IndSPN Case of the Month

March 2023

Clinical Presentation

A fifteen years-old boy born out of non-consanguineous marriage brought by parents with chief complaints of -

- Focal aware seizures with secondary generalization x 2 months
- Right frontal headache x 2 months

Clinical Examination

- Conscious, oriented to time, place and person
- Nutrition – Adequate
- Higher mental functions : Intact
- V/A – B/L 6/9
- Fundus – Right eye: Grade 4 papilledema

Clinical Examination

- Tone – Normal in all 4 limbs
- Power – Normal in all 4 limbs
- Deep tendon reflexes – 2+ in all 4 limbs
- Plantar : B/L flexor
- Sensory : Normal
- Cerebellar/ Lobar/ Meningeal/ Neurocutaneous markers : Absent

Provisional Diagnosis with Clinical Localization

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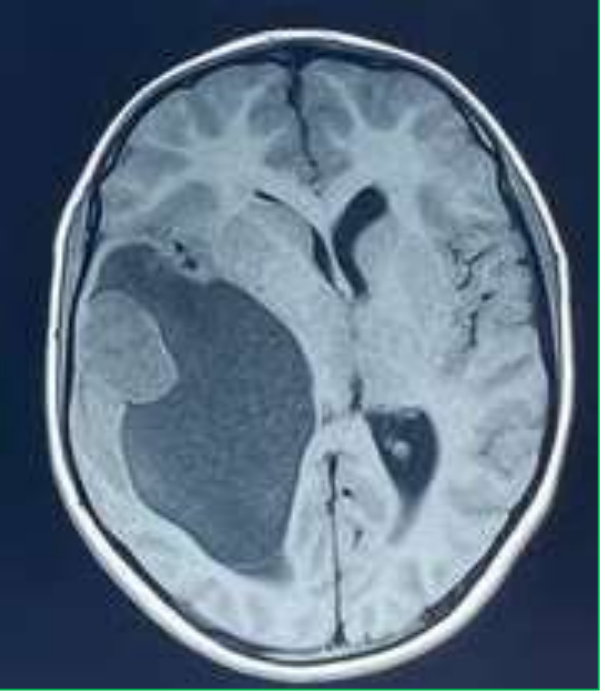
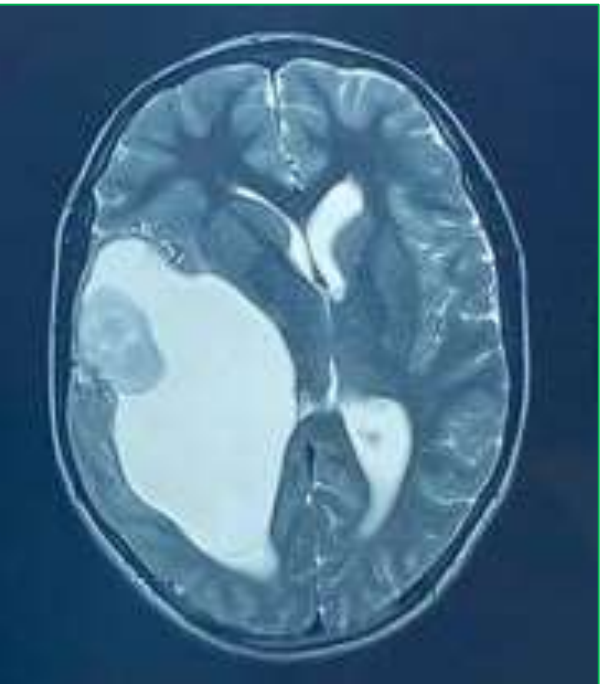
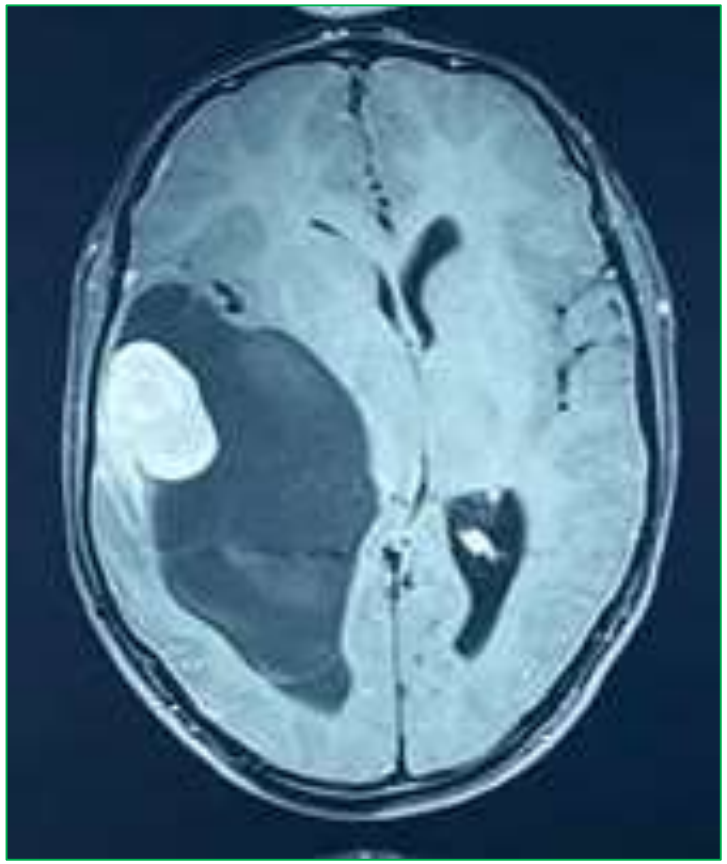
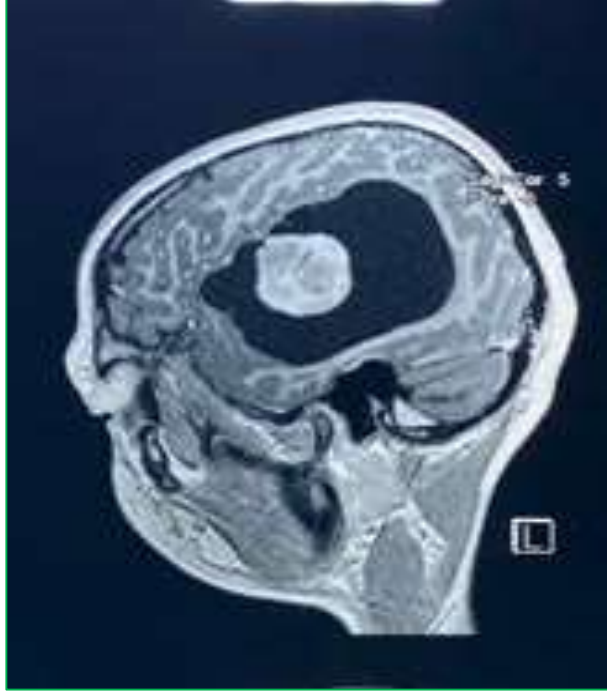
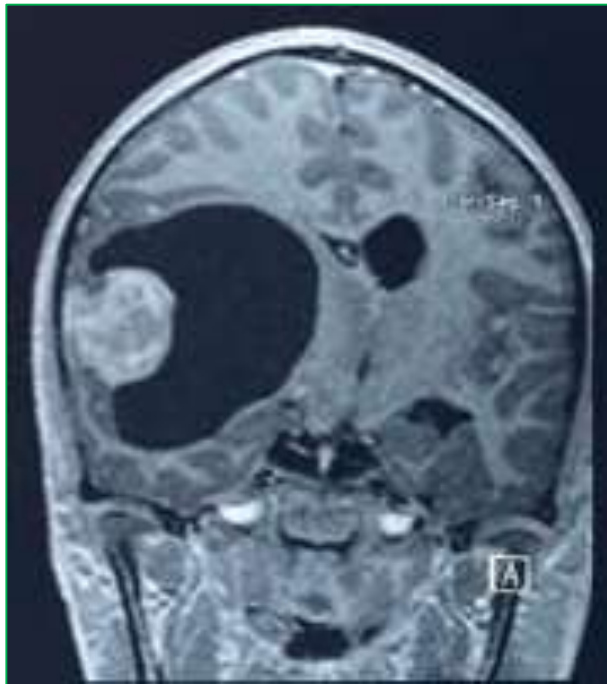
Radiology











➢ *MRI Brain (Plain + Contrast)*

- There is evidence of a single, well-defined solid-cystic (predominantly cystic) lesion in right frontotemporal region with an eccentric homogenously enhancing mural nodule in right inferior frontal gyrus with effacement of ipsilateral frontal horns and midline shift of approximately 5 mm to left side with no perilesional edema

Radiological Impression

- **Differential Diagnosis**

?

Surgery

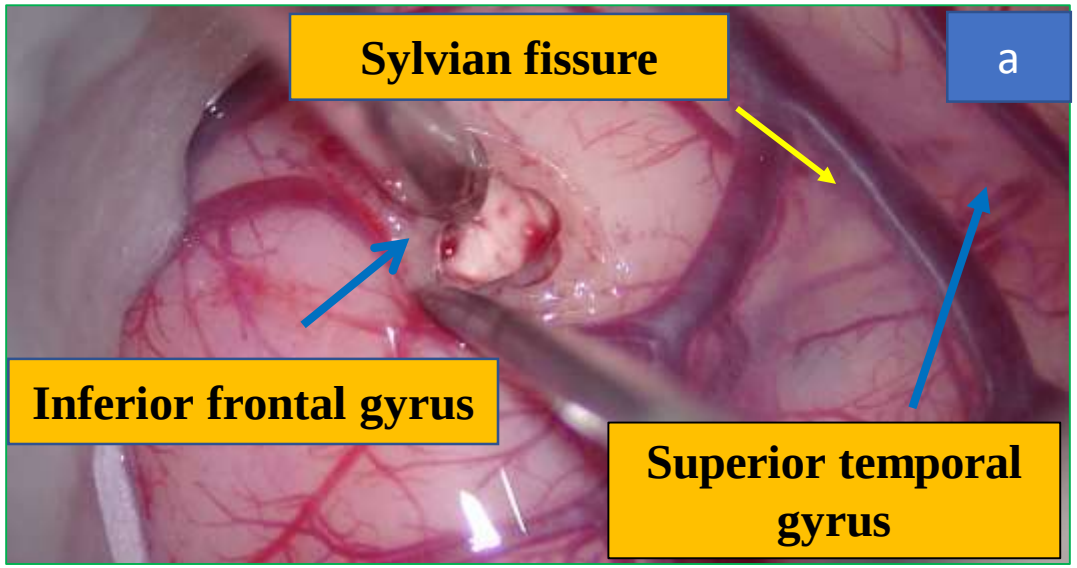
- **Position –** Supine position
- **Incision –** Linear incision given 1cm in front of right pinna, extending from tip of pinna to just above the superior temporal line
- **Procedure –** Right frontotemporal craniotomy and gross total tumor excision

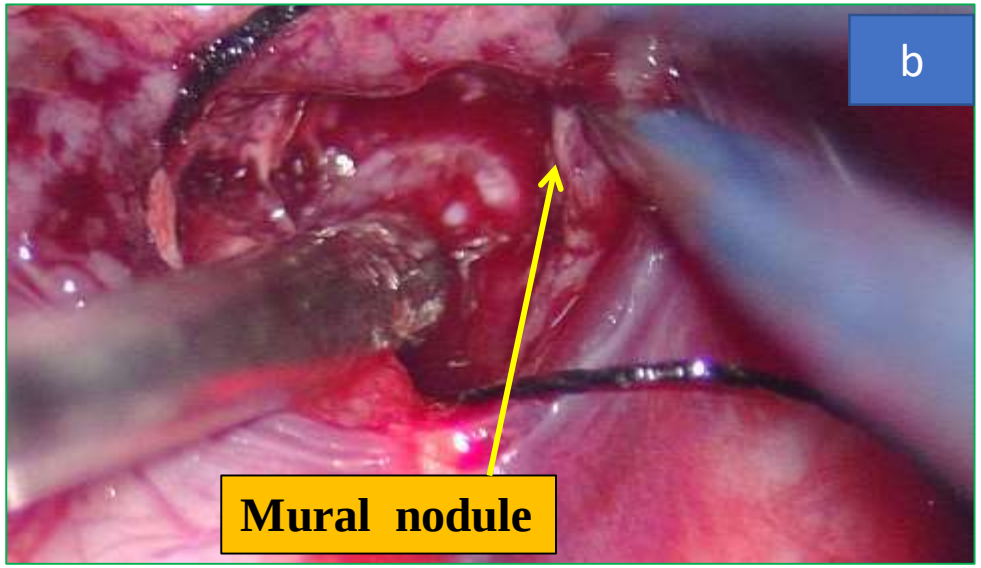
Intra operative Images

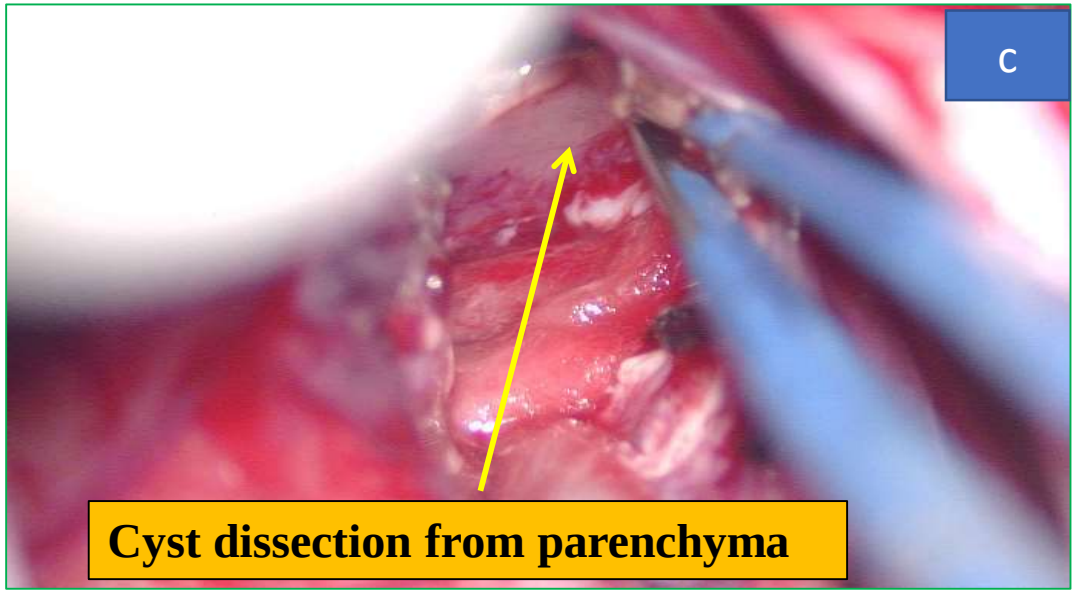
Patient positioning

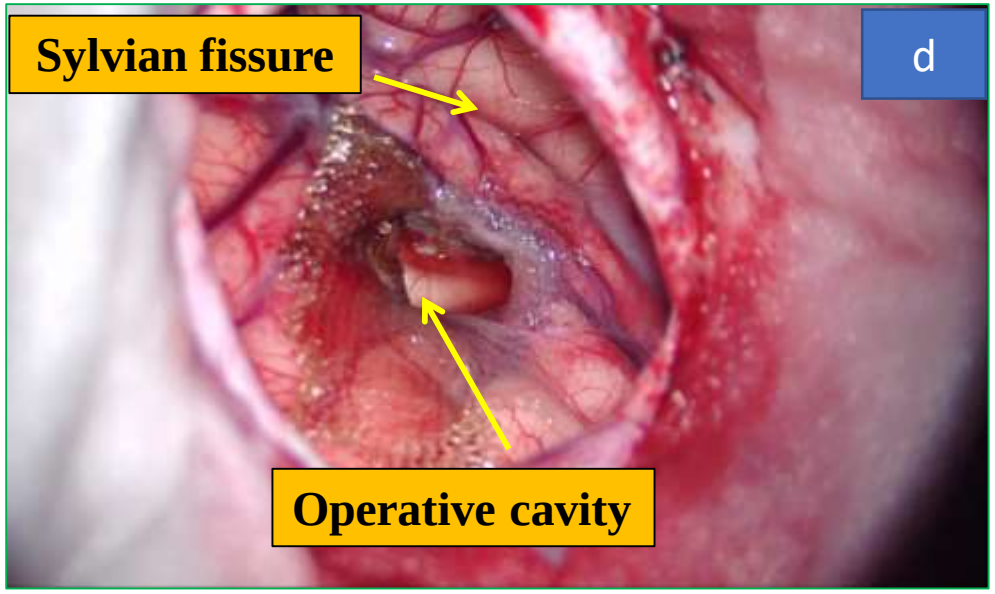
Incision

Operative Steps









Post-operative status

- Post-operative course was uneventful
- Wound healthy
- No episode of seizure after surgery

- **HPE Report:** Pilocytic Astrocytoma

Case Summary

- A fifteen years-old boy presented with chief complaints of focal aware seizures with secondary generalization for two months associated with right frontal headache for same duration with b/l V/A – 6/9 with right sided Friesen grade 4 papilledema
- Radiological work up was suggestive of right frontotemporal solid-cystic lesion with an enhancing mural nodule
- Right frontotemporal craniotomy and gross total tumor excision was done with uneventful post-operative course hospital stay

Relevant Literature

- Pilocytic astrocytoma is WHO grade 1 tumor
- Well-circumscribed, solid-cystic, slowly growing tumor, with an enhancing mural nodule
- Derived from neuroepithelial tissue
- Most common site– Cerebellum
- Supratentorial locations– optic nerve, hypothalamus, cerebral hemispheres
- Gross total resection is the treatment of choice

- Degree of resection is affected by the location of the tumor
- Tumors in eloquent and deeper areas of the brain such as the brainstem, diencephalon, insula, optic nerve and hypothalamus are difficult to resect completely compared with tumors in the cerebellum or the cerebral convexity
- Gross total resection was associated with greater than 95% 10-year survival in paediatric population
- In paediatric patients, these tumors are regarded to have an excellent prognosis

Suggested Readings

- Niculescu CE, Stănescu L, Popescu M, Niculescu D. Supratentorial pilocytic astrocytoma in children. Rom J Morphol Embryol. 2010;51:577-80.
- Muhsen BA, Aljariri AI, Elayyan M, Hirbawi H, Masri MA. Insight about the characteristics and surgical resectability of adult pilocytic astrocytoma: tertiary center experience. CNS Oncol. 2022;11:81.
- Raheja A, Singh PK, Nambirajan A, Sharma MC, Sharma BS. Diffuse leptomeningeal spread of supratentorial recurrent pilocytic astrocytoma in a child. J Pediatr Neurosci. 2015;10:408-11.