

# Unusually Large Cystic Meningioma In A Pregnant Patient: A Case Report

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## Abstract

Large cystic meningiomas are rare and diagnostically challenging. We report a case of an unusually large cystic meningioma in a pregnant patient with discussion of possible aetiologies.

## INTRODUCTION

Meningiomas are benign tumours, which account for 13 to 18 % of all intracranial neoplasms <sup>1</sup>. Cysts associated with meningiomas are uncommon and it is often confused with metastatic or glial malignancy <sup>2, 3</sup>. Reported cases of cystic meningiomas in literature usually contains a solid component with obvious attachment to the dura. We report a case of purely large cystic meningioma in a pregnant patient with a misleading radiological appearance, delaying the correct diagnosis until histopathological confirmation.

## CASE REPORT

A 37 year old primigravida of 36 weeks gestation was admitted to her local hospital with a two-day history of headaches and vomiting. Her neurological examination on admission was normal. Due to worsening symptoms a CT scan was performed after consultation with the neurology team.

## Figure 1

Figure 1: Pre-operative non-contrast CT scan of brain demonstrates an 8 x 5.3 cm cystic lesion.



The non-contrast CT scan revealed a right sided fronto-parietal cystic lesion causing effacement of the lateral ventricle and midline shift (Figure 1). A provisional diagnosis of a low grade cystic glioma was made and the patient was urgently transferred to our neurosurgical unit.

On arrival she scored 15 on the Glasgow Coma Scale with no obvious neurological deficits and was admitted to the high dependency unit for close monitoring. On the night of admission, the patient's level of consciousness declined. Hence requiring an emergency caesarean section followed by a craniotomy. During the fronto-parietal craniotomy the large cyst was drained and multiple biopsies of the cyst wall were taken. The post operative course was uneventful and

the patient was discharged from to be followed up in the outpatient clinic. The histopathological examination revealed the lesion to be a cystic meningioma.

### DISCUSSION

Cystic meningiomas account for 2 to 4 % of all intracranial meningiomas <sup>4</sup>. Fortuna et al reported 22 (1.7%) patients with cystic meningiomas out of 1313 patients with intracranial meningiomas who had surgery at their institution during a 35 year period <sup>5</sup>. Recently Jung et al reported only 21 cases (5.5%) of cystic meningiomas in a cohort of 365 patients with intracranial meningiomas <sup>6</sup>. The majority of these reported lesions were partially solid and partially cystic.

Various aetiologies have been suggested for cyst formation in meningioma by different authors. The principal mechanisms suggested are ischemic central necrosis and cystic degeneration; haemorrhage followed by cystic/necrotic changes, evolution of cerebral oedema into a peritumoral cyst and secretion of fluid by an active tumour cells or reactive perilesional glial cells <sup>10</sup>.

Cystic meningiomas are diagnostically difficult tumours and appearance on CT can often be mistaken for a glial tumour <sup>7</sup>. Umansky et al reported 44% error in the preoperative diagnosis of cystic meningioma when CT was used in a cohort of 32 patient's <sup>8</sup>. Ferrante et al in 1997 reported a correct preoperative diagnosis of 37.9% by CT scan and

12.6% by angiography <sup>9</sup>.

In conclusion purely cystic meningiomas are extremely rare. This case demonstrates the difficulty in making a correct preoperative diagnosis of a cystic meningioma based on imaging. In some patients correct diagnosis may only be possible after histopathological examination even with modern imaging techniques.

### References

1. Claus E, Bondy M, Schildkraut J, et al. Epidemiology of intracranial meningioma. *Neurosurgery* 2005; 57(6):1088-1095.
2. Carvalho GA, Vorkapic P, Biewener G, Samii M: Cystic meningiomas resembling glial tumors. *Surg Neurol* 1997; 47:284-290.
3. De Jesus O, Rifkinson N, Negron B. Cystic Meningiomas: a review. *Neurosurgery* 1995; 36:489-492.
4. Park SS, Koh EJ, Lee WJ, et al. Cystic meningiomas. *J Korean Neurosurg Soc* 2006; 40:281-284
5. Fortuna A, Ferrante L, Acqui M, et al. Cystic Meningiomas. *Acta Neurochir* 1998; 90:23-30.
6. Jung TY, Jung S, Shin SR, Moon KS et al. Clinical and histopathological analysis of cystic meningiomas. *J clin Neurosci* 2005;12:651-5.
7. Genya O. Cystic Meningioma: report of three cases. *Neurosurgery* 1992; 30(6):935-939.
8. Umansky F, Pappo I, Pizov G. Cystic changes in intracranial meningiomas: a review. *Acta Neurochir* 1988; 95:13-18.
9. Ferrante L, Mastronardi L, Acqui M, et al. Recurrent cystic meningioma; report of two cases. *J Neurosurg Sci* 1987; 31:177-182.
10. Nauta HJW, Tucker WS, Horsey WJ, et al. Xanthochromic cysts associated with meningioma. *J Neurol Neurosurg Psychiatry* 1979; 42:529-35.

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