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Case Report

Parasagittal cystic meningioma mimicking hemangioblastoma: A case report

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ABSTRACT

Background: Cystic meningioma is a rare variety with similar histological profiles like the solid tumors. It has been documented in both supratentorial and infratentorial compartments presenting radiologically as a large cyst with mural nodule mimicking hemangioblastoma.

Case Description: We managed a middle-aged woman who presented with recurrent seizures and brain MRI revealed left frontal cystic parasagittal tumor with mural nodule. She had left frontal awake craniotomy and gross total tumor excision. Histology confirmed meningothelial meningioma.

Conclusion: Cystic meningioma is rare but should be high in differentials of cystic intracranial tumor with dural based nodules. Awake craniotomy is possible for the excision of parasagittal tumor most especially when it is frontal in location.

Keywords: Awake craniotomy, Cystic meningioma, Hemangioblastoma, Parasagittal tumor

INTRODUCTION

Meningioma is a universal tumor which can occur in any location along the neuroaxis where there are arachnoid cap cells.[6] It is usually a solid homogenous contrast enhancing dural based tumor which occur in all age groups but more in middle-age and elderly population.[11,12] Meningioma is a common primary intracranial tumor with spectrum of histological patterns from benign to malignant profiles.[2,3,11] Most of the meningiomas histological profiles are benign.[2,10,11] Cystic meningioma is a rare variety with similar histological profiles like the solid tumors. It has been documented in both supratentorial and infratentorial compartments presenting radiologically as a large cyst with mural nodule mimicking hemangioblastoma.[1,4,8] Preoperative diagnosis is usually challenging and the final diagnosis achieved after histology of the tumor specimen.[5,13,14] Surgery is the gold standard for symptomatic meningiomas including cystic meningioma, usually under general anesthesia; however, awake craniotomy is gaining more attention in modern neurosurgical practice.[9] The need for adjuvant management depends on the extent surgical excision and tumor biology.

We managed a middle-aged woman who presented with recurrent seizures and brain magnetic resonance imaging (MRI) revealed left frontal cystic parasagittal tumor with mural nodule. She had left frontal awake craniotomy and gross total tumor excision. Histology confirmed meningothelial meningioma.

CASE REPORT

A 48-year-old woman with 6-months history of complex partial seizures resistant to multiple anticonvulsants associated with headache and right hemibody weakness. There was no family history of seizures disorder. She has no history of chronic medical illness. She was initially managed at a nearby tertiary hospital where there was no resident neurosurgeon but referred to our facility on account of 2-week history of progressively worsening symptoms and altered sensorium.

Examination revealed middle aged woman, she was sleepy but rousable with motor aphasia and localized with left hand. There was right supranuclear fasciolaris and right hemiplegia. The examination of other system was normal.

Clinical diagnosis of adult onset seizures secondary to the left frontal space occupying lesion was made. Brain MRI [Figure 1] showed the left frontal cystic parasagittal tumor with parasagittal contrast enhancing mural nodule attached to the lateral wall of the superior sagittal sinus and adjacent falx cerebri and perilesional edema. Radiological diagnosis of hemangioblastoma to keep in view cystic meningioma was made. She was commenced on intravenous dexamethaxone. She regained consciousness within 24 h. She was fully awake but aphasic and right hemiplegia persisted. She had left frontal awake craniotomy and gross total tumor excision. Intraoperative findings include straw color cyst fluid, extra-axial solid vascular tumor based on the lateral wall of the superior sagittal sinus, and adjacent falx cerebri.

Postoperative clinical course was satisfactory, headache, aphasia, and hemiplegia resolved. Histology [Figure 2] showed meningothelial meningioma. Postoperative cranial computerized tomography (CT) scan [Figure 3] showed gross total tumor excision. Her last review was 6-month post operation. She was seizure free and she has no neurological deficit. She has returned to premorbid activities.

DISCUSSION

Meningiomas are usually solid tumors and majorities are benign with good prognosis.[10] The prognosis of cystic meningioma is similar to the solid types and depends on the histological subtypes and extents of excision. Cases of large cyst with mural nodules in which the histology of mural nodule confirmed meningioma have been documented.[7,13,14]

The index patient presented with recurrent complex partial seizures but developed rapidly progressive right hemiparesis and altered sensorium. This is most likely due to rapid expansion of the cystic component and perilesional edema. The etiology of the cystic meningioma is still controversial; however, cystic degeneration within tumor is unlikely to produce the typical cystic tumor with mural nodule.

Although, it is not a common radiological feature of meningioma, a cystic intracranial tumor with dural based nodule should be considered as meningioma until proven otherwise. The diagnosis of cystic meningioma is based on preoperative imaging with CT and or MRI findings and intraoperative confirmation of a large cyst with dura based vascular mural nodules. The histology of the tumor is gold standard of differentiating the tumor from other cystic tumors most especially hemangioblastoma.[7] Cystic

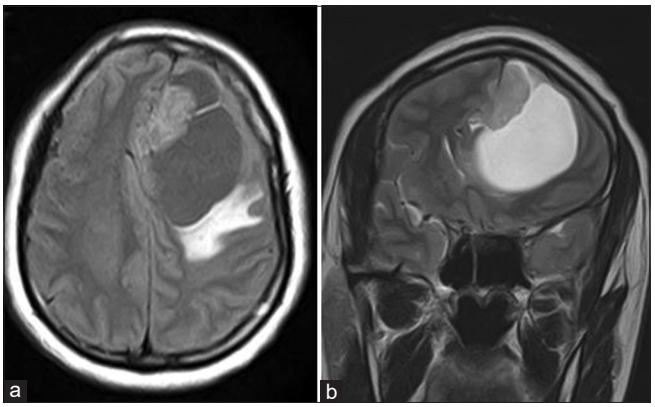

Figure 1: Brain MRI of the left frontal cystic tumor with parasagittal mural nodule. (a) Axial FLAIR image, (b) coronal T2 image.

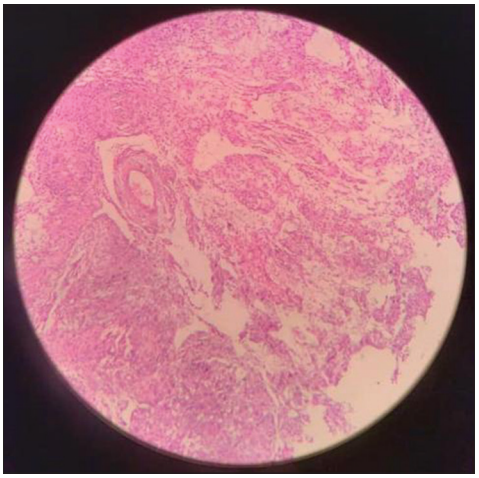

Figure 2: Micrograph (H and E) of meningothelial meningioma. Sections show a tumor mass composed of proliferating solid masses of polygonal cells disposed in syncytial pattern. The tumor cells are divided into irregular lobules by intervening fibrocollagenous stroma.

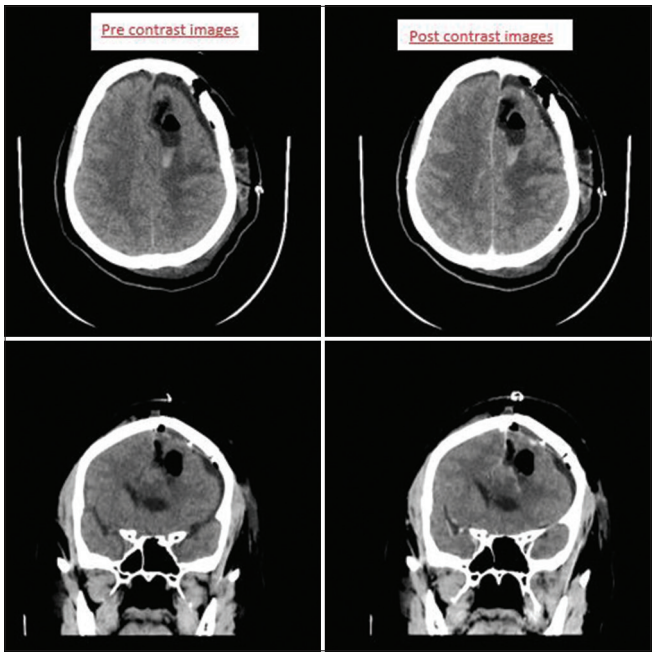

Figure 3: Postoperative cranial CT scan. No tumor residual.

meningioma has been reported in both infratentorial and supratentorial compartments.[4,8] The histology also varies as in the solid tumor variants with majority as the WHO Grade 1 tumor as in the index patient.

The management is usually surgical due to mass effect of the tumor cyst which usually require decompression and excision of the relatively small solid component for histological confirmation since the preoperative features on the imaging is usually similar to any other cystic tumor. Conventionally, a parasagittal tumor will require general anesthesia for surgical intervention but we successfully excised this parasagittal tumor through awake craniotomy protocol.[9] The prognosis depends on the histological grade of the tumor and extent of solid tumor resection.

CONCLUSION

Cystic meningioma is rare but should be high in differentials of cystic intracranial tumor with dural based nodules. Awake craniotomy is possible for the excision of parasagittal tumor most especially when it is frontal in location.

Declaration of patient consent

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

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Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Azar AK, Aghazadeh J, Salehpoor F, Rezakhah A, Mirzaii F. Intra paranchymal atypical cystic menangioma with mural nodule: A case report and pathogenesis and radiological feature. J Neurosurg Imaging Tech 2019;4:202-4.
2. Backer-Grøndahl T, Moen BH, Torp SH. The histopathological spectrum of human meningiomas. Int J Clin Exp Pathol 2012;5:231-42.
3. Choy W, Kim W, Nagasawa D, Stramotas S, Yew A, Gopen Q, *et al*. The molecular genetics and tumor pathogenesis of meningiomas and the future directions of meningioma treatments. Neurosurg Focus 2011;30:E6.
4. Guan TK, Pancharatnam D, Chandran H, Hooi TK, Kumar G. Infratentorial benign cystic meningioma mimicking a hemangioblastoma radiologically and a pilocytic astrocytoma intraoperatively: A case report. J Med Case Rep 2013;7:87.
5. Jorge D, Nadia G, Claudio V, Carlos M, Eduardo G, Report C. Cystic meningioma simulating arachnoid cyst: Report of an unusual case. Case Rep Radiol 2014;2014:371969.
6. Kane AJ, Sughrue ME, Rutkowski MJ, Shangari G, Fang S, McDermott MW, *et al*. Anatomic location is a risk factor for atypical and malignant meningiomas. Cancer 2011;117:1272-8.
7. Kuo K, Lin C, Su Y. Meningioma with cystic change mimicking hemangioblastoma. Formosan J Surg 2015;48:163-7.
8. Li J, Meng J, Wang Q, Wang Y, Liu W, Hui X. A case report on cystic meningioma in cerebellopontine angle and recommendations for management. Medicine 2018;97:e13179.
9. Okunlola AI, Babalola OF, Okunlola CK, Akinmade A, Abiola P, Olayinka T. Awake craniotomy in neurosurgery: Shall we do it more often? Interdiscip Neurosurg 2020;21:100770.
10. Riemenschneider MJ, Perry A, Reifenberger G. Histological classifi cation and molecular genetics of meningiomas. Lancet Neurol 2006;5:1045-54.
11. Salami AA, Okunlola AI, Ajani MA, Onakpoma F. WHO classification of meningiomas-a single institutional experience. Neurochirurgie 2021;67:119-24.
12. Salami AA, Ayodeji A, Okunlola AI, Ajani MA, Adekanmbi AA, Balogun JA. Pediatric meningiomas in Southwestern Nigeria: A single-institutional experience. World Neurosurg 2019;125:e94-7.
13. Sotiriadis C, Vo QD, Ciarpaglini R, Hoogewoud HM. Cystic meningioma: Diagnostic difficulties and utility of MRI in diagnosis and management. BMJ Case Rep 2015. Doi: 10.1136/bcr-2014-208274.
14. Yi CK, Burgos RM, Biega TJ. Cyst with a mural nodule: Unusual imaging characteristics of a cystic meningioma. BMJ Case Rep 2014;2:2013-4.

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