studies^[10,16]. Epileptic seizures can also be seen in this population. Consciousness disorders are a rarely revealing sign of meningiomas. They are seen especially in patients who consult late when the tumor becomes larger. This was reported in 1.8–7.14% of patients with meningiomas^[19,20]. For depression and anxiety in meningiomas, patients were found to show higher levels of distress than in the general population, which was also seen in our patient's case. In fact, the proportion of patients with abnormal HADS-A scores can reach 70%, and 30% for HADS-D in operated patients^[21–24].

In elderly patients, intracranial meningiomas are the most commonly diagnosed benign tumors. The age of this population of patients (aged 70 years or more), in addition to other factors such as surgery duration and extent of tumor resection, is believed to drive surgical outcomes as demonstrated in several of recent studies^[25,26]. Indeed, elderly patients have unfavorable outcomes as compared to the younger meningioma population, which was not confirmed in our surviving patient. Recurrence in patients treated with surgery is associated with incomplete resection^[25–27]. However, recurrent tumors after complete surgical removal are rare, and they might be associated with microscopic residue, as in our patient. In a case series, recurrence was seen years and decades after surgical interventions such as in our case, but this was associated with subtotal resection^[28]. In fact, the more radical the surgery, the smaller the risk of observing a recurrence^[26], which is consistent with the long-term outcomes in our patient. Some authors have proposed to proceed directly after surgery with adjuvant radiotherapy, as it reduces the risk of recurrence^[29]. Incomplete removal of meningiomas can recur 15 years after a tumor-free period^[30], therefore, a careful follow-up of all patients with or without complete surgical resection is recommended.

Conclusion

This report illustrated the case of a 75-year-old patient who presented a recurrence of her meningioma after 10 years of diagnosis and complete excision. Our case report emphasizes the importance of long-term follow-up of patients with meningiomas treated with complete surgical resection.

Ethical approval

Not required for this case report.

Patient consent

Written informed consent was obtained from the patient for the publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

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Author contribution

L.M. and E.O.A.: data collection; L.M.: writing the paper. All authors were involved in the study concept.

Conflicts of interest disclosure

The authors have no conflicts of interest to declare.

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