

A Rare Case of a Large Intraventricular Meningioma: A Case Report

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Abstract: *Intraventricular meningiomas are rare intracranial tumors account for 0.5-2% of all meningiomas. Most intraventricular meningiomas present between the 3rd and 6th decades with a recognized female predilection. We described here a case of large intraventricular meningioma with mass effect who was treated successfully in our institute. A 41 year male patient having headache, blurring of vision and convulsions was diagnosed as a case of right ventricular space occupying lesion (SOL). He underwent right temporo-parietal craniotomy with excision of right lateral ventricular SOL in our institute. On histopathology, it was found meningioma grade 1. Patient had tremendous clinical improvement postoperatively. We can conclude from this case that large intraventricular meningiomas if treated properly these patients can have better outcome*

Keywords: intraventricular meningiomas, fibrous meningiomas, lateral ventricles, space occupying lesion, ventricular tumors

1. Introduction

Though meningiomas comprise 15% of all intracranial tumours [1], intraventricular meningiomas are rare intracranial tumours comprising only 0.5 to 3% of all meningiomas [2,3]. Most intraventricular meningiomas arise in the lateral ventricle, especially in the trigone. [4]

They are observed more frequently at a younger age than meningiomas in other locations [5]. They are classically large, because their silent evolution. The development of CT and MRI last years, offers to the neurosurgeons the opportunity to make precisely the diagnosis, and guide their surgical approaches. Meticulous and rational planning enable complete removal of these usually benign tumors, offering permanent cure and long term survival. Intraventricular meningiomas present usually due to mass effect, either by direct compression of the adjacent brain or from obstruction to normal CSF drainage with resultant hydrocephalus. In general, these meningiomas are most commonly of the fibrous meningiomas. These lesions usually show benign clinical course. [6]

2. Case Report

A 41 year old healthy male patient came to our OPD with history of headache, blurring of vision, imbalance while walking and abnormal movements of whole body (Generalized tonic clonic convulsions- GTCS) since 5 month.

He was conscious, oriented to time, place and person. His vitals were essentially normal. His vision was finger counting 2 feet in both eyes with pupillary light reactions, extra ocular movements normal. Other cranial nerves were normal. Power was decreased on left side (left upper limb 3

with poor hand grip and left lower limb 4-) power on right side was normal. Hypertonia was noted in left upper and lower limb. Reflexes were brisk on left side. Sensory examination was normal. No other abnormality detected. Fundus examination of both eyes was s/o papilledema.

MRI brain was done and was suggestive of 70*60 mm lobulated well defined, altered signal intensity lesion seen possibly arising from right occipital horn and trigone of right lateral ventricle with compressive effect in the form of 13mm midline shift to left side and right uncus herniation. Dilation of left lateral ventricle (left temporal horn 14mm) s/o developing obstructive hydrocephalus.

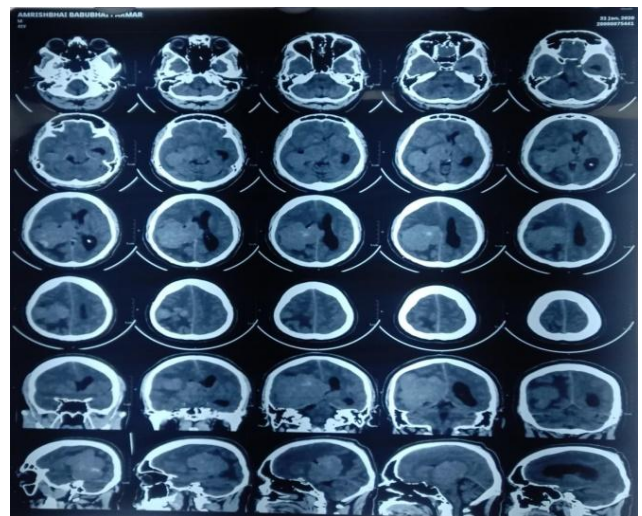


Figure 1: Preoperative CT scan

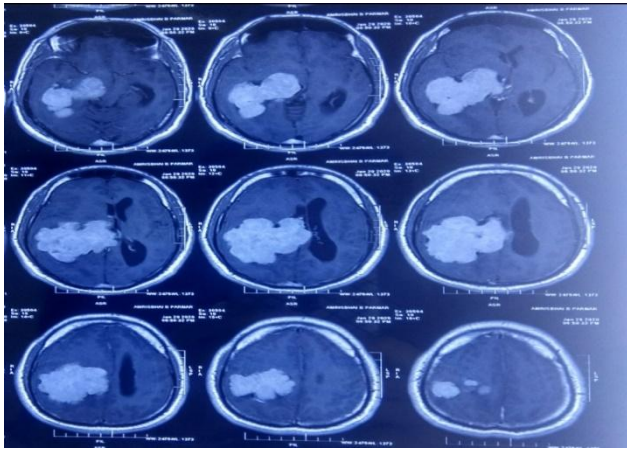


Figure 2: Preoperative MRI Image

After thorough pre operative necessary work up and anaesthetic fitness, right temporo-parietal craniotomy and excision of right lateral ventricular sol surgery was planned. Patient was operated under g.a in supine position with head turned towards left side with pillow under shoulder and head fixed over the sugita head fixator. Right parietotemporalincision was taken and craniotomy done. Tumour was excised with the help of bipolar cautery and tumor holding forceps under microscopic view.Hemostasis done. Dura was kept open and bone flap was kept back. Closure was done in layers. Procedure was uneventful. Post-operative patient symptomatically improved with decreased headache, improved vision (bilaterally 6/18 from preoperative finger counting 2feet) and power improved on left side (became 5/5 in left upper and lower limb). Patient was discharged after suture removal.

Histopathology report of patient was meningioma grade 1.

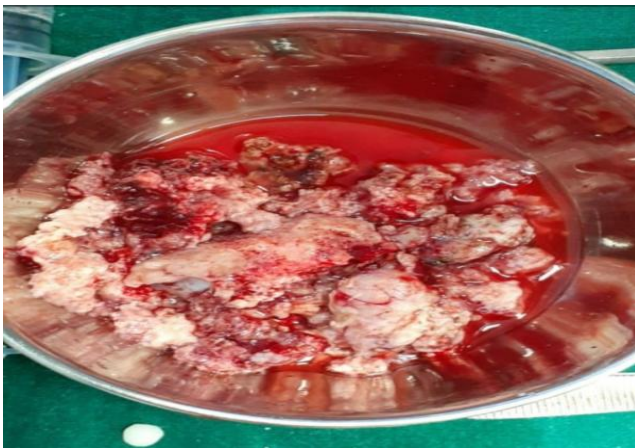


Figure 3: Resected Specimen

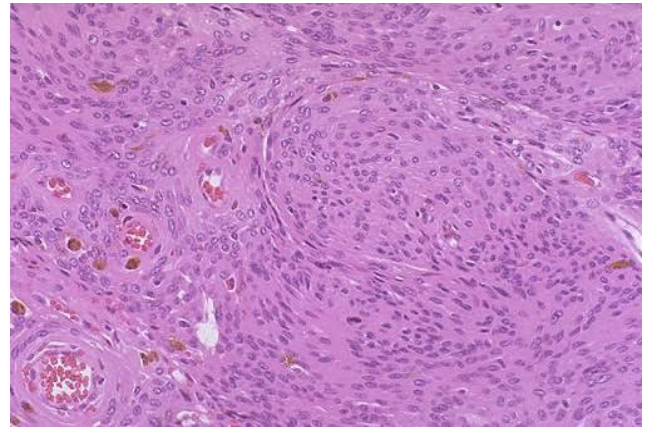


Figure 4: Histopathology

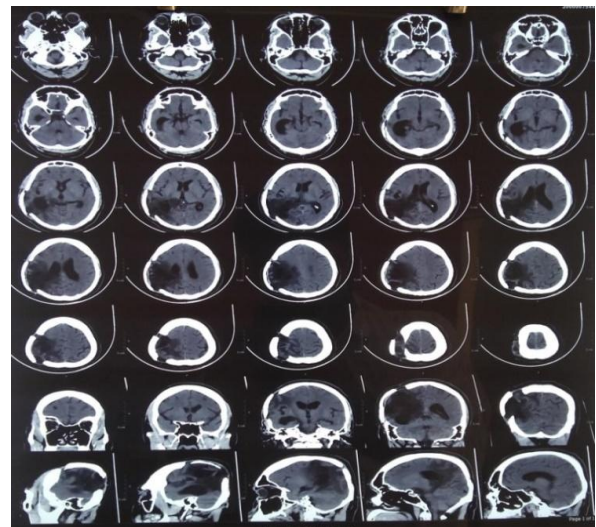


Figure 5: Postoperative scan



Figure 6: Postoperative Photograph

3. Discussion

Meningiomas are the most common benign intracranial masses comprising of 15% of all intracranial tumours. [1] Intraventricularmeningiomas are rare account for 0.5-1% of all meningiomas.[2] Most intraventricular meningiomas present between the 3rd and 6th decades with a recognised female predilection (M:F ratio of 1:2). They are most frequently (80%) seen at the trigone of the lateral ventricles,

as choroid plexuses are bulkier in lateral ventricles, slightly more frequently on the left. (80% trigone of lateral ventricle, 15% third ventricle, 5% fourth ventricle).[4,7,8] Intraventricular meningiomas are derived from arachnoid cells which overlap and invaginate with the choroid plexus at the time of embryogenesis, especially 7-8th week of development. Characteristically, they do not have dural attachment unlike usual meningiomas. In our case patient was 41 years male having right lateral ventricular meningioma.

Diagnosis is often delayed because of slow development of tumour in extensible space. CT and MRI findings of intraventricular meningiomas are relatively non-specific but irregular lobulated shape and intratumoral necrosis are frequently seen in the atypical or malignant form. On CT and MRI, they have a lobulated regular shape, because the free space to expand for tumor growth. The irregularity of the lobulation signs malignancy. On CT scans, these tumors are hyperdense and may contain calcifications. Meningiomas are or hypointense on T1, iso or hyperintense on T2. Contrast enhancement is important on both CT and MRI.[8] The histological findings described showed that, these tumors are predominantly fibrous, fibroblastic, or psammomatous and exceptionally malignant.[8, 9]

The surgical excision remain a logical solution and despite the difficulties and the large size, total removal must be the aim. [10, 11] Several approaches are used for the lateral ventricle: The temporo parietal approach described by Cushing, posterior middle temporal gyrus approach recommended by Dela Torre, and posterior parieto-occipital approach described by Cramer. [12,13,14] The mortality depends on the experience of neurosurgeon, and its knowledge of the anatomy. In literature it variants between 0 and 42%, however, mortality is around 25%, as reported by Fornari et al.[15] The endoscopic resection seems to be less invasive, and safer, for the smaller IVMs, but not practical for the large, highly vascular ones.[16]

4. Conclusion

Intraventricular meningiomas are rare. It has benign course similar to other meningiomas, but can cause hydrocephalus and neurological deficits like vision loss and weakness. In contrary to historical beliefs, prompt and planned surgical management gives good outcome.

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