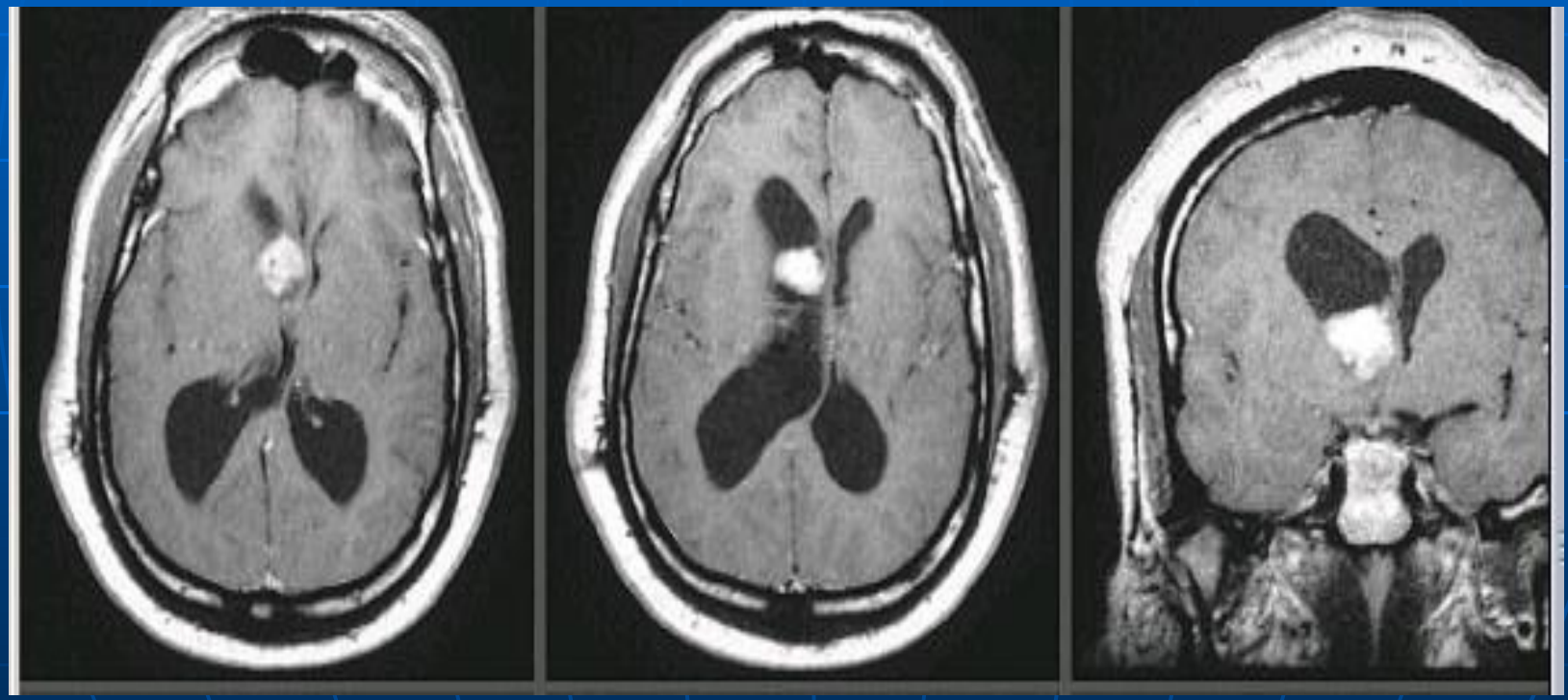
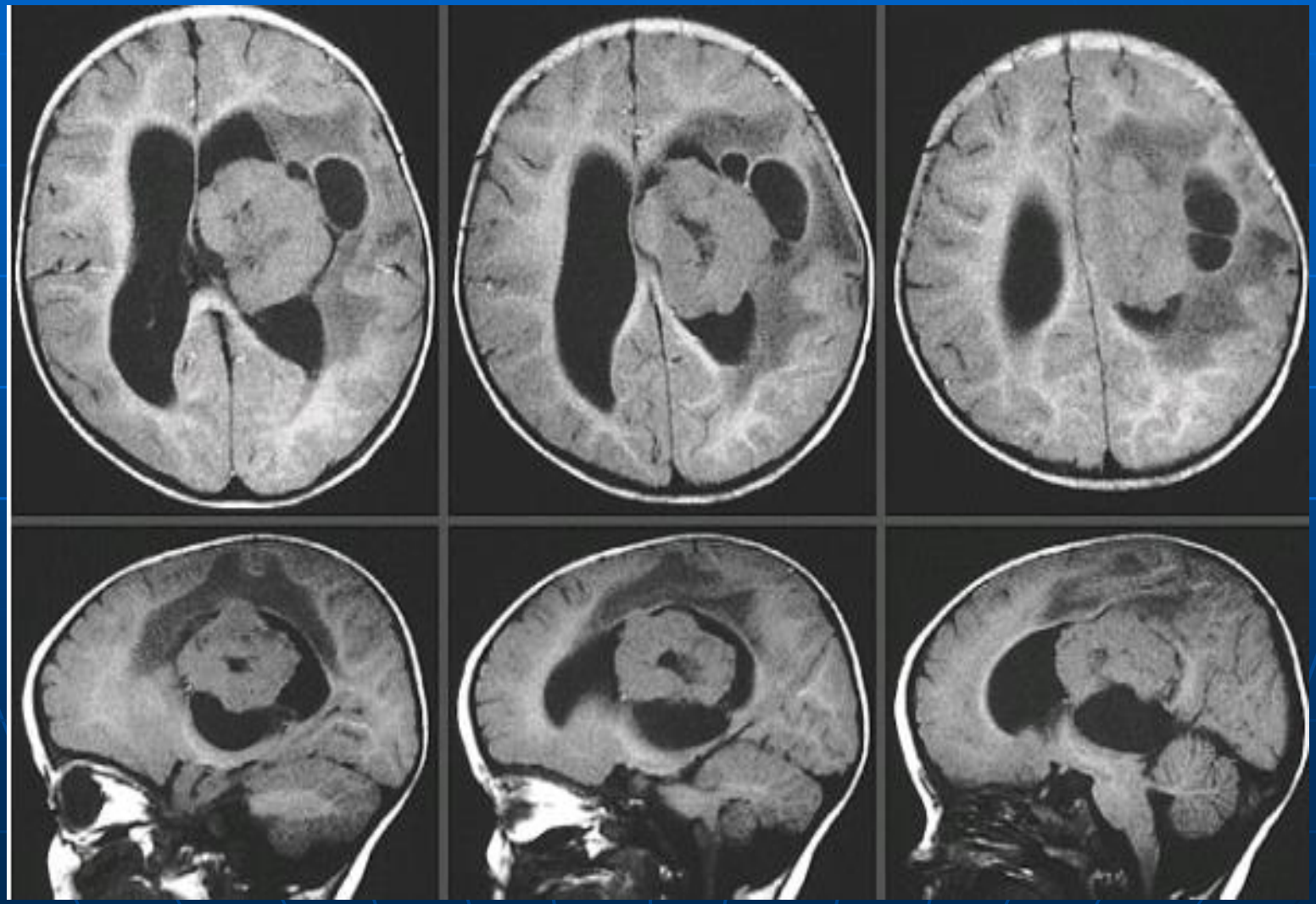
Differential Diagnosis: supratentorial hemispheric neoplasms

- Juvenile pilocystic astrocytoma
- Pleomorphic xanthoastrocytoma
- Supratentorial Primitive Neuroectodermal Tumor (PNET)
- Dysembryoplastic Neuroepithelial Tumor (DNET)
- Desmoplastic infantile ganglioglioma
- gangliogliom

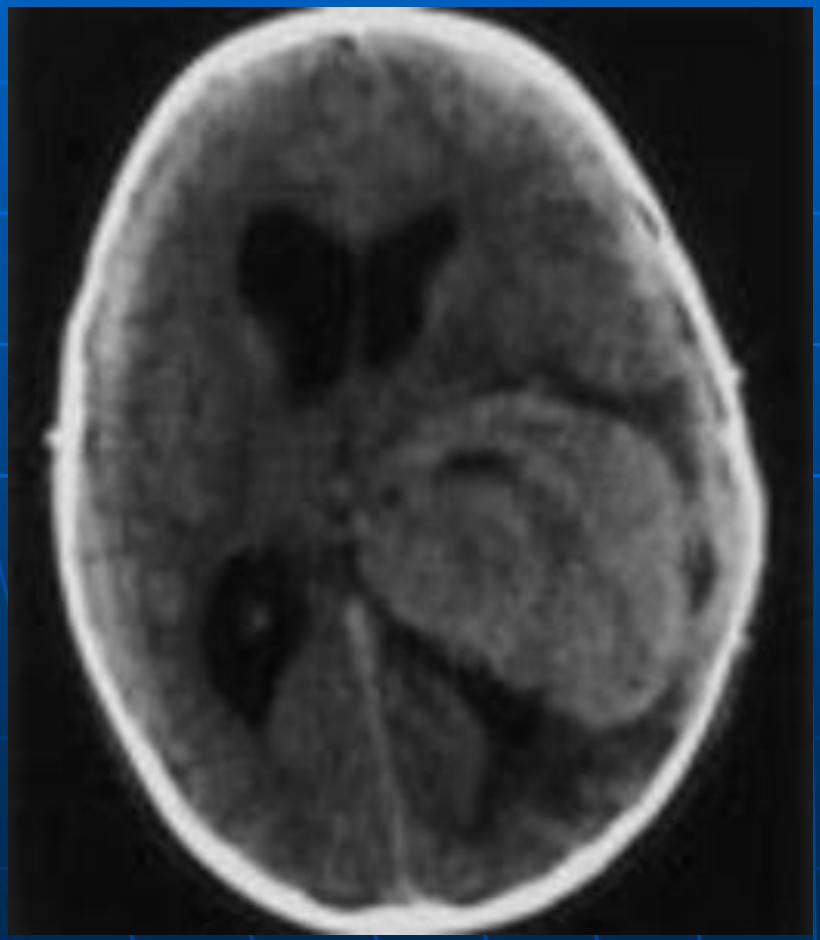
Giant Cell Astrocytoma

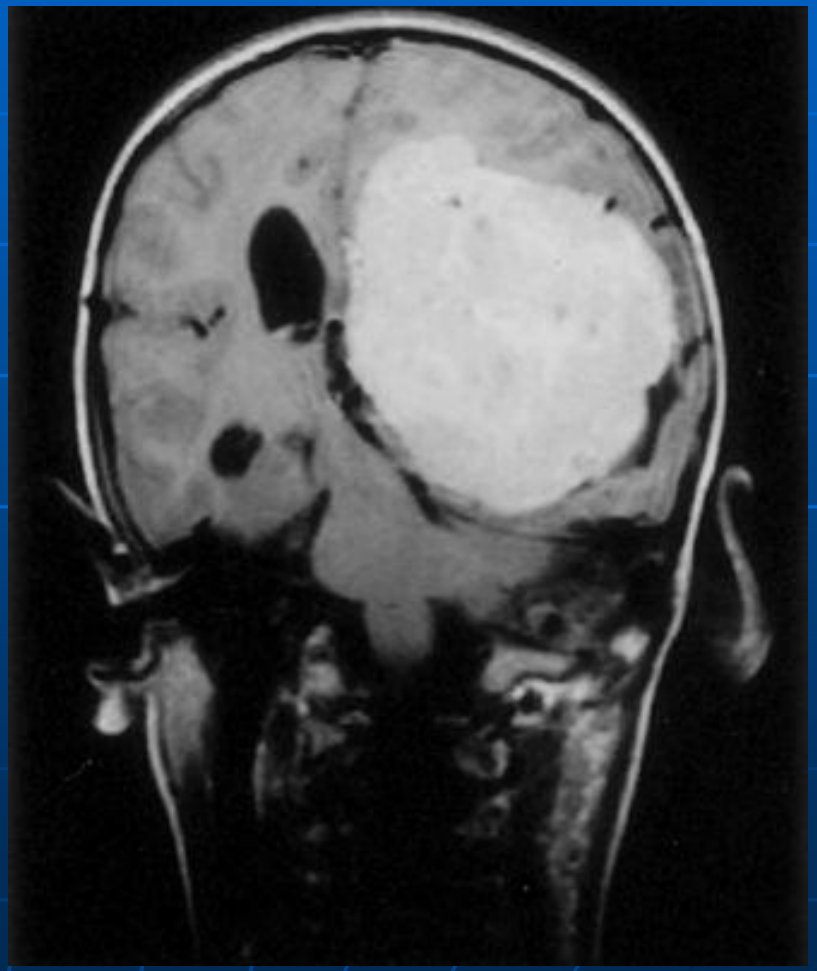


Choroid plexus papilloma



Choroid plexus papilloma





Choroid plexus carcinoma

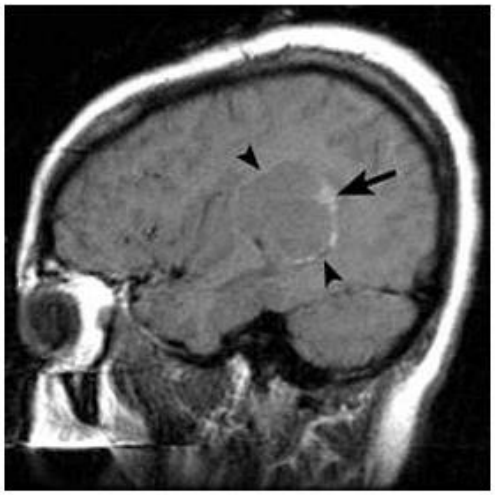


Figure 1: Sagittal T1 MR image shows a heterogeneous, isointense mass (arrowheads) with points of hyperintensities (arrow) indicating hemorrhage.

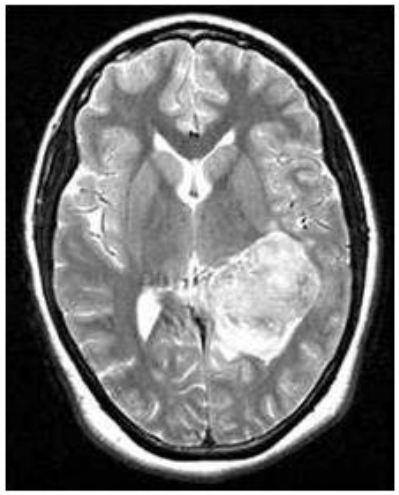
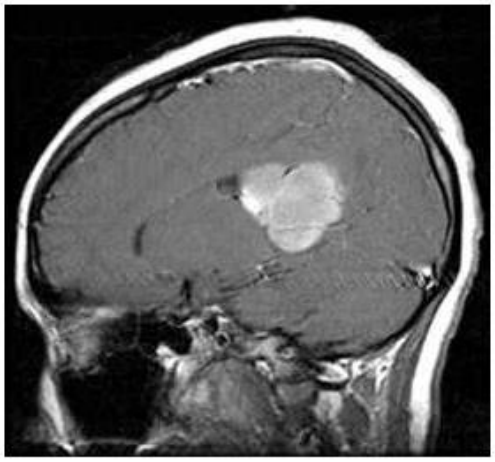
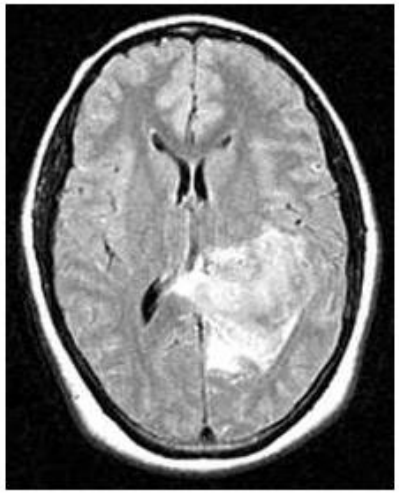


Figure 2: Axial T2 MR image shows a heterogeneous, isointense mass in the atrium of left lateral ventricle.

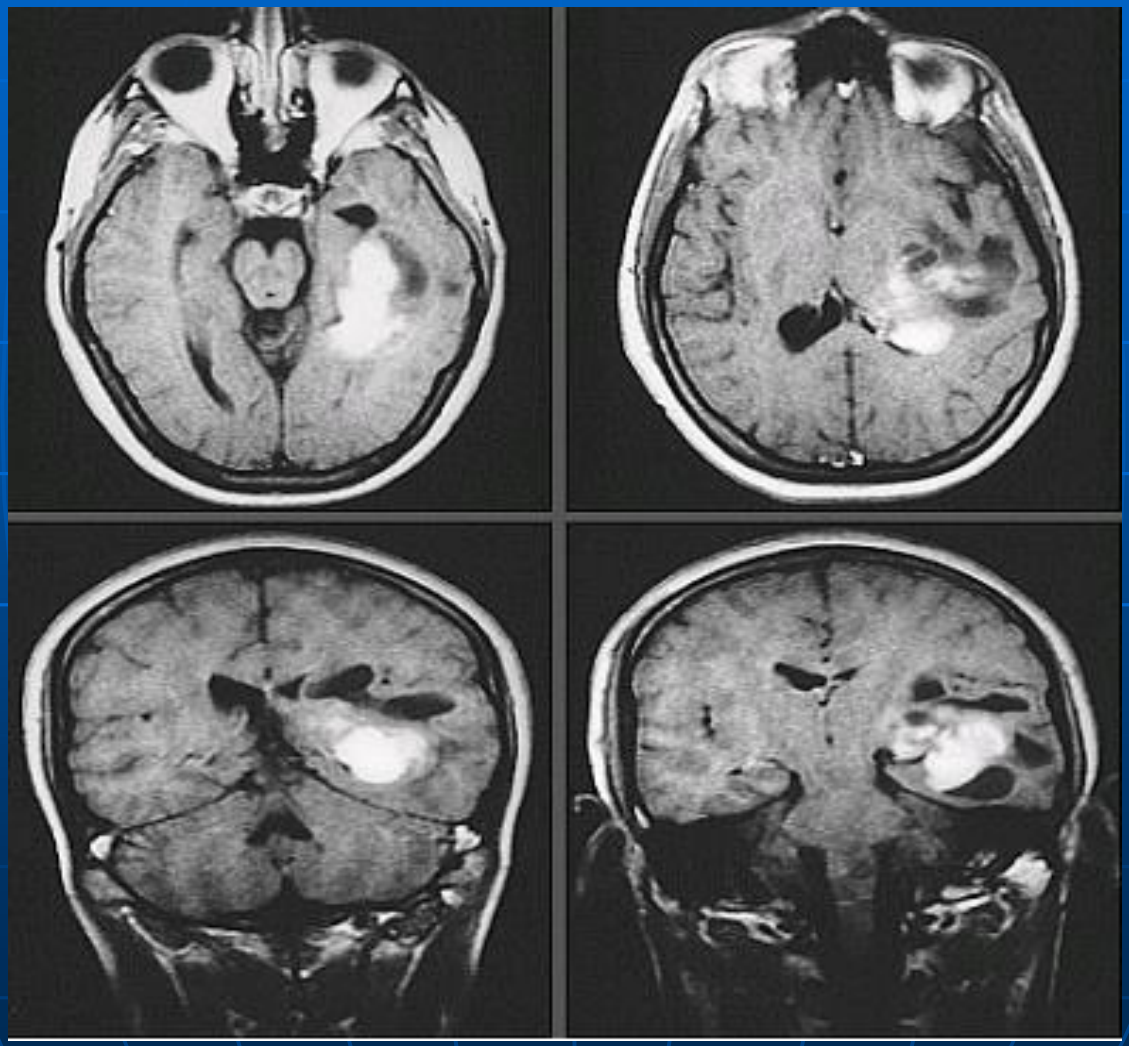




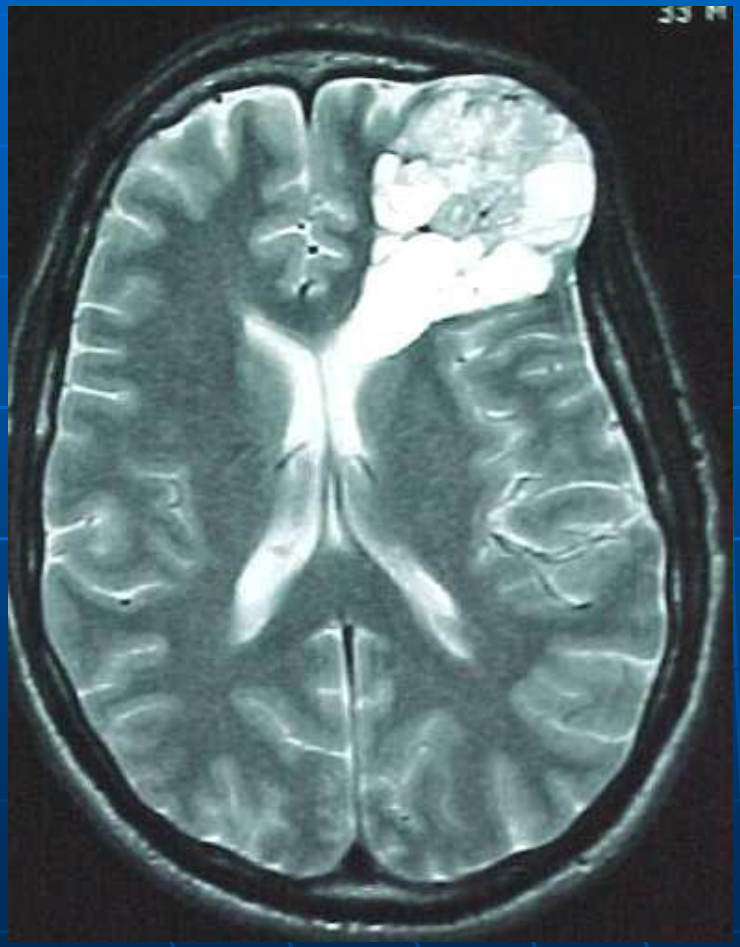
Choroid plexus papilloma/carcinoma

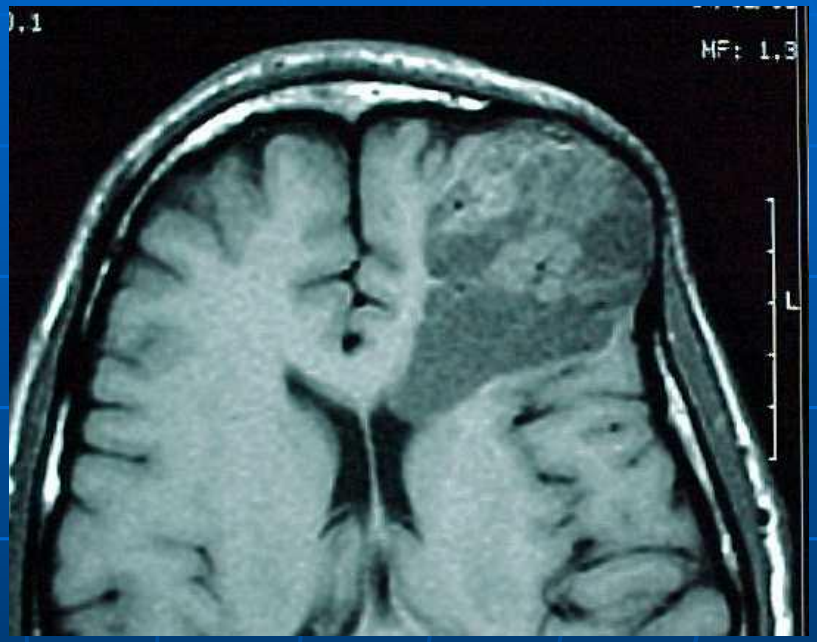
- Peak Age 5 years
- 90% **papilloma**, cannot differentiate from cancer.
- Trigone in kids most common
- 4th ventricle and CPA in adults
- May get drop mets.
- 25 % calcify
- May cause Hydrocephalus

Ganglioglioma , T1 Post contrast

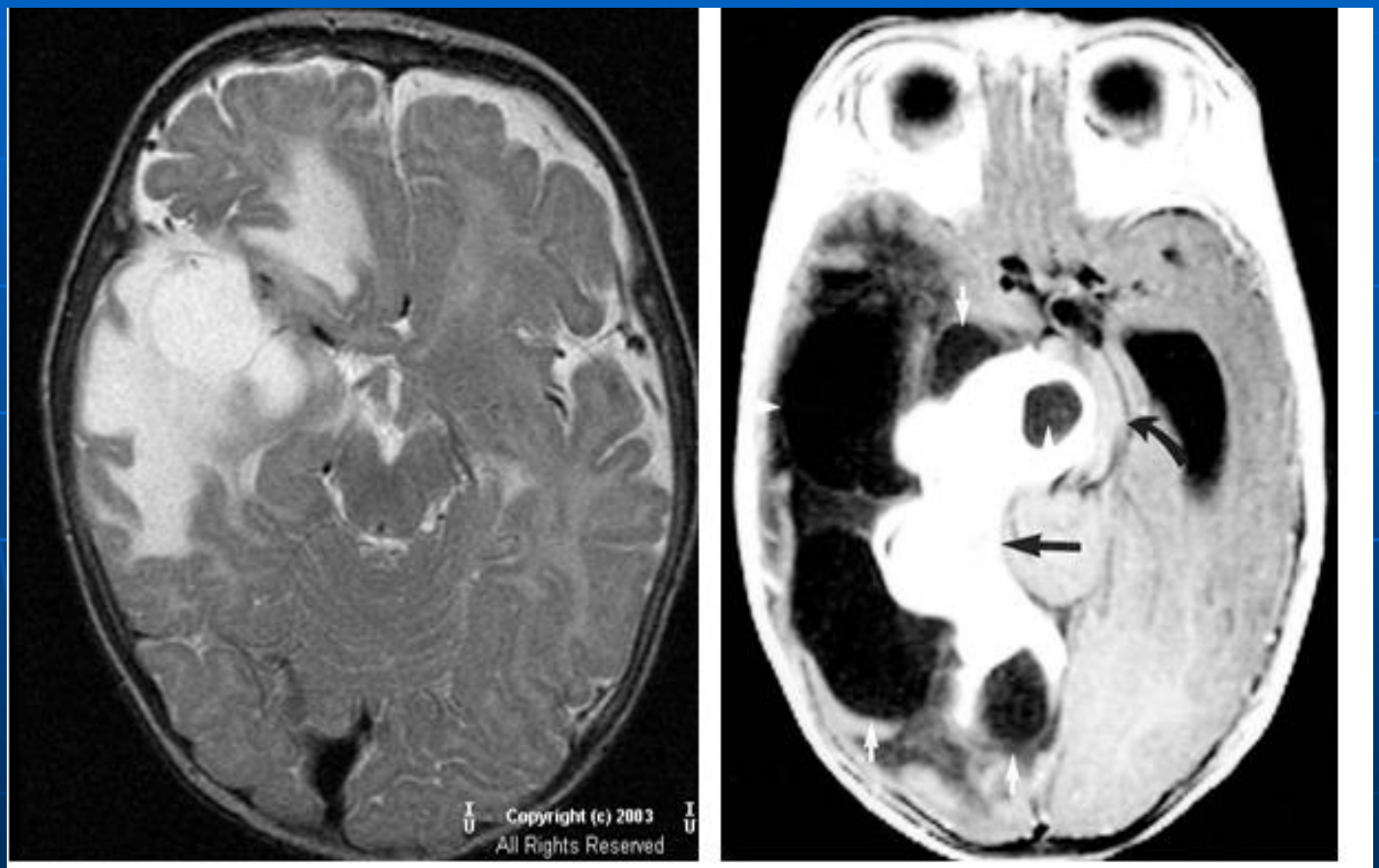


Cerebral ganglioglioma





Desmoplastic Infantile Ganglioglioma

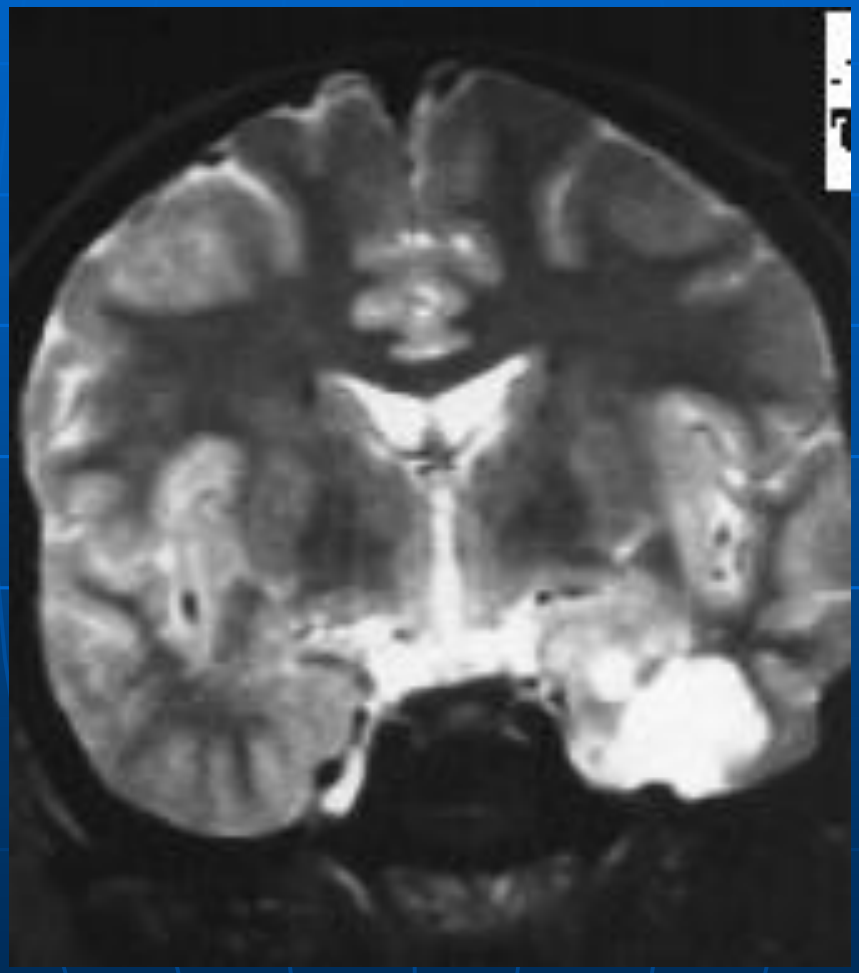


Different Patients

Desmoplastic Infantile Ganglioglioma

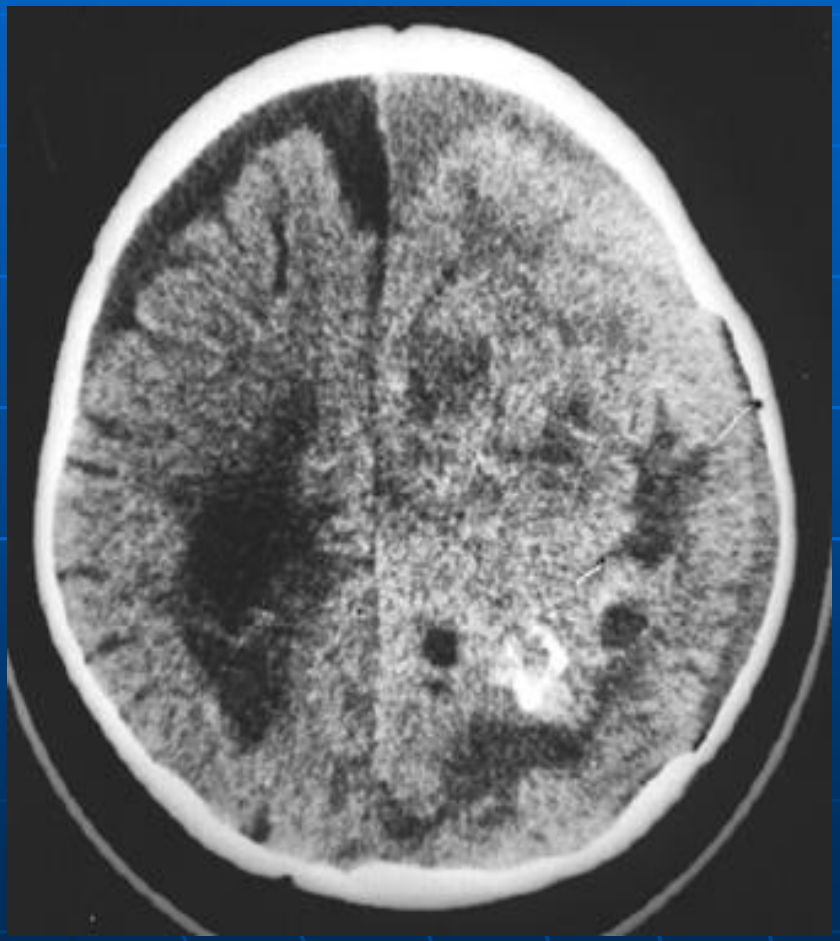
- Despite their aggressive appearances tend to have good prognosis.
- Surgical resection is the treatment of choice; however, because of the large size of these lesions and the firm attachment to the dura, complete resection is difficult.
- In cases of partial resection, adjunctive chemotherapy may be considered and have been reported to produced some reduction in tumour volume

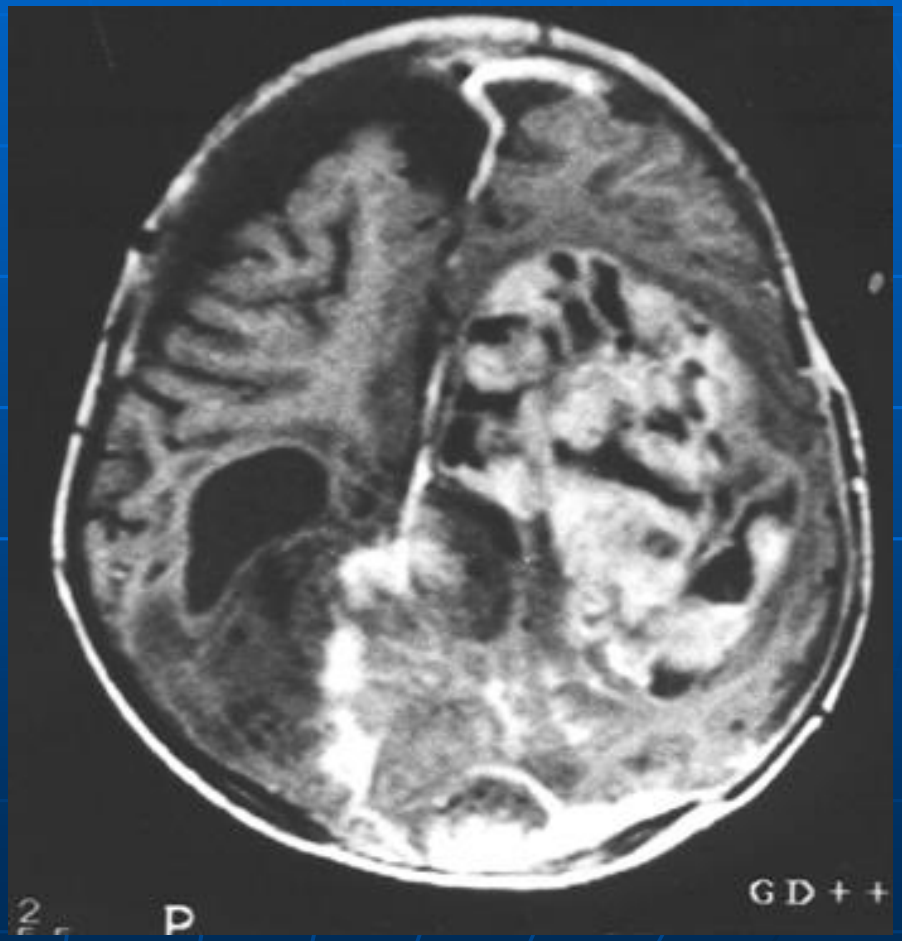
Dysembryoplastic Neuroepithelial Tumor (DNET)



DDX: ganglioglioma and low-grade astrocytoma

Primary Cranial Neuroblastoma

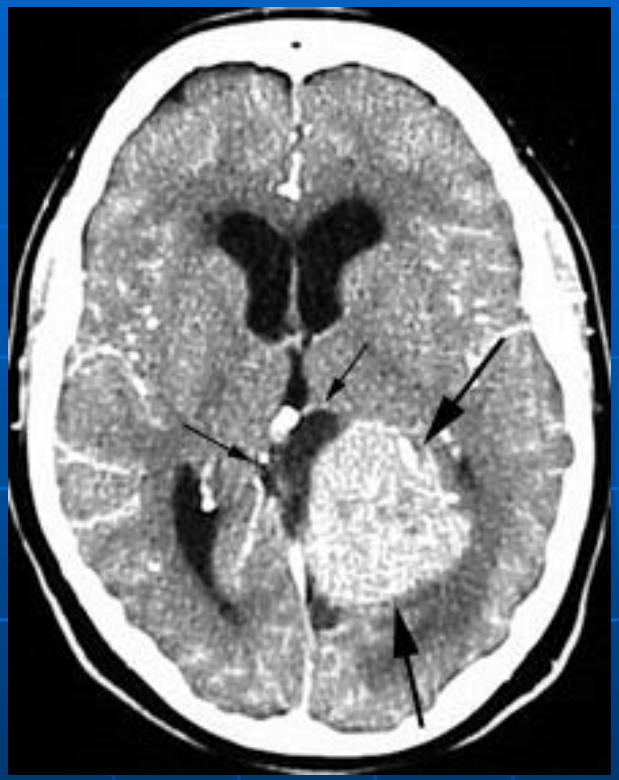


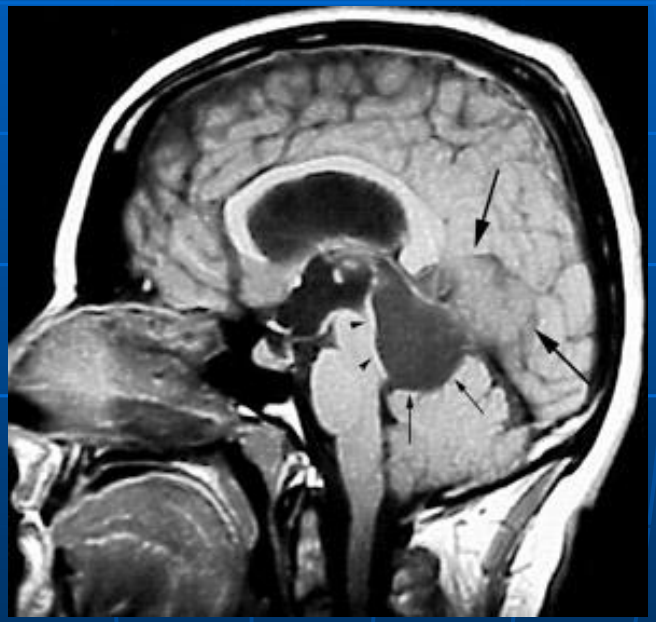


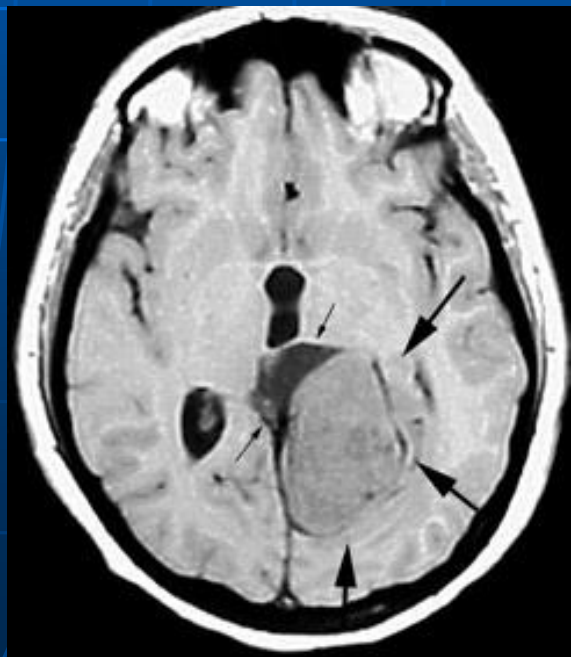
Primary Cranial Neuroblastoma (PNET)

- Primary cranial neuroblastoma is generally considered to be a specific subset of primitive neuroectodermal tumors (PNET)
- It is characterized by large intraparenchymal supratentorial mass frequently containing cyst and calcification and spontaneous hemorrhage

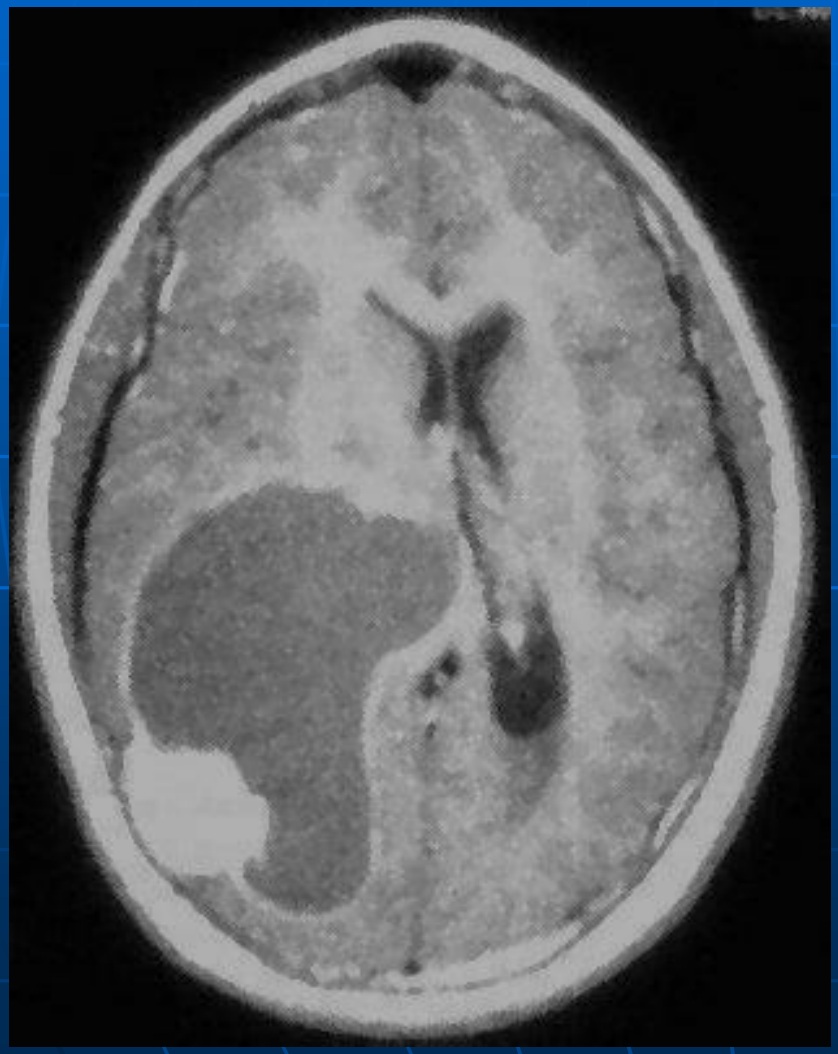
Pleomorphic xanthoastrocytoma

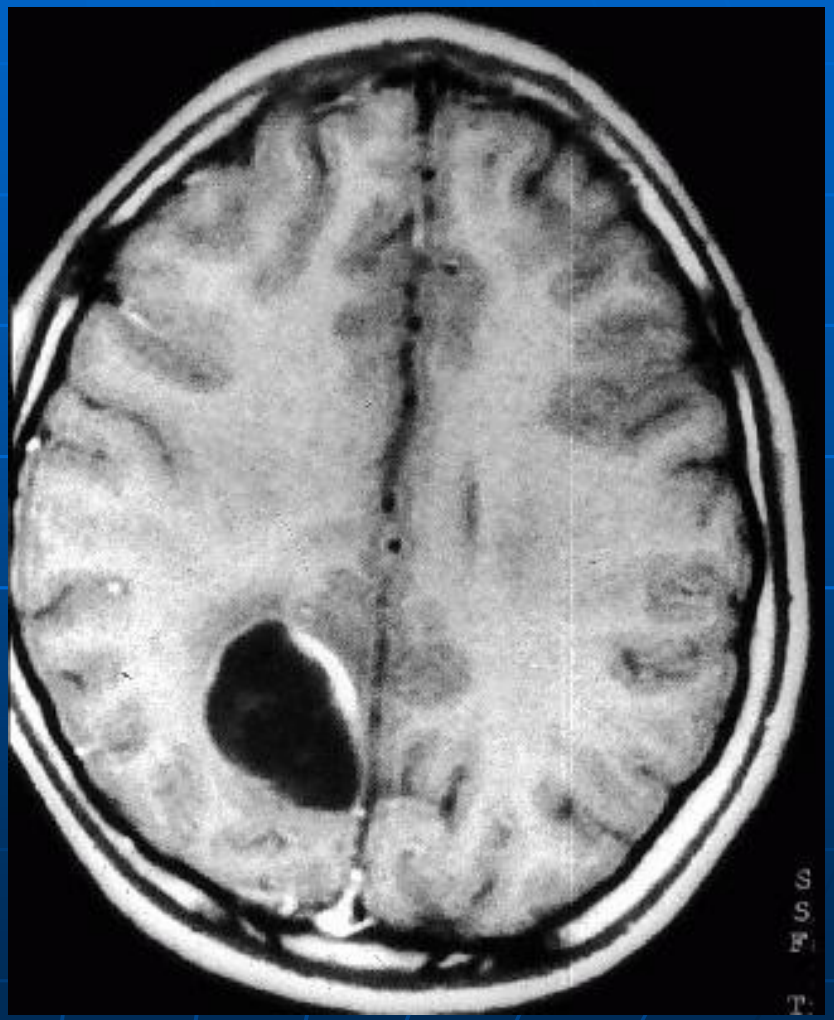






Pleomorphic xanthoastrocytoma

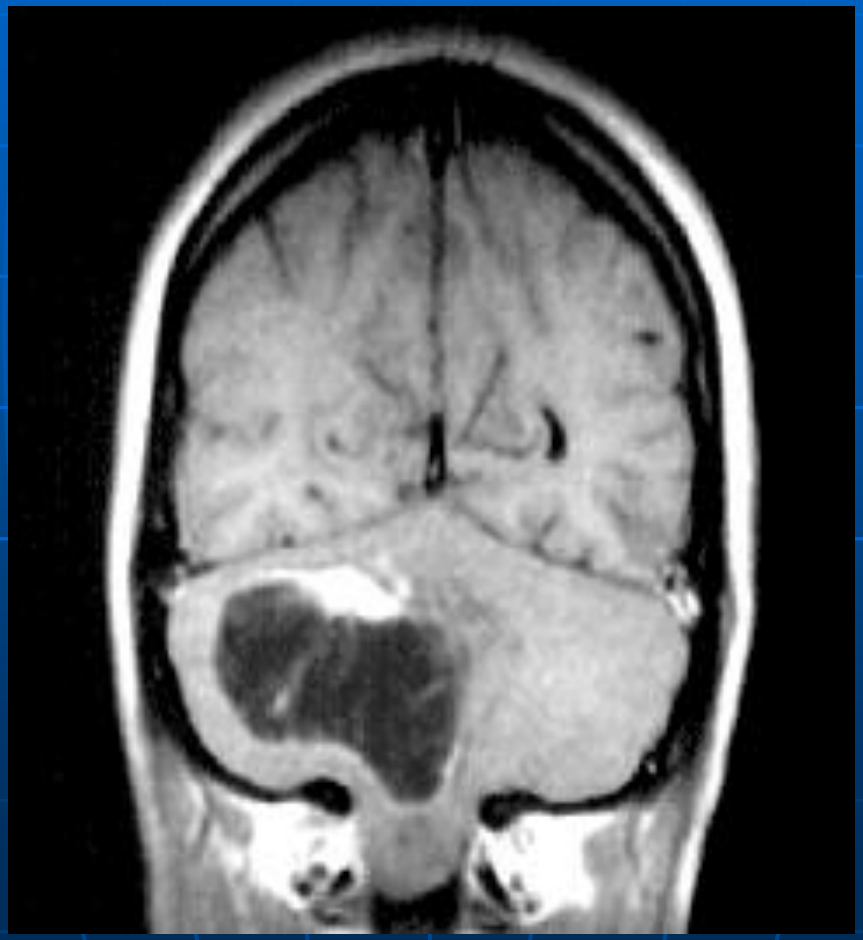




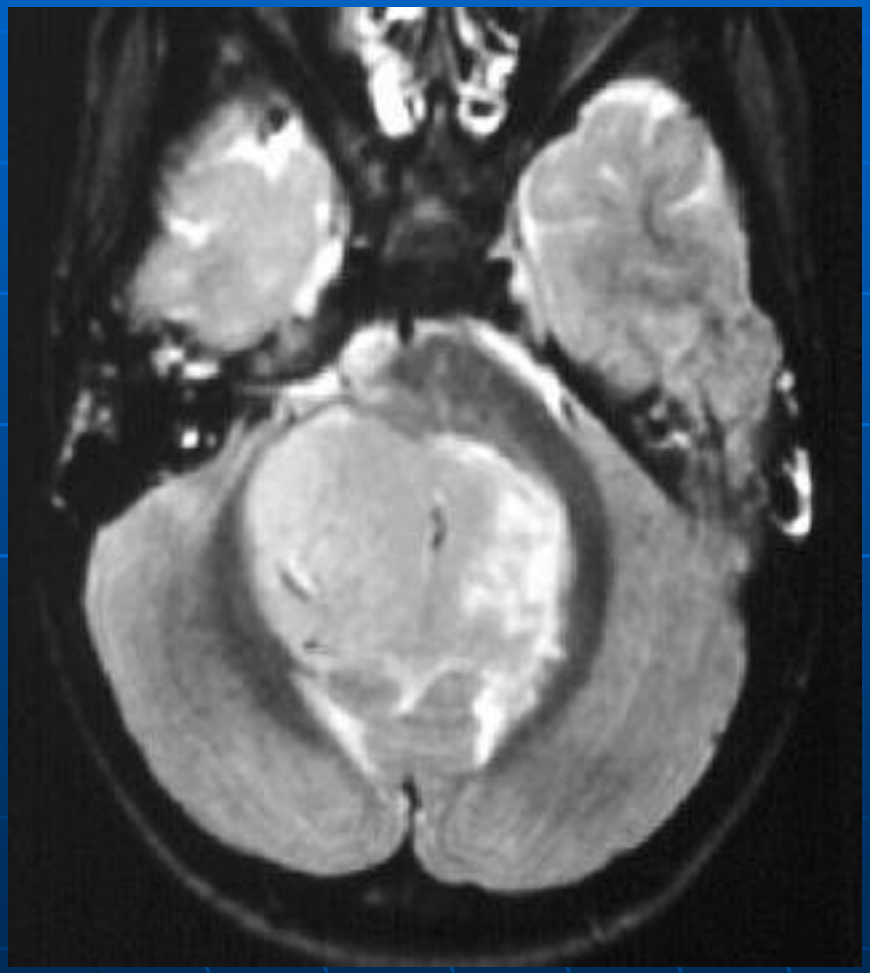
Pleomorphic xanthoastrocytoma

- Rare, usually benign tumour.
- Occurs primarily in children or young adults
- M=F
- Often located in the cerebral cortex; sometimes the leptomeningeal layers are involved
- Cystic lesion with a solid enhancing component is typical. (tumours such as ganglioglioma and pylocitic astrocytoma may appear the same)

Juvenile Pilocytic Astrocytoma



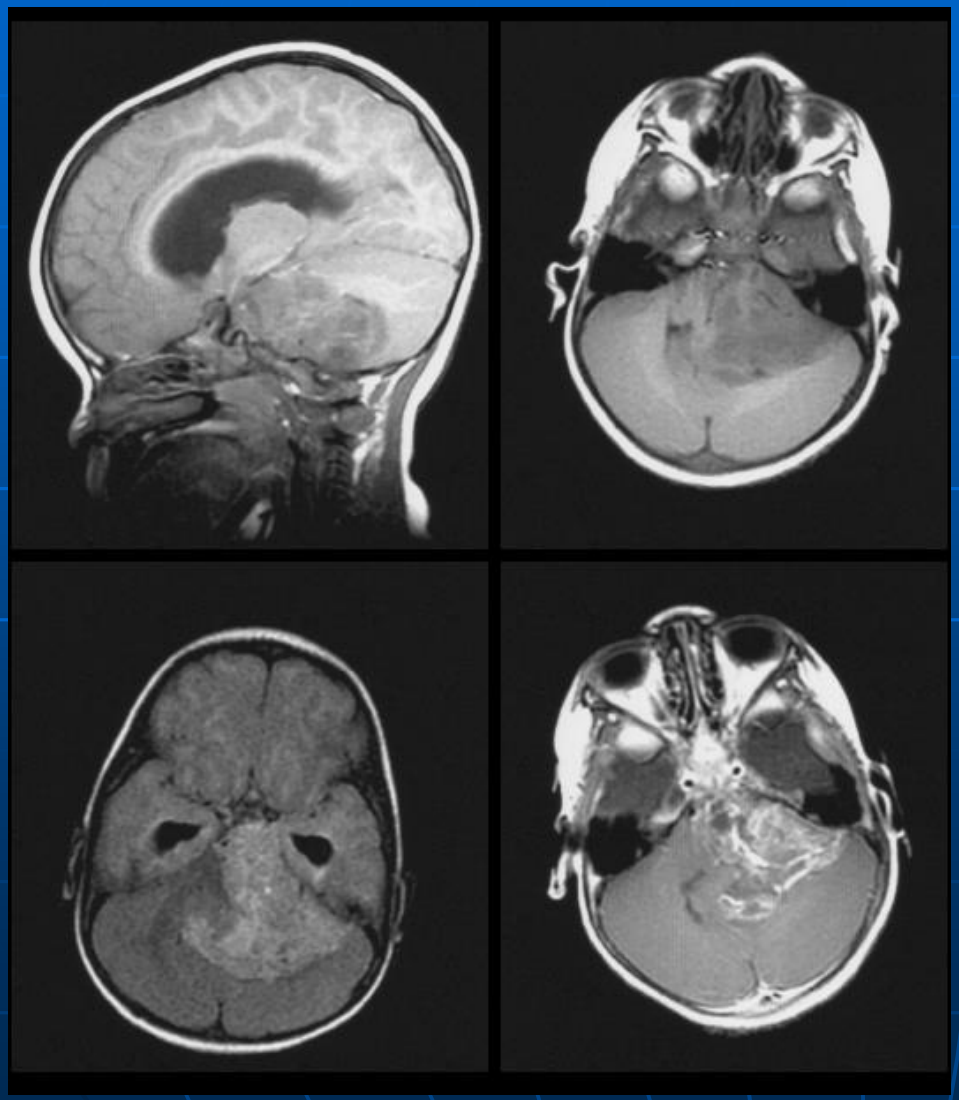
Epndymoma



In children, most intracranial ependymomas are infratentorial, where their relationship to the floor of the fourth ventricle often makes complete resection difficult.

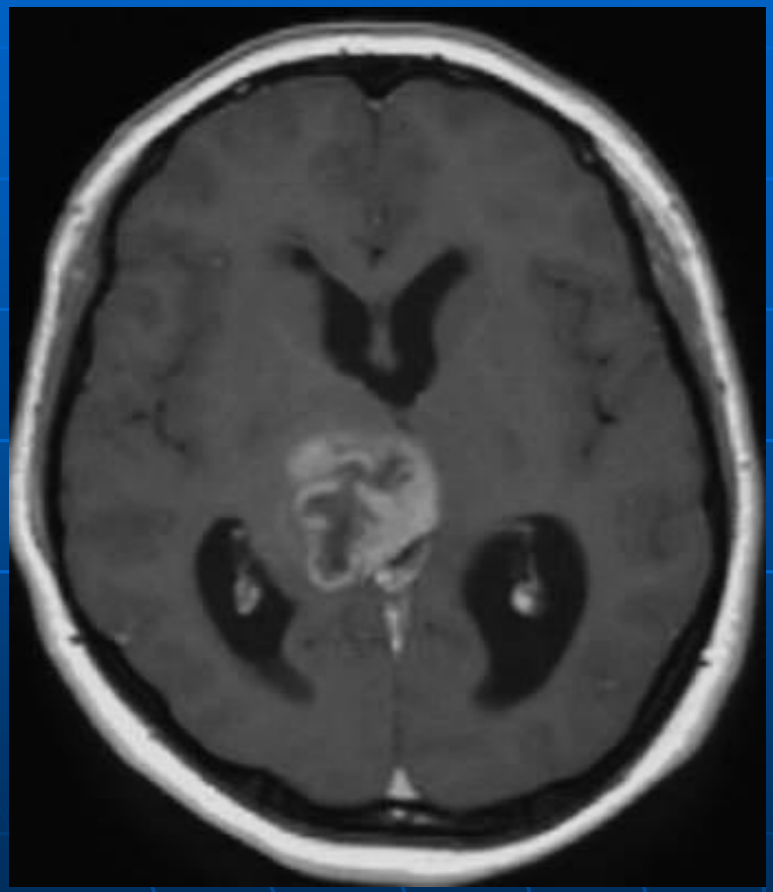
70% of supratentorial ependymomas are extraventricular in location, but they often arise close to the ventricular surface and extend into the ventricle

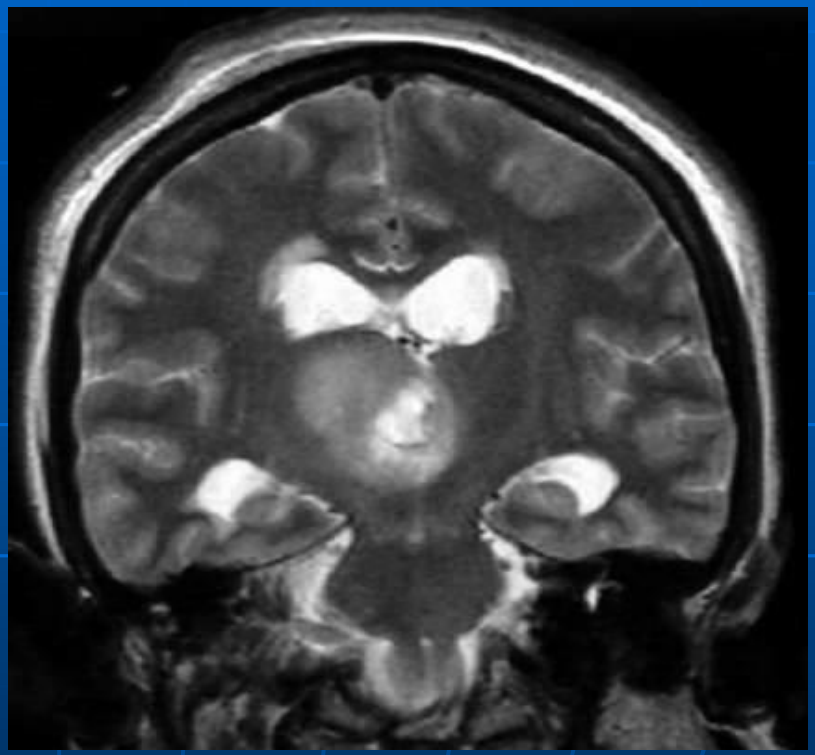
Epndymoma



DDX:
Astrocytoma
medulloblastoma

Supratentorial ependymoma

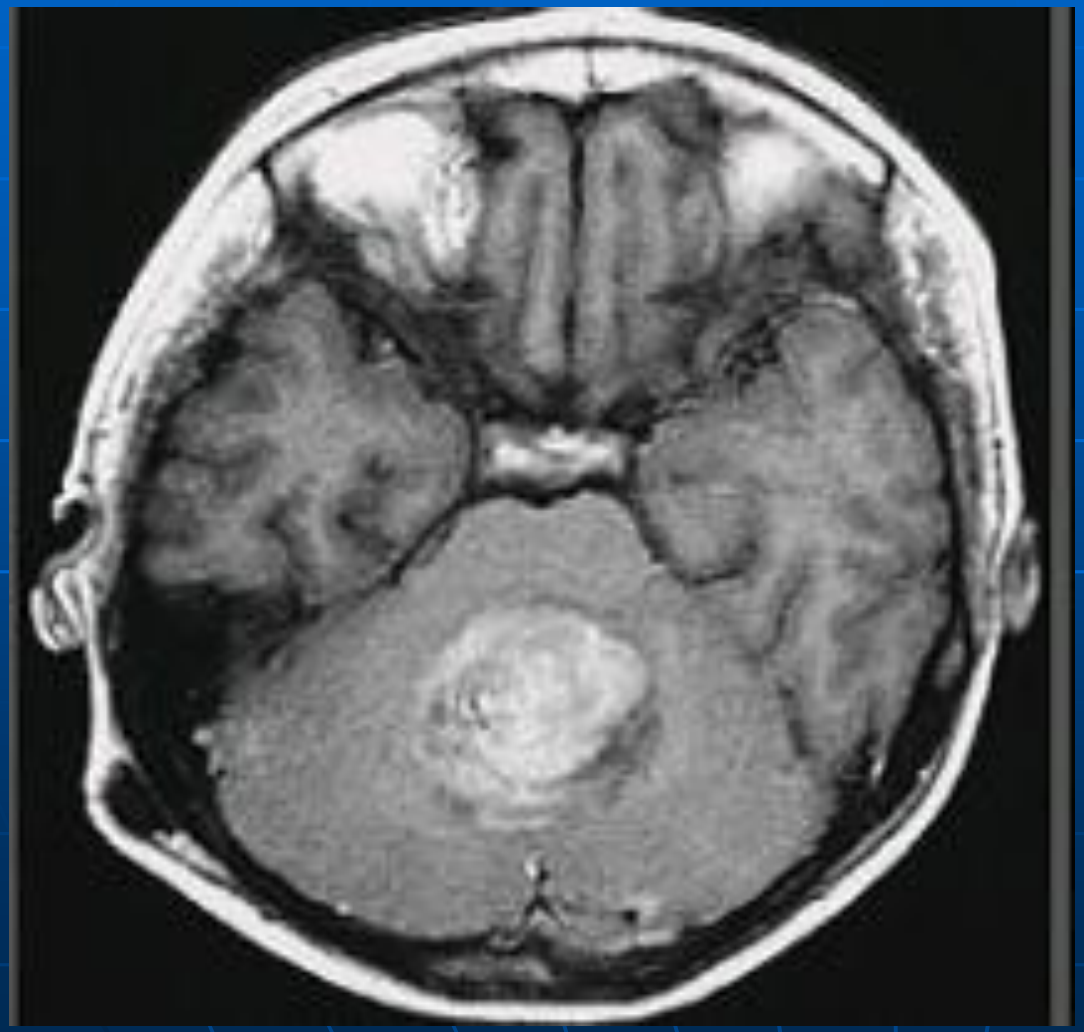




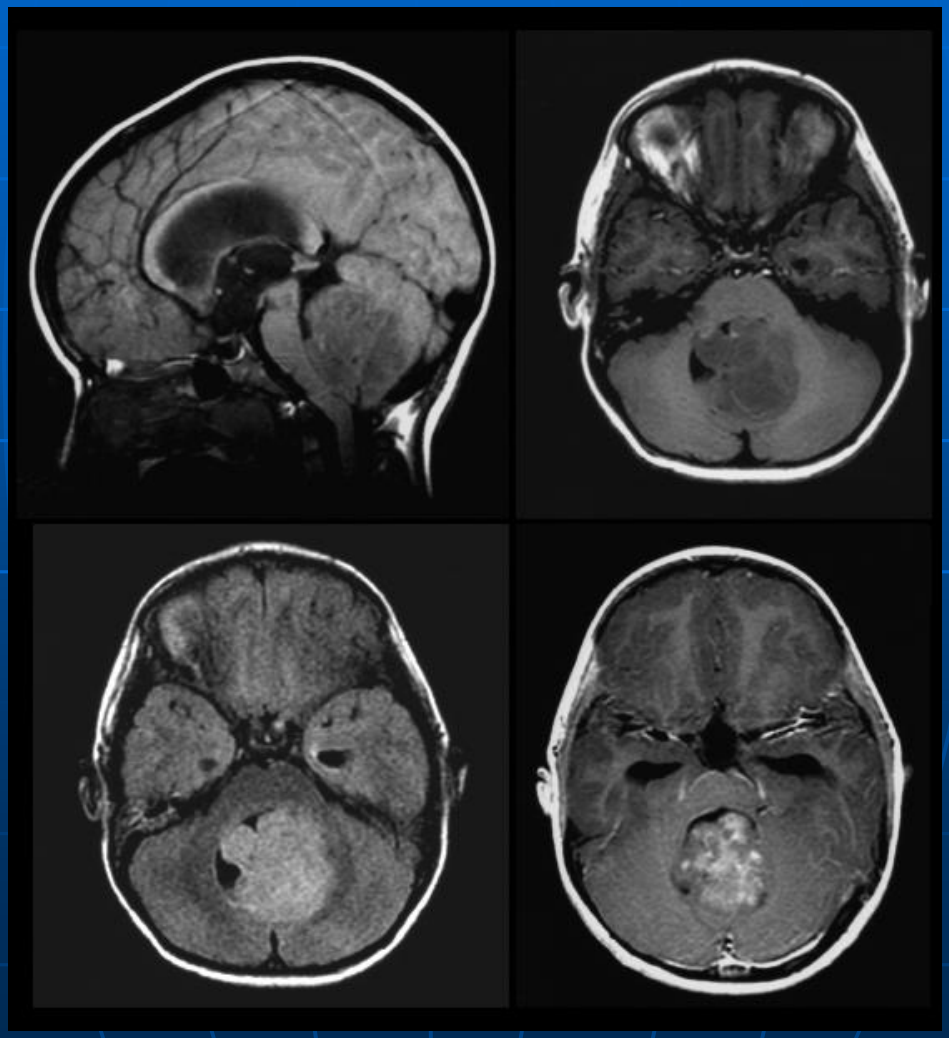
Heterogeneous mass centred in the right thalamus, exerting mass effect on the displaced and compressed third ventricle.

The necrotic focus is clearly seen

Medulloblastoma T1 post



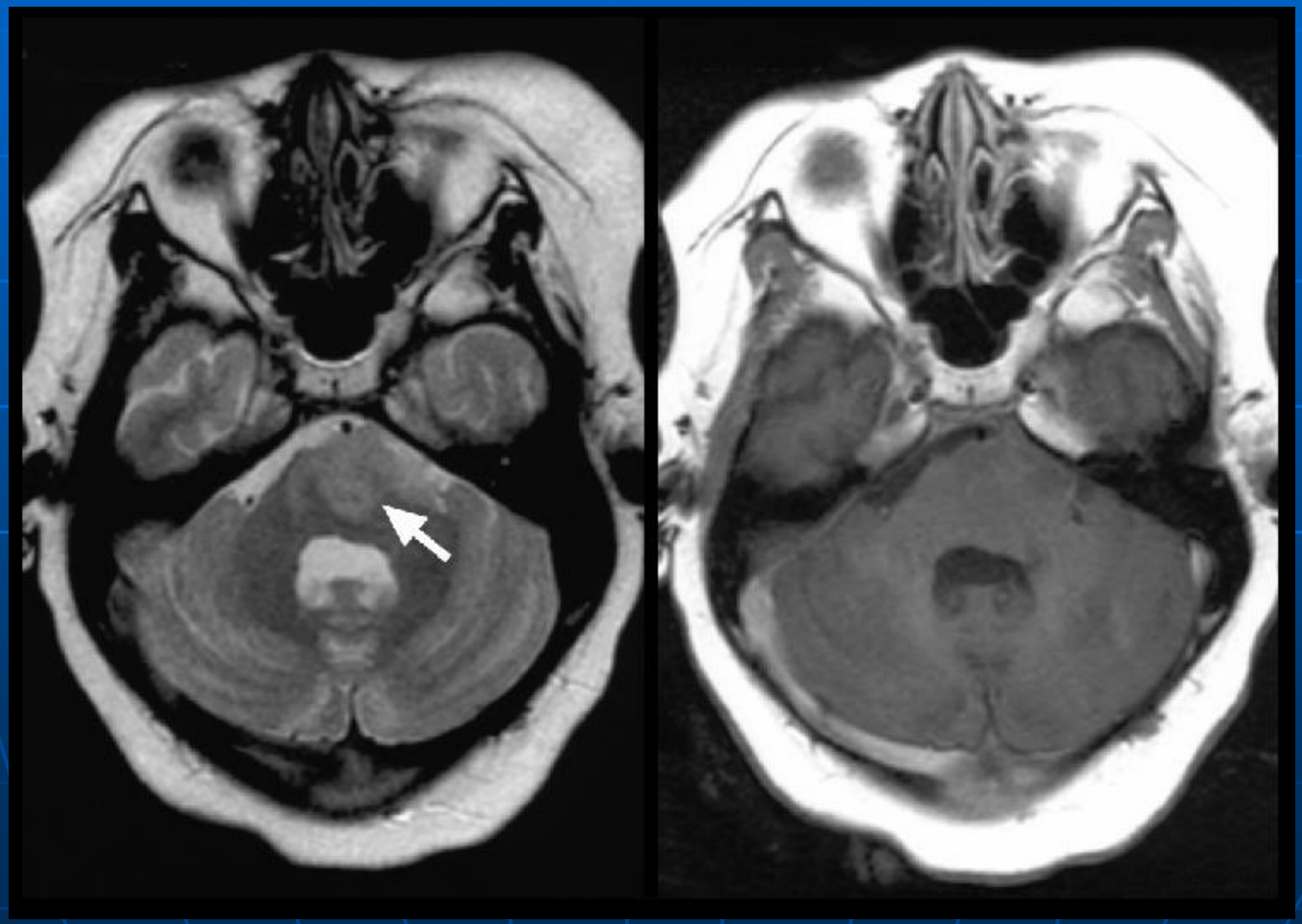
Medulloblastoma



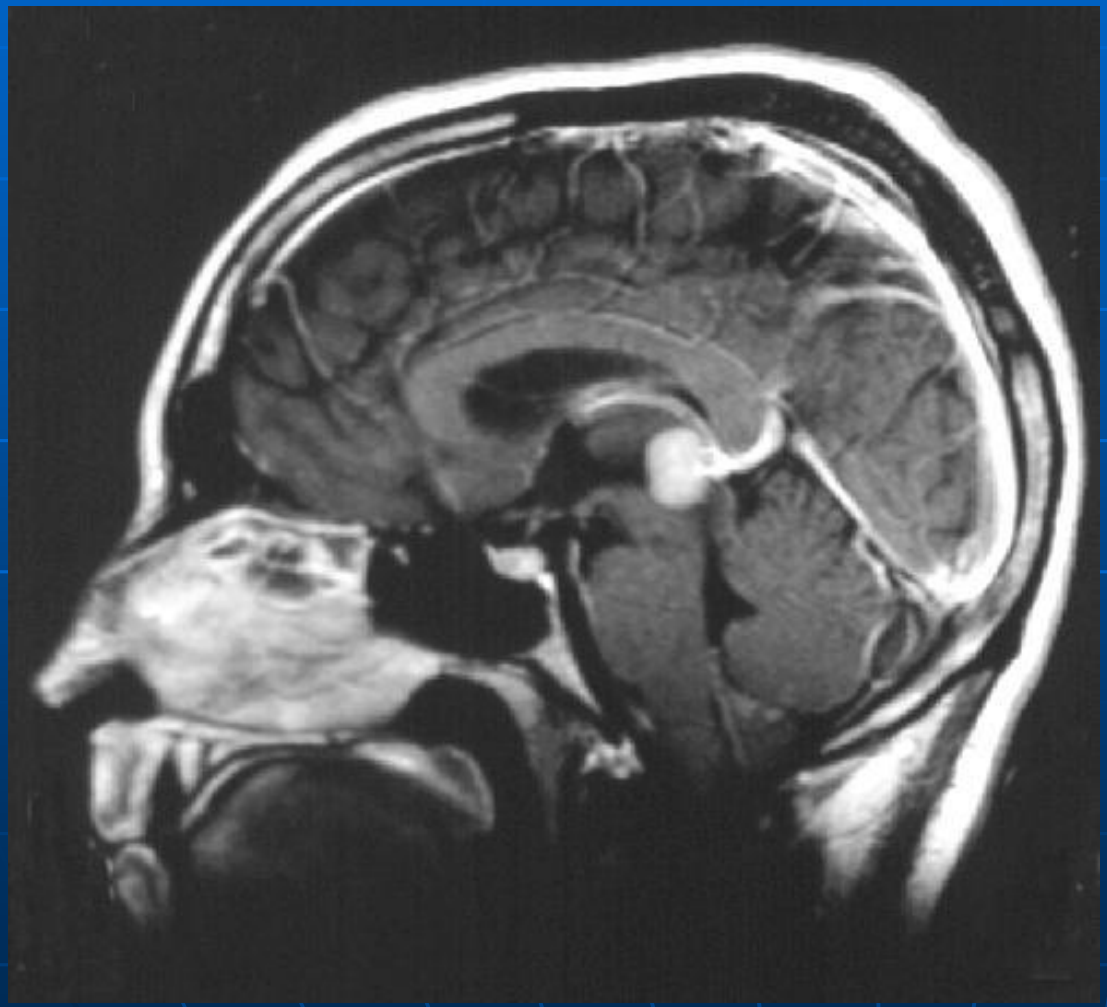
Medulloblastoma

- Associated with Gorlins and Turcot Syndrome
- Mets may appear as slcerotic lesions in bone.
- Intense enhancement
- Midline, roof of 4^{th}, may be lateral in older children

Brainstem glioma

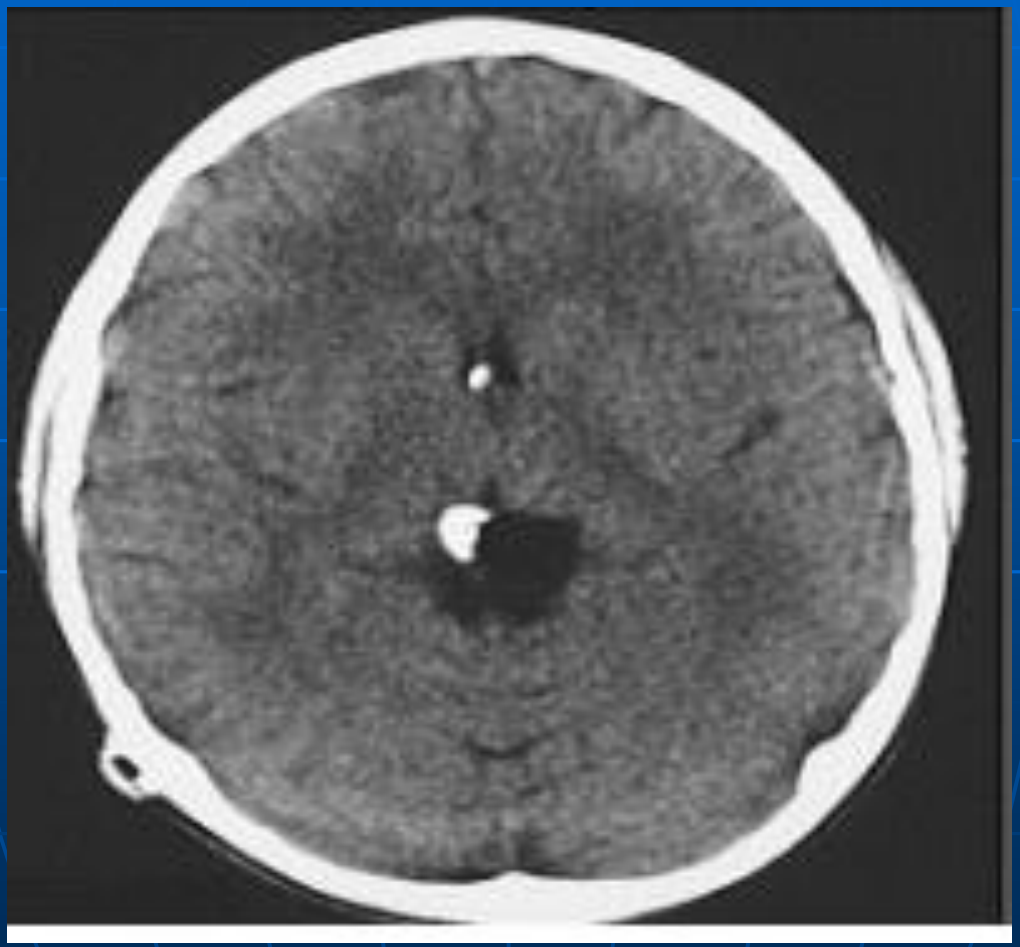


Germinoma

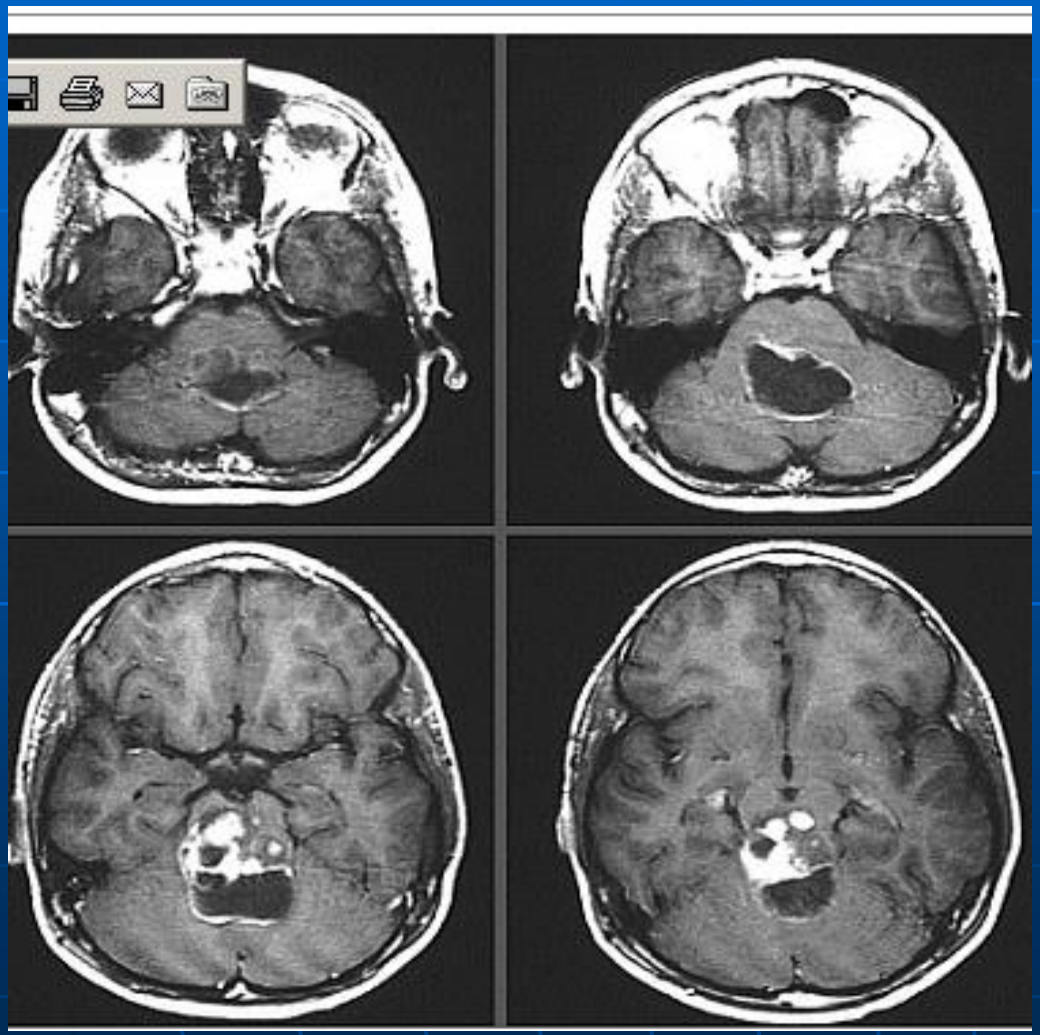


DDX:
Germ cell tumors (tertoma etc..)
Pineal parenchymal tumors
Gliomas

Pineal teratoma



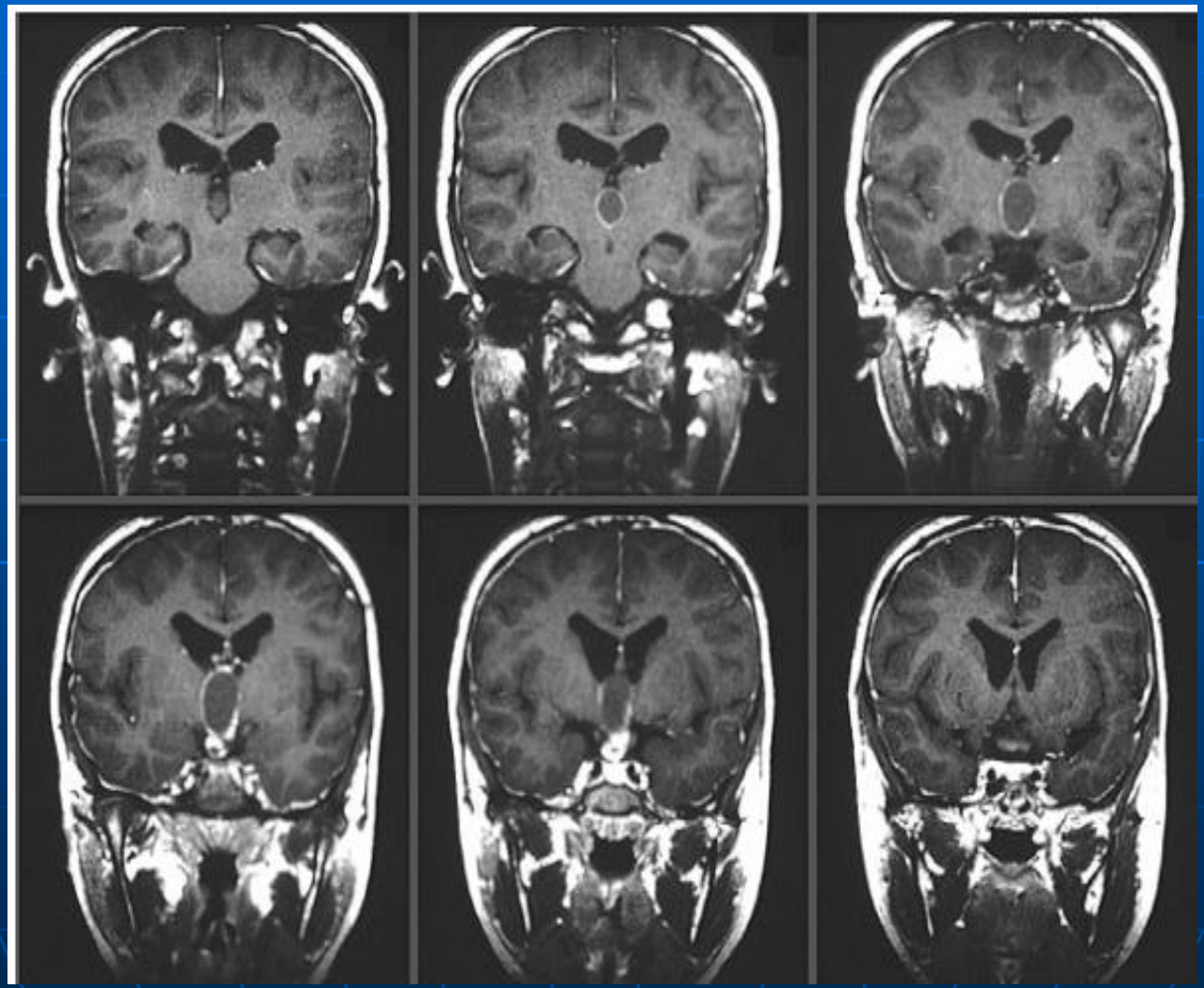
Brain Stem Glioma



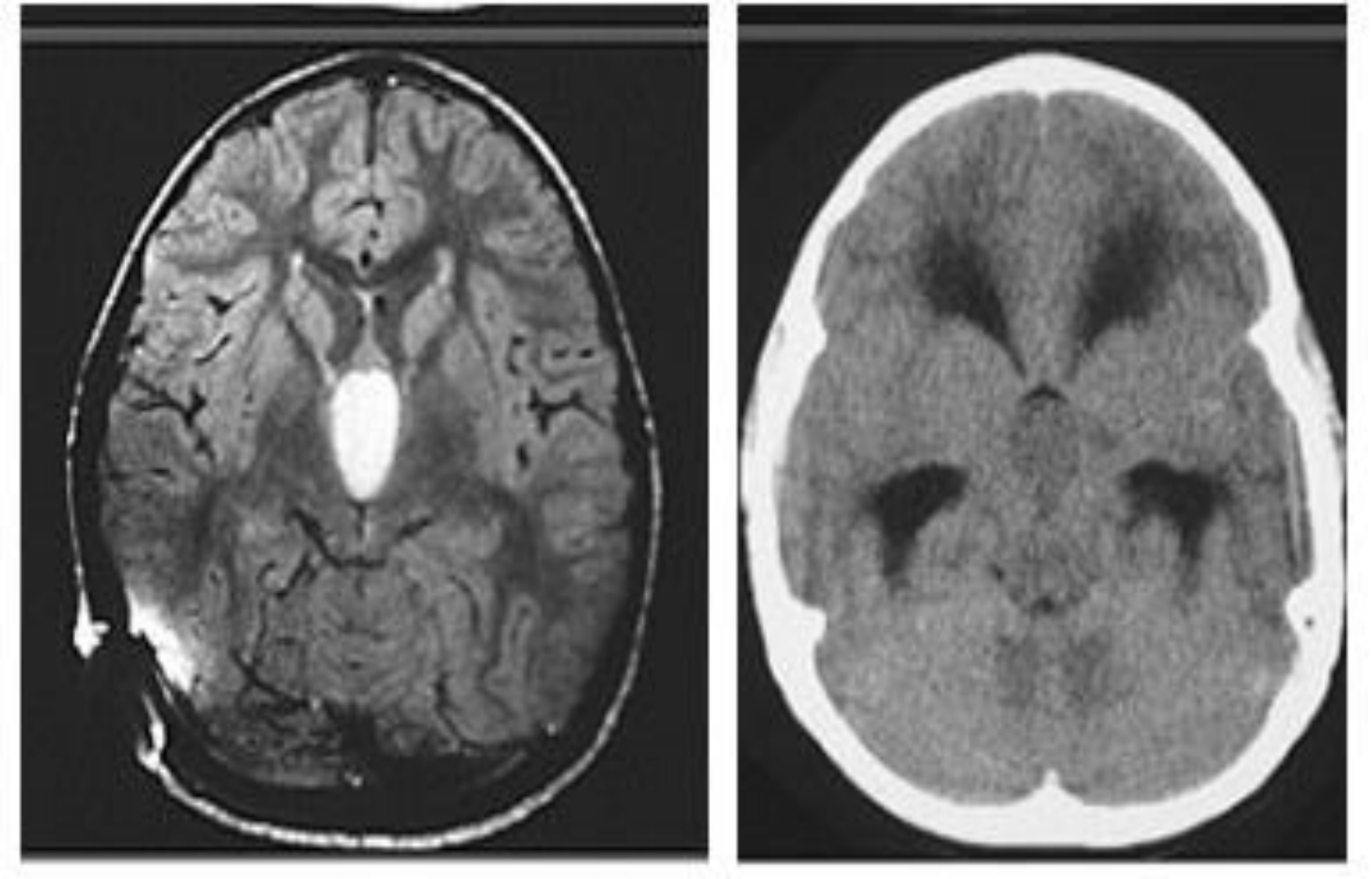
DDX: In general

Demyelinating diseases (multiple sclerosis), Encephalitis, Infarction

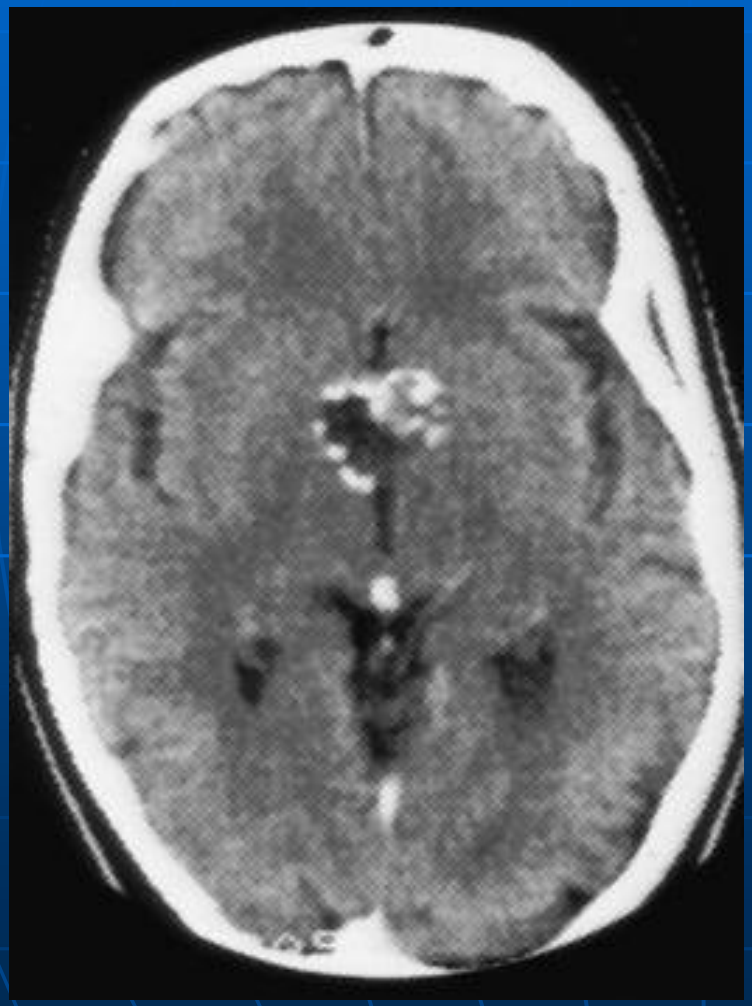
Craniopharyngioma –T1 post

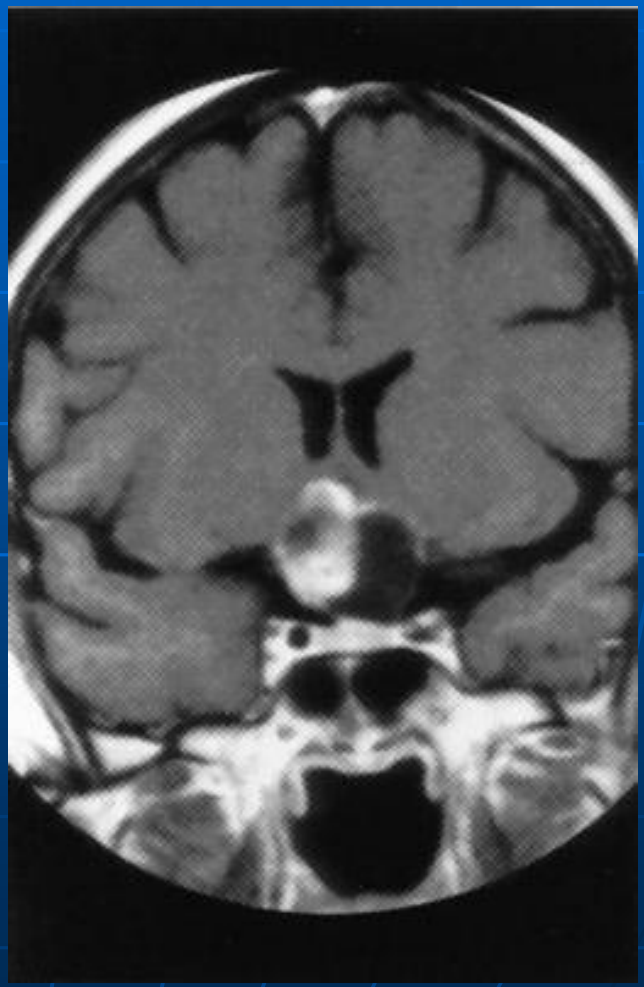


Craniopharyngioma

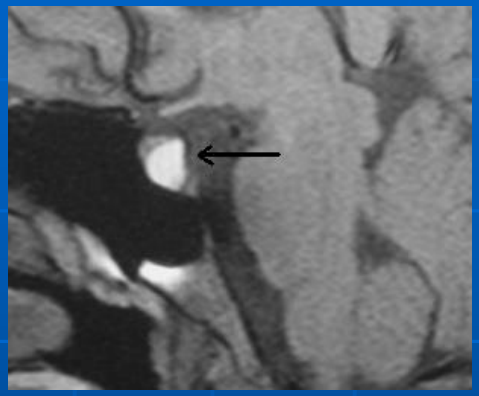


Craniopharyngioma

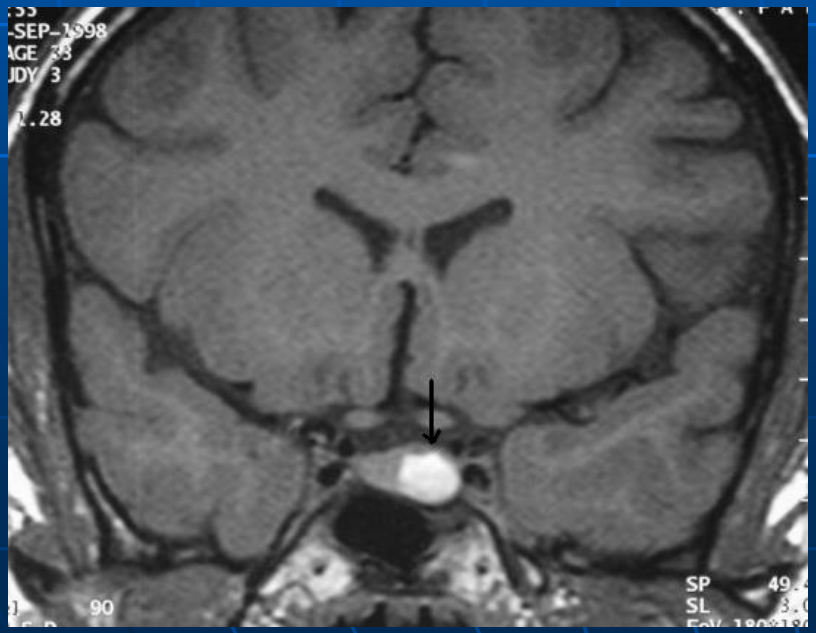


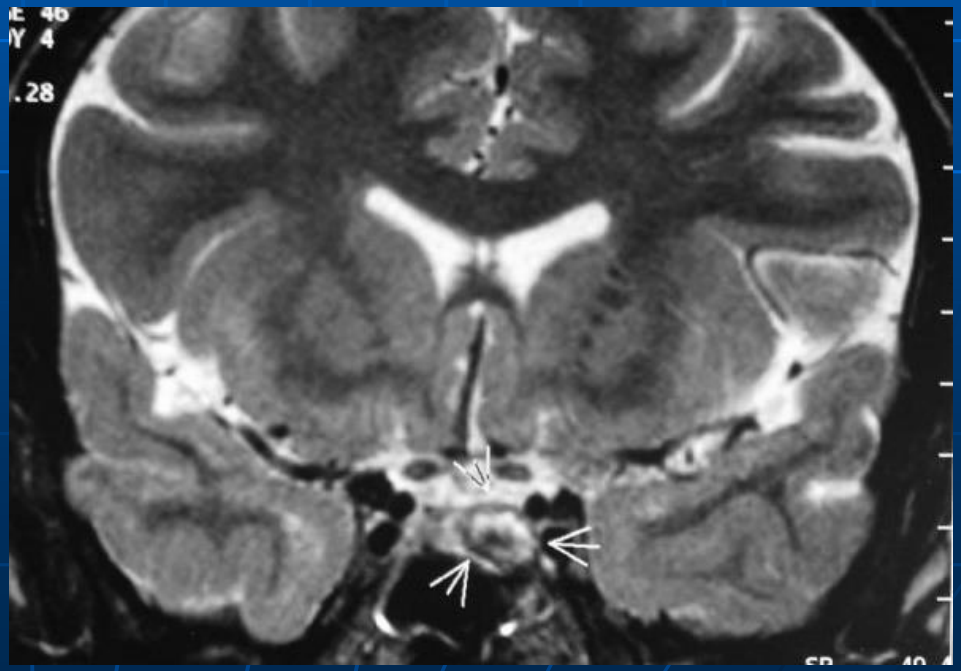


Rathke's cleft cyst

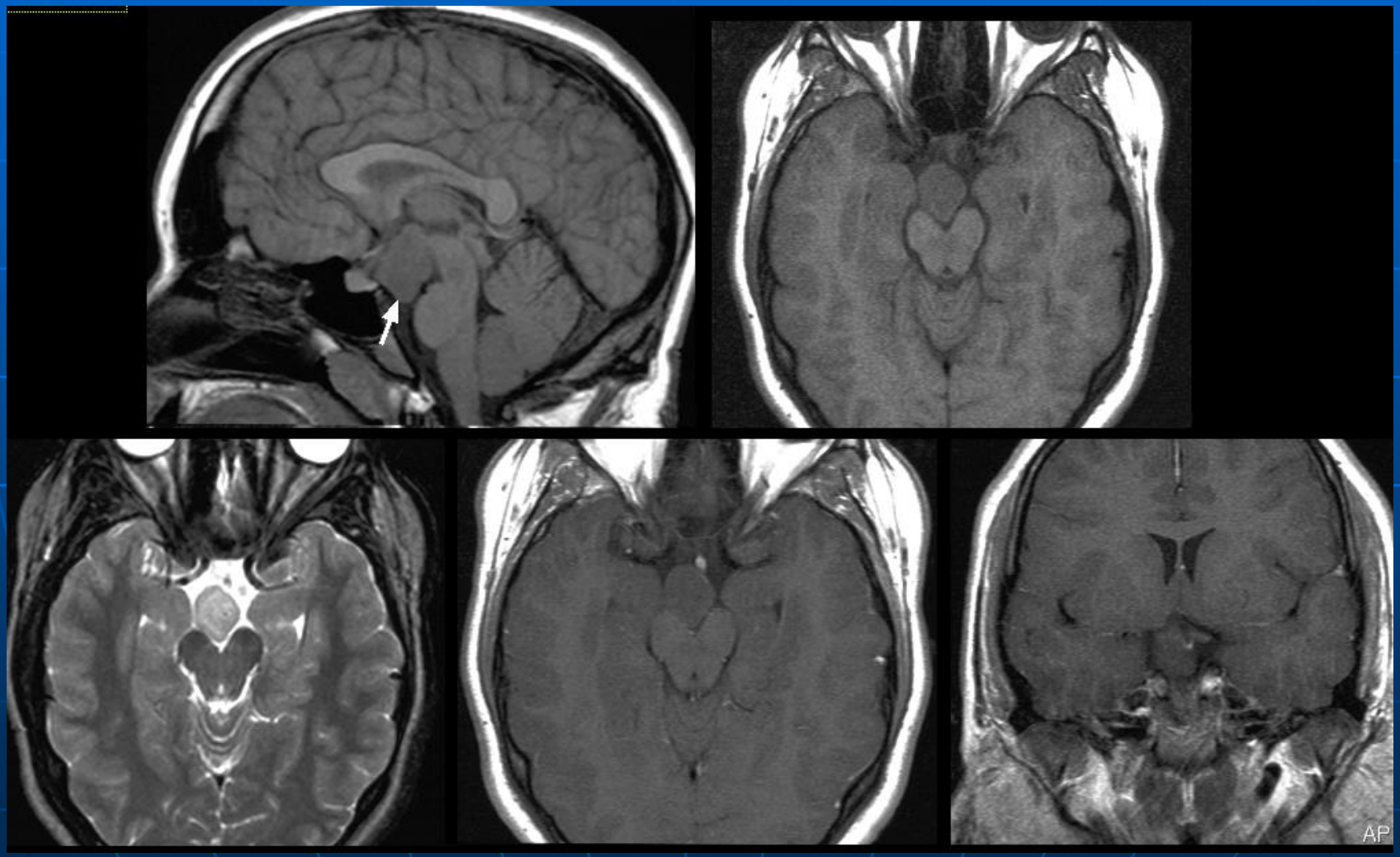


1. Uncommon benign cystic lesions derived from the remnants of the epithelium embryologically lining Rathke's cleft. They 50% - intrasellar, 25 % - suprasellar and both in 25% of cases.
2. High, low, or intermediate on T1- and T2-weighted, no enhancement, cranio typically enhances





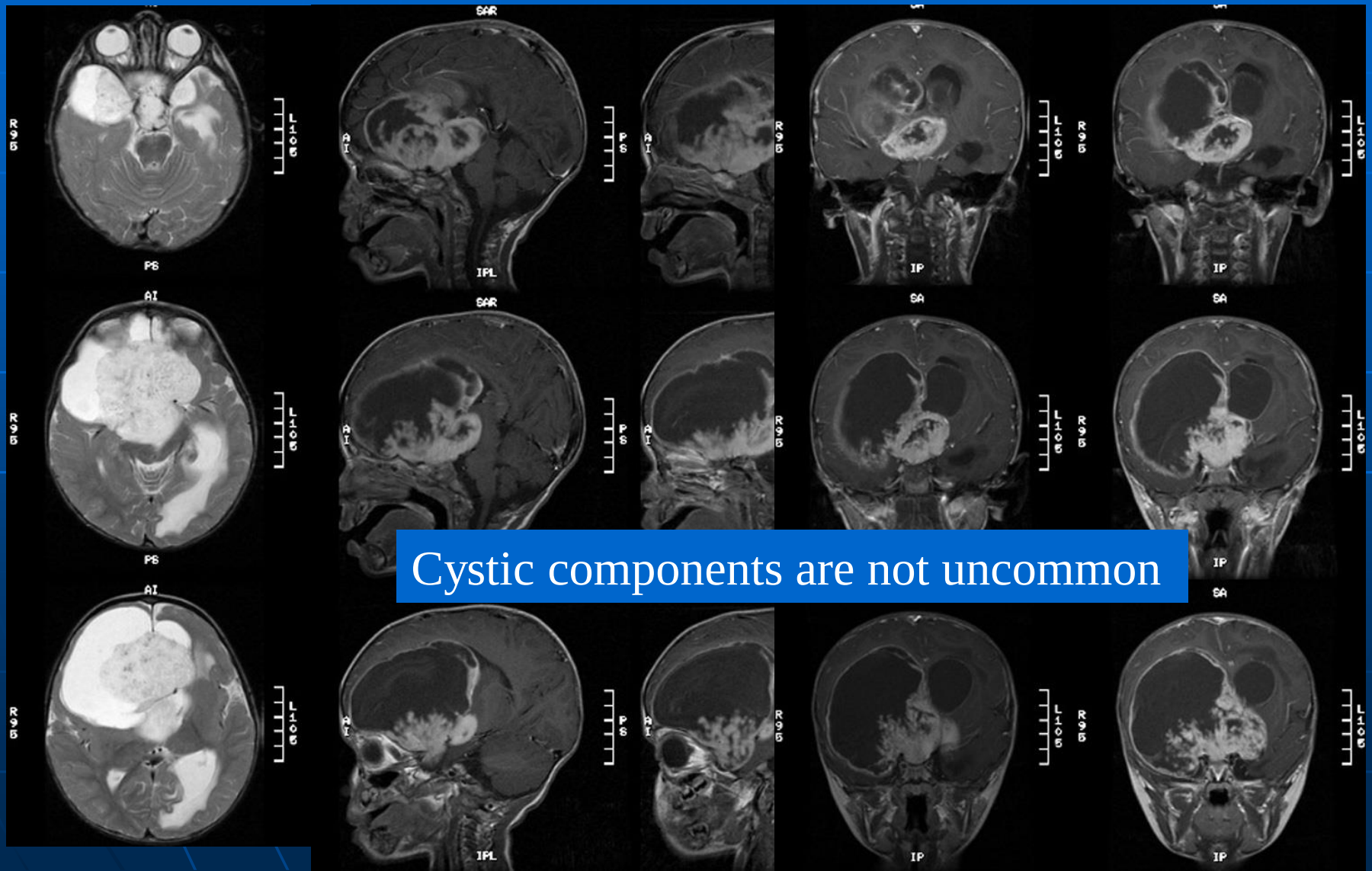
Hypothalamic hamartoma



Hypothalamic hamartoma

- Most common cause of central precocious puberty
- Also known as hamartoma of the tuber cinereum, is typically located in the region between the mamillary bodies and the tuber cinereum of the hypothalamus
- Gelastic-type seizures are more common when the tumor diameter is more than 10 mm

Hypothalamic glioma



Cystic components are not uncommon

Sella/Suprsella

- ***DDX (child)***
- **Rathke's cleft cyst;**
- **hypothalamic glioma;** appear as masses in the floor of the 3rd ventricle and do not extend into the sella. There are usually no cystic components, and calcification is rare. They tend to enhance fairly uniformly
- **Epidermoid and dermoid**
- **teratoma** - may resemble craniopharyngioma in having solid and cystic components and calcification, but the **presence of fat allows differentiation.**
- Germinoma

- ***DDX: (Adults)***
- **Pituitary adenoma (most common)**
- Meningioma
- Metastasis
- Sarcoid
- Granulomatous masses
- Arachnoid cyst.
- **Aneurysm, most important lesion to rule out**