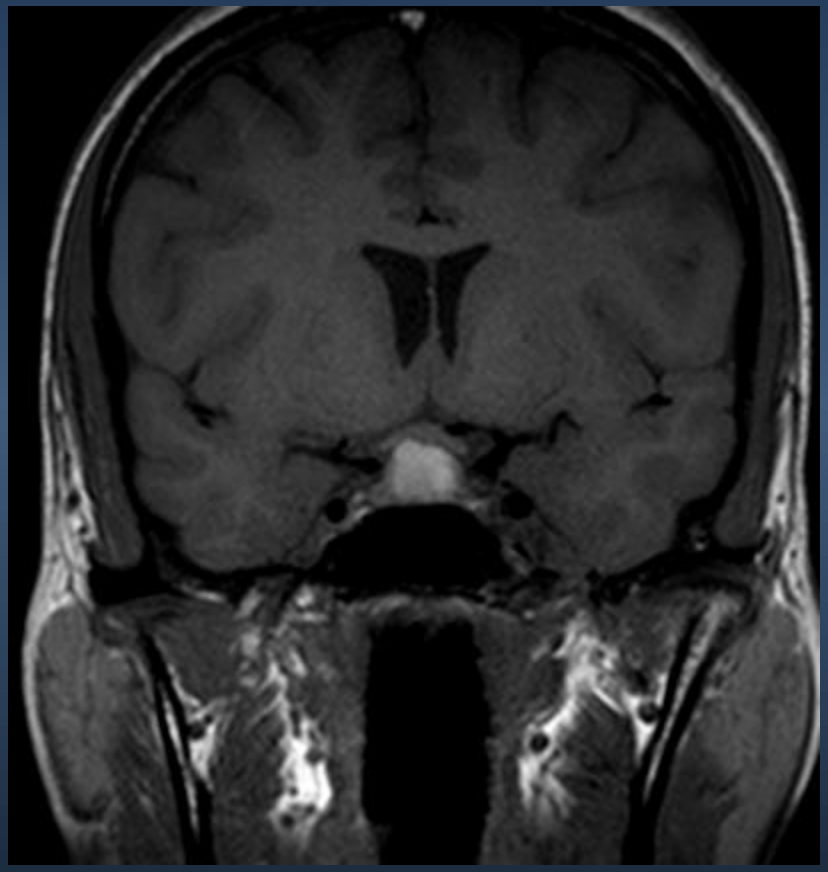
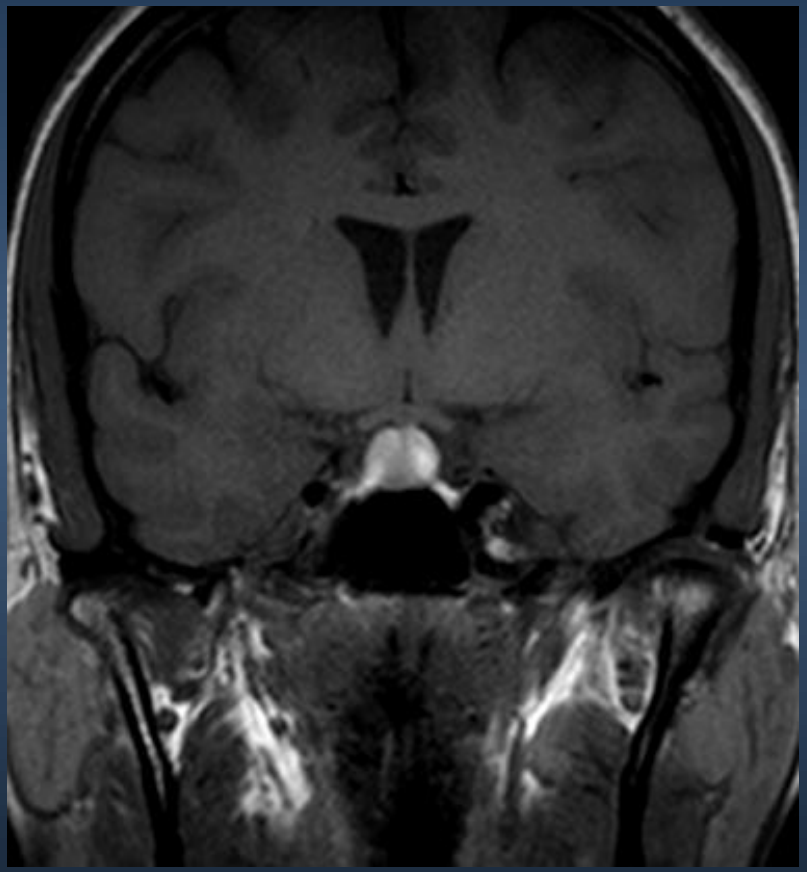
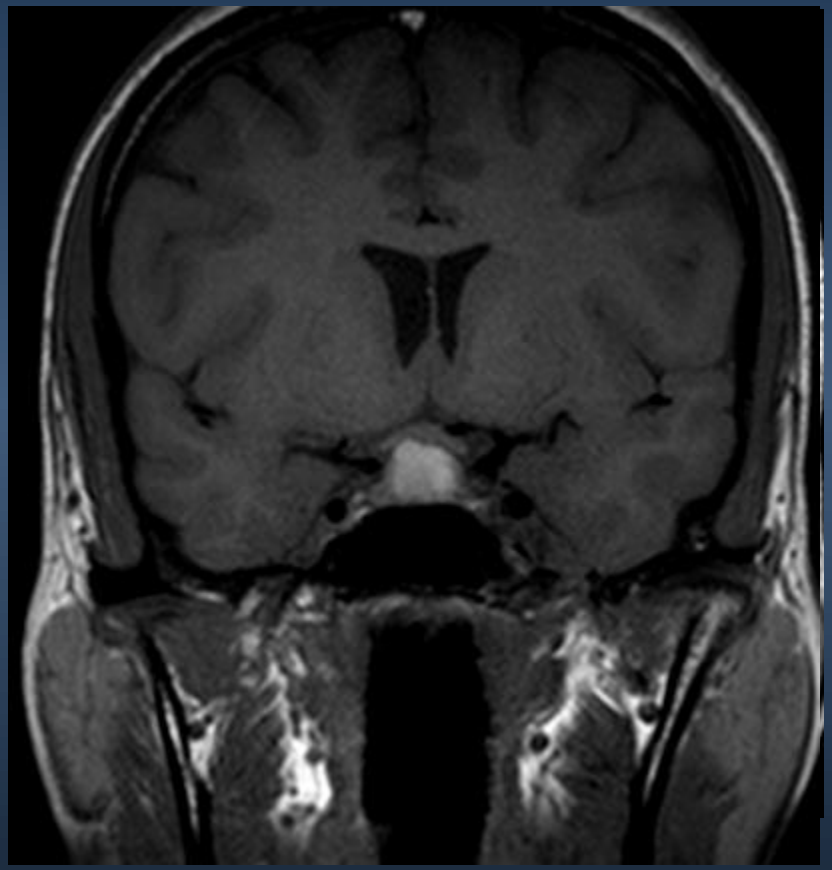
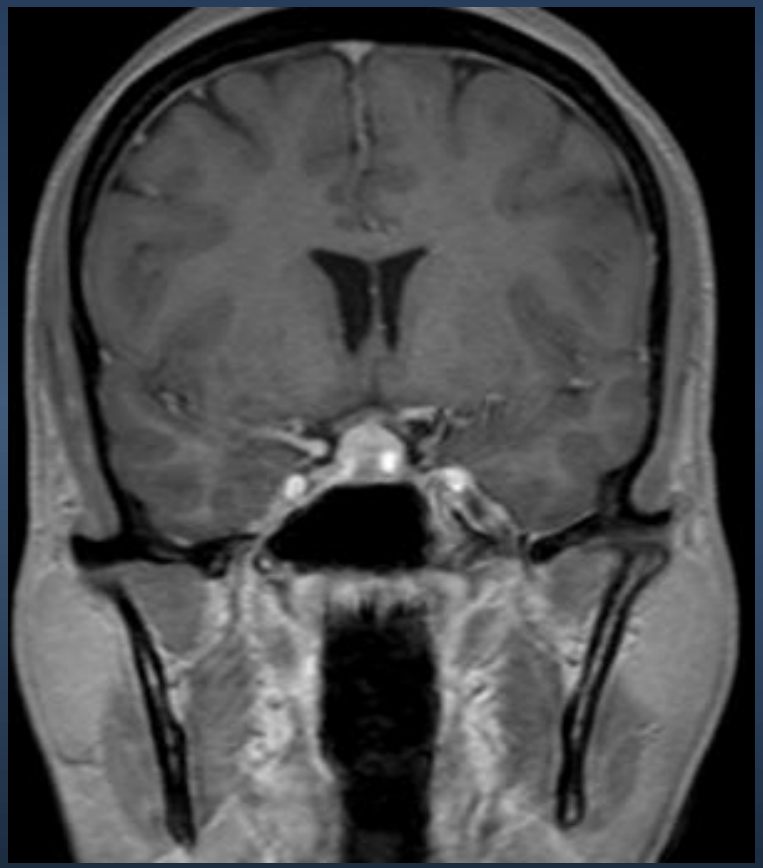


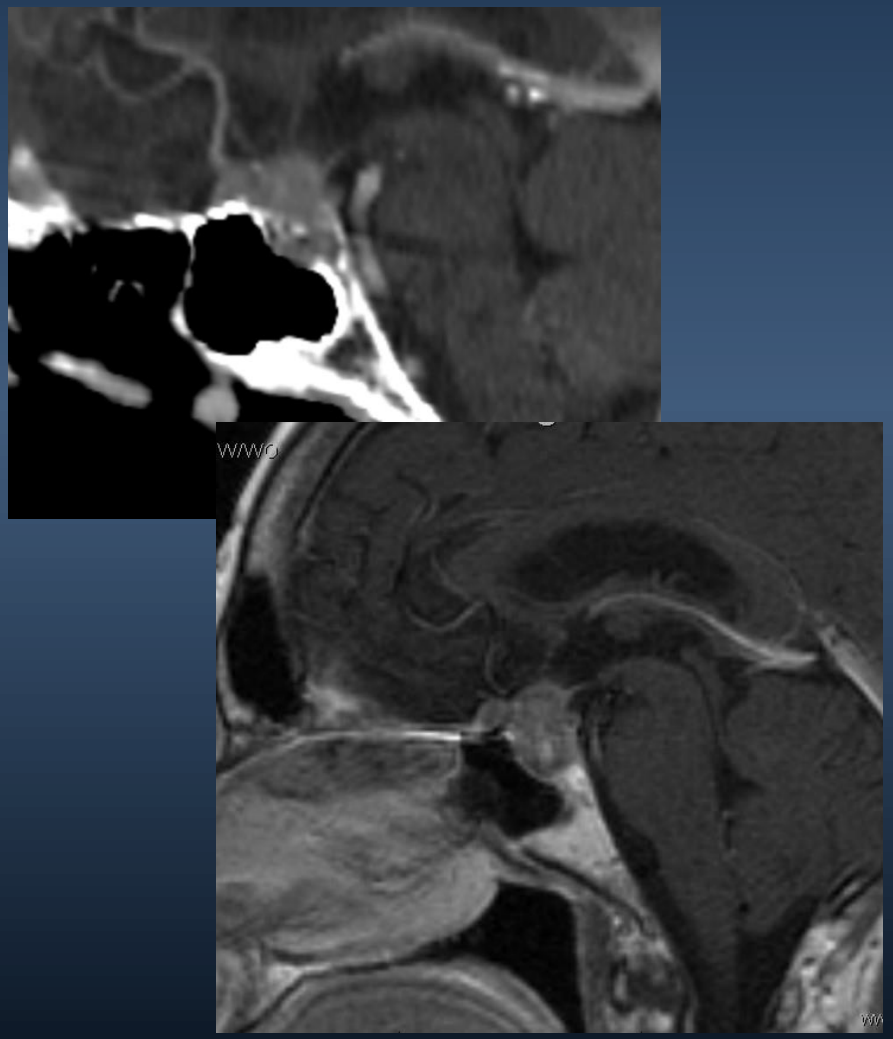






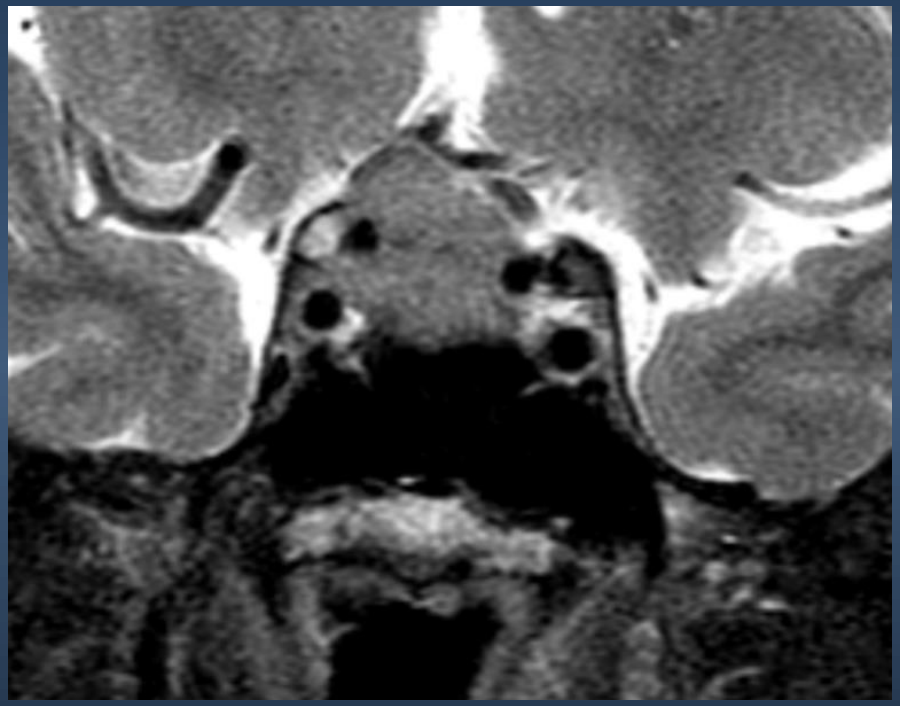
Metastasis

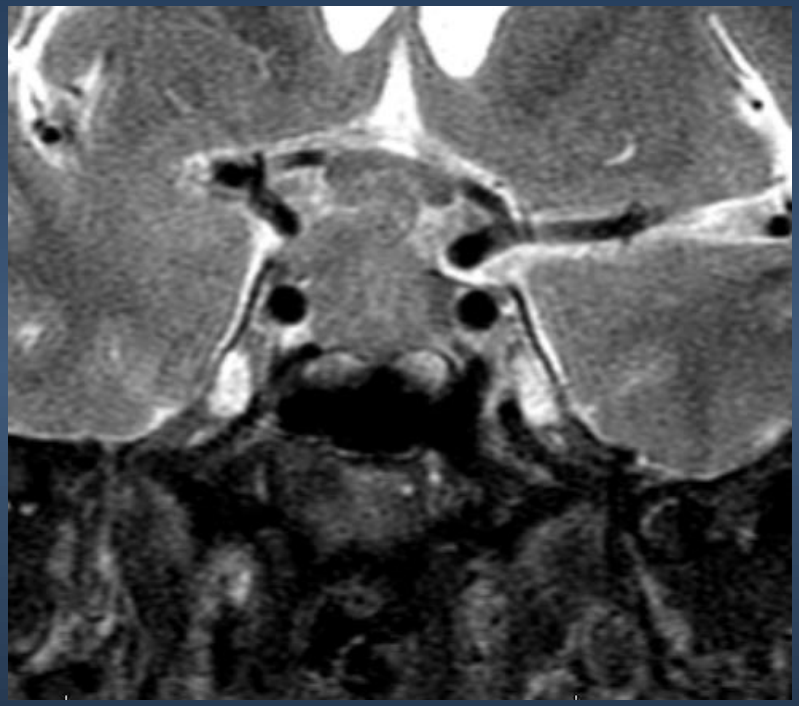
- 1% of sellar/parasellar masses
- Usually occurs with known primary
- Can involve third ventricle, hypothalamus, infundibular stalk
- May be both supra-, intrasellar



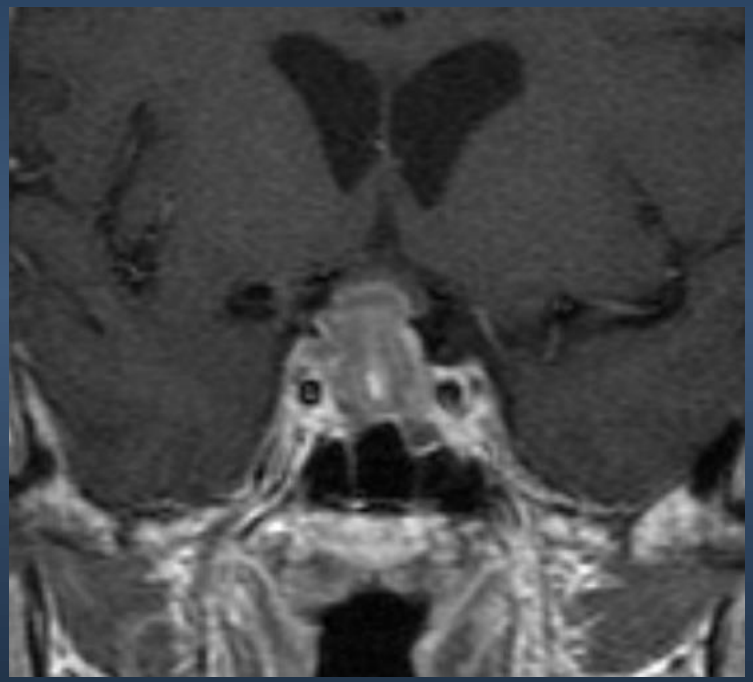
57 year old with progressive Headache and Right Sided Visual Loss

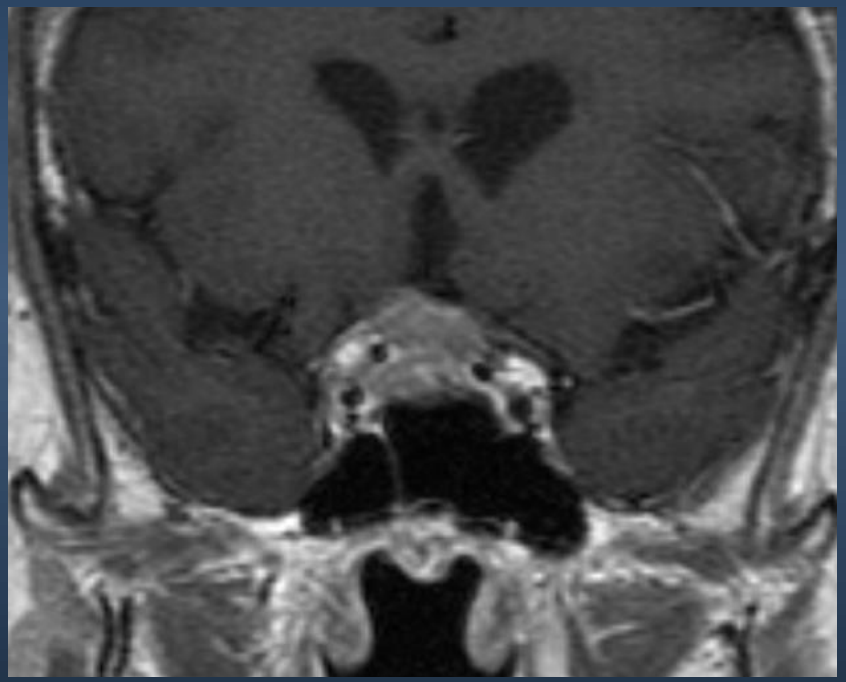
Metastasis: Pituitary Gland



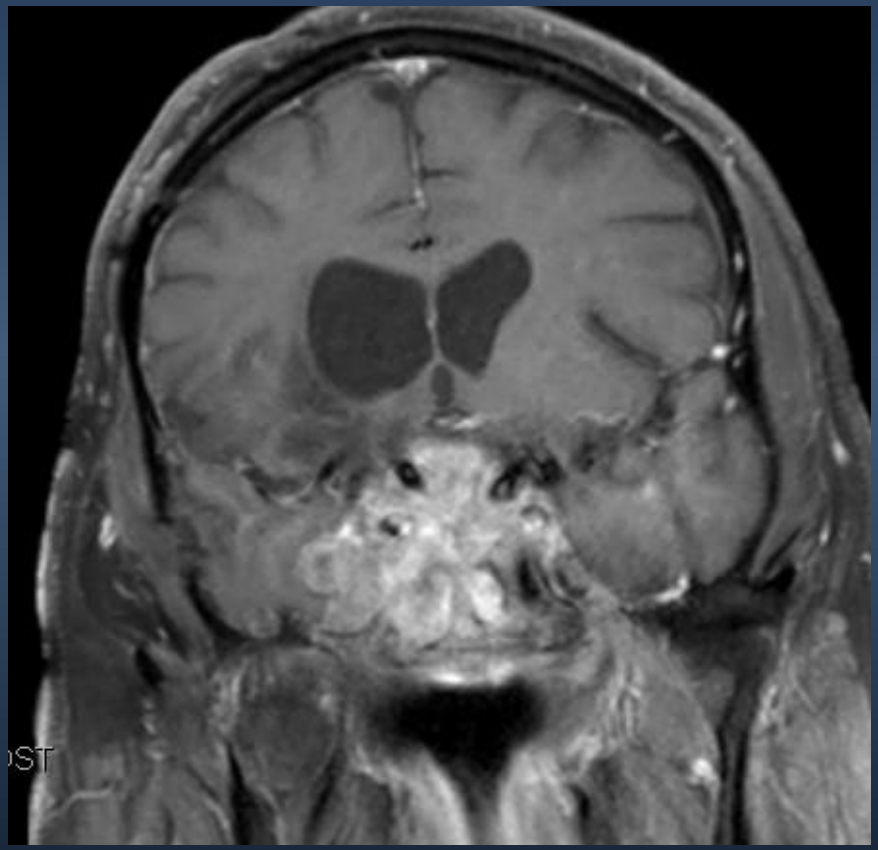


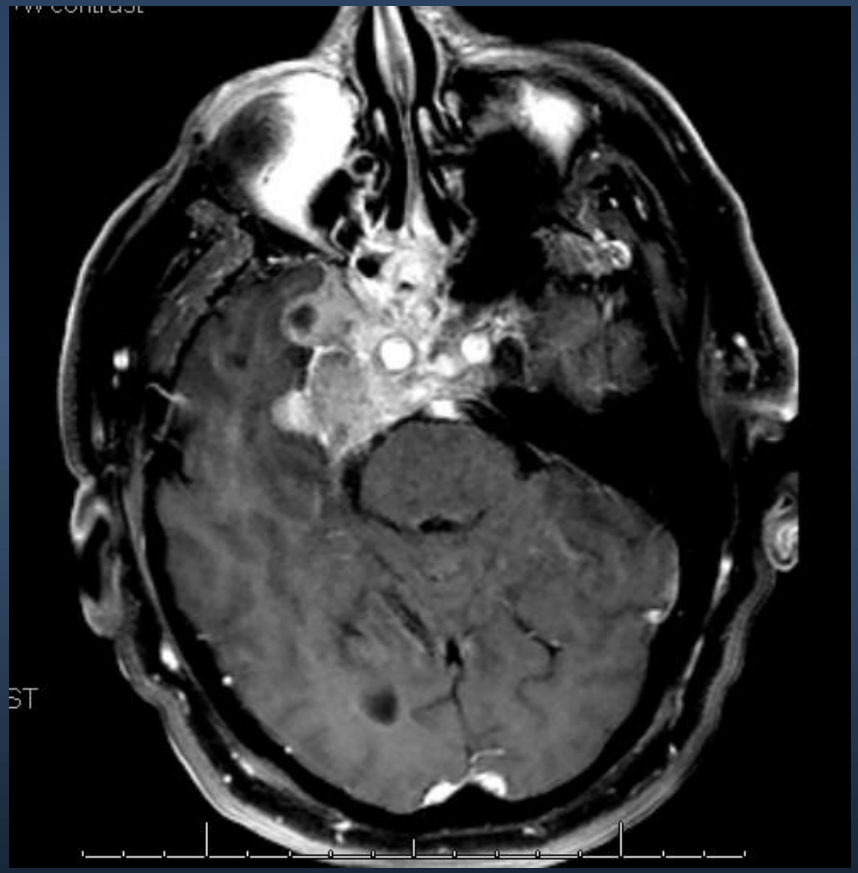
Metastasis: Pituitary Gland



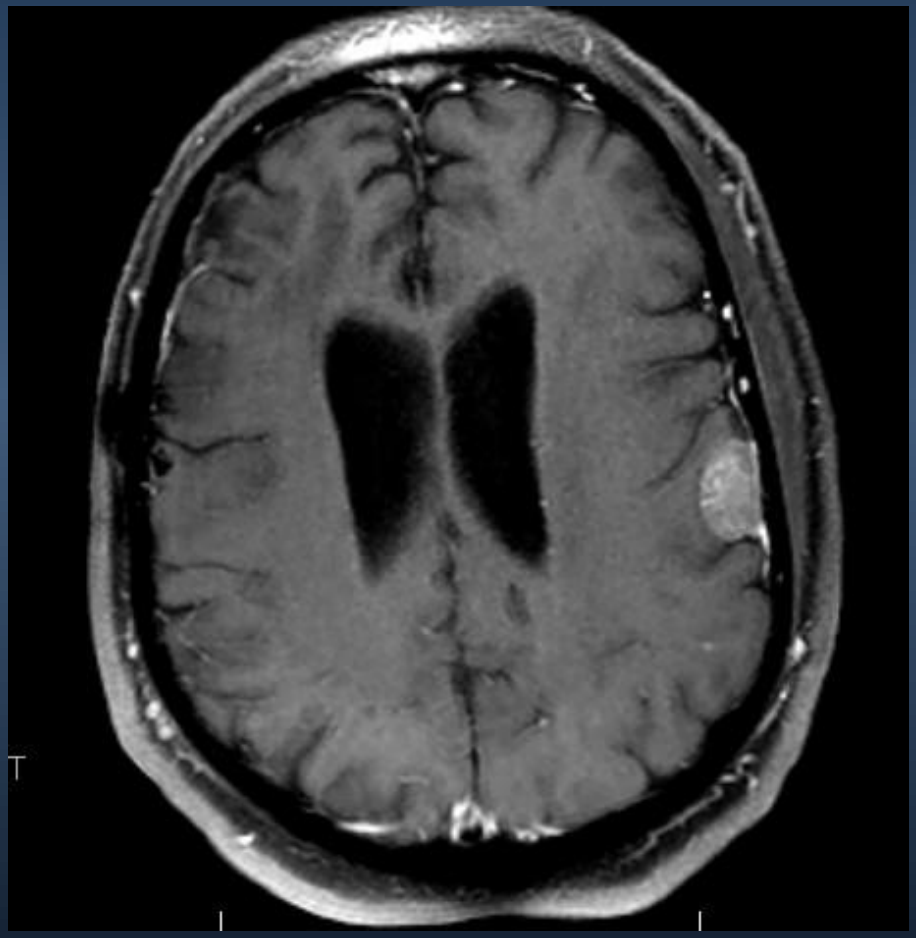


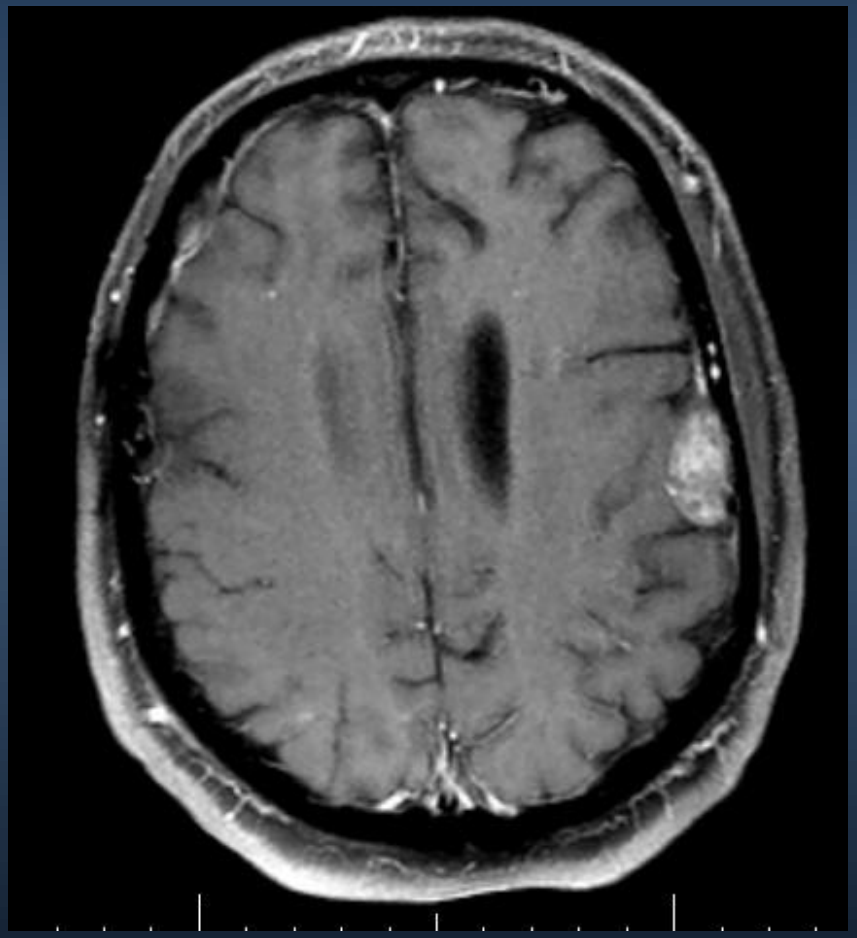
Pituitary Carcinoma





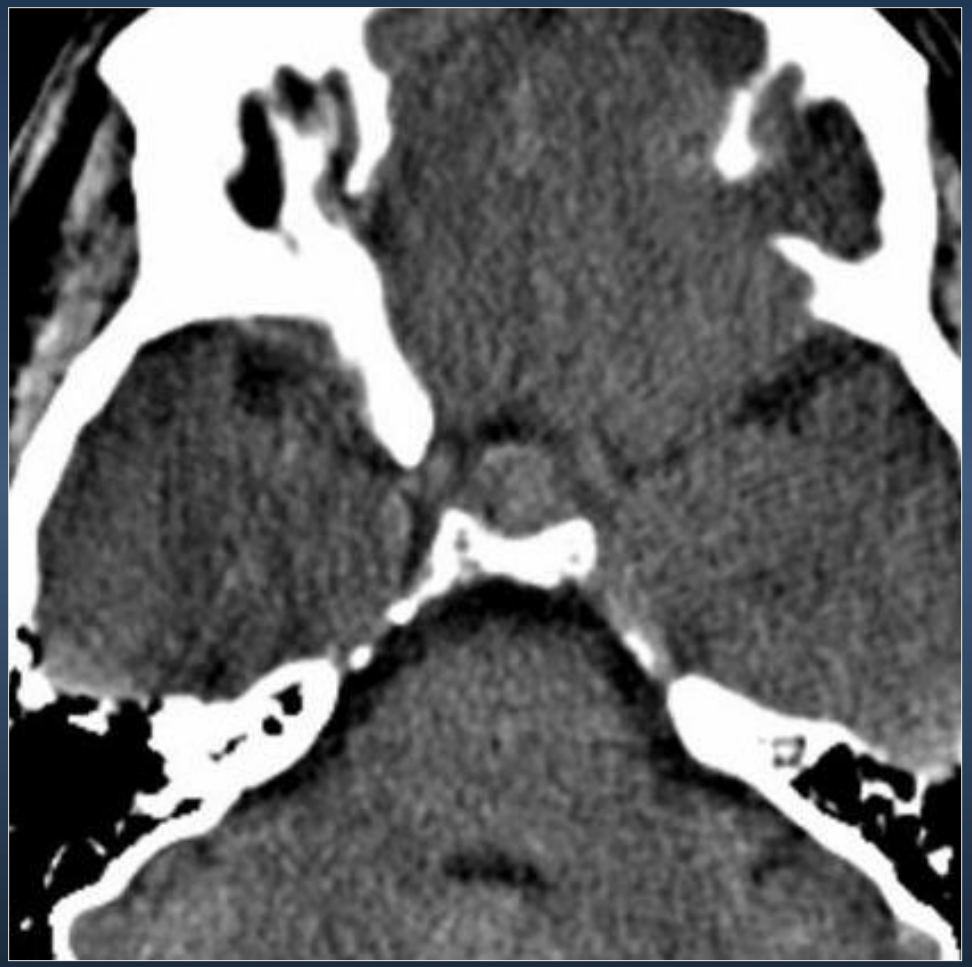
Pituitary Carcinoma

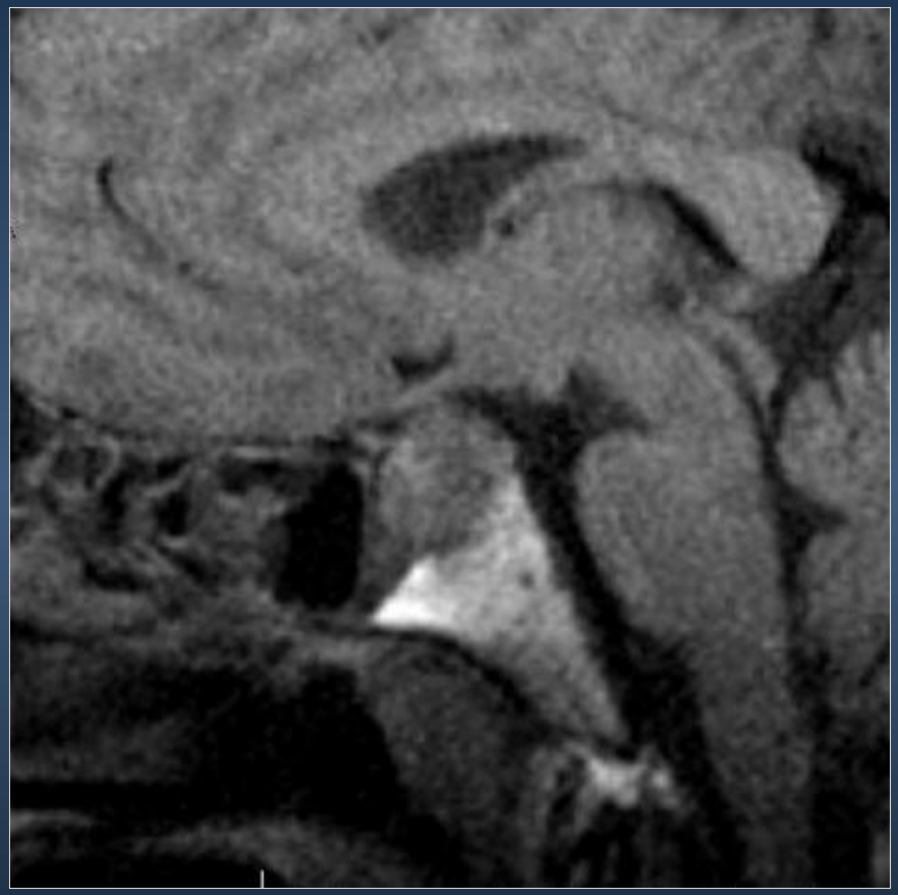


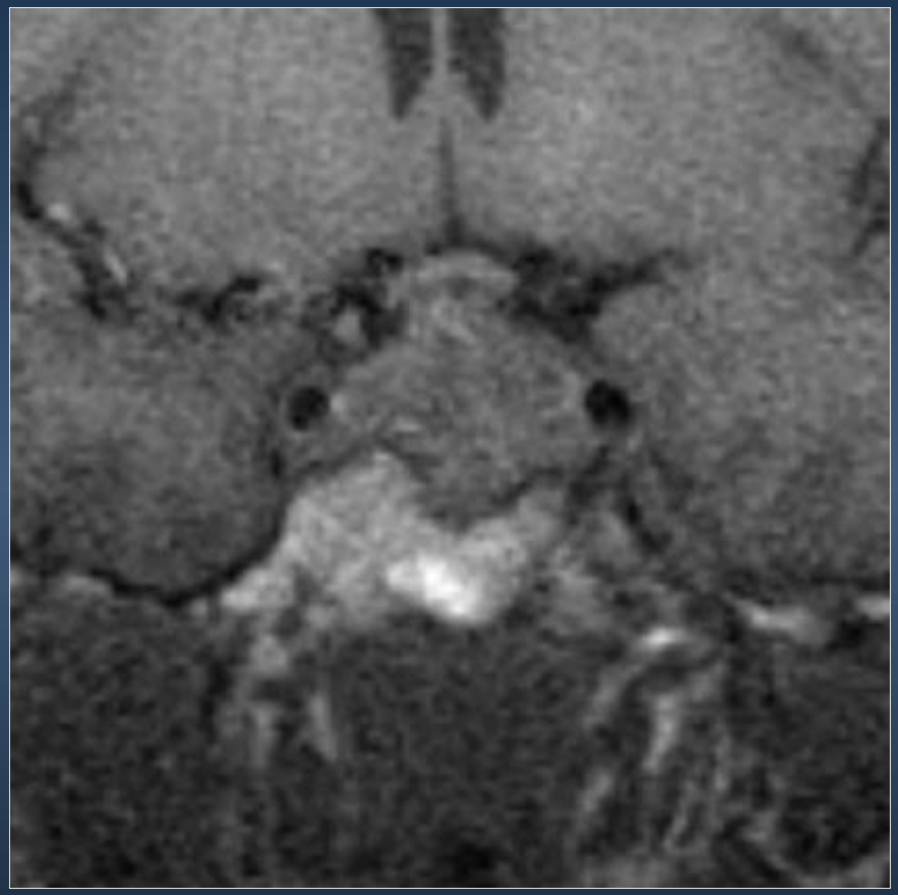


Macroadenoma Mimic

40 year old male with severe HA for 12 hours

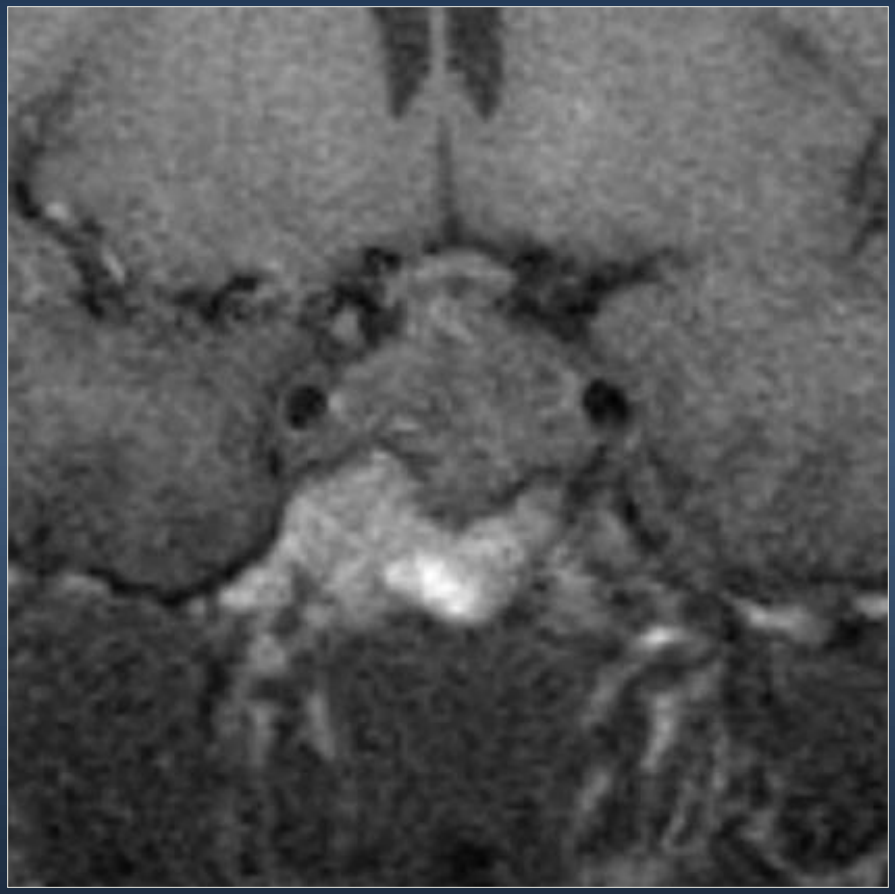


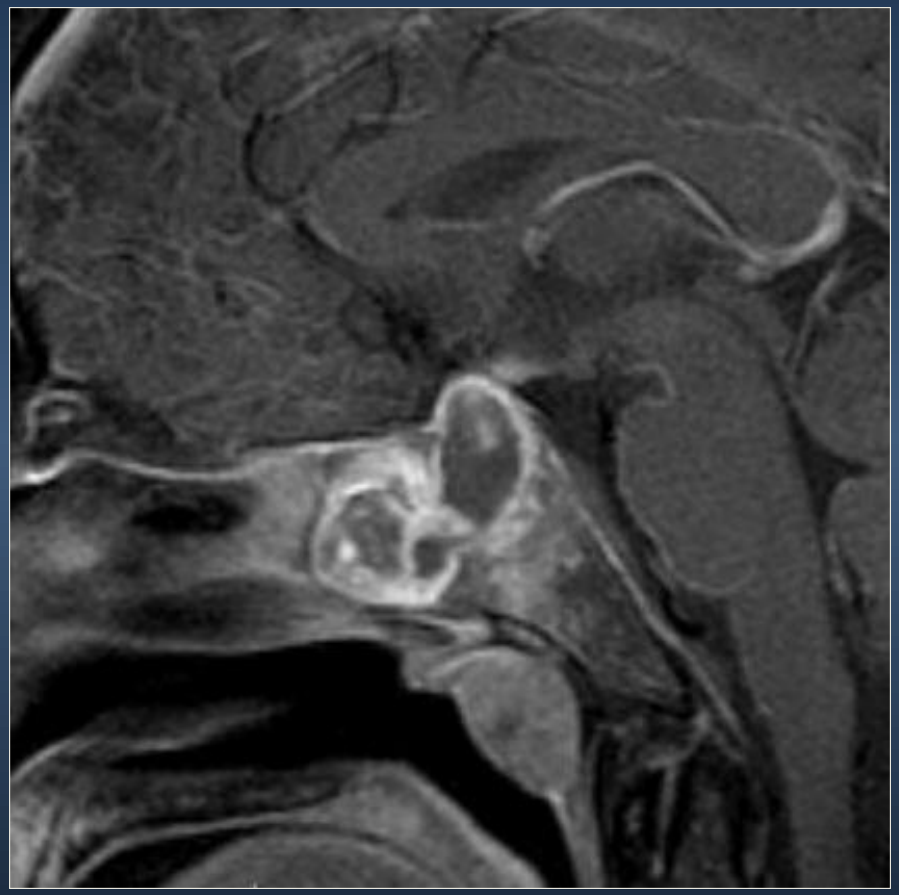


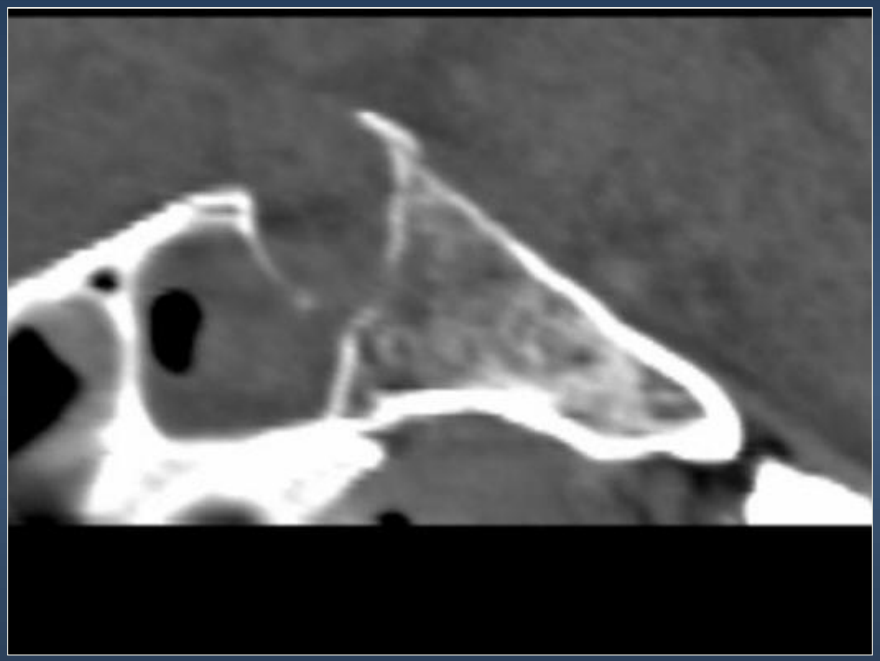


- Macroadenoma with necrosis
- Patient was referred for further evaluation

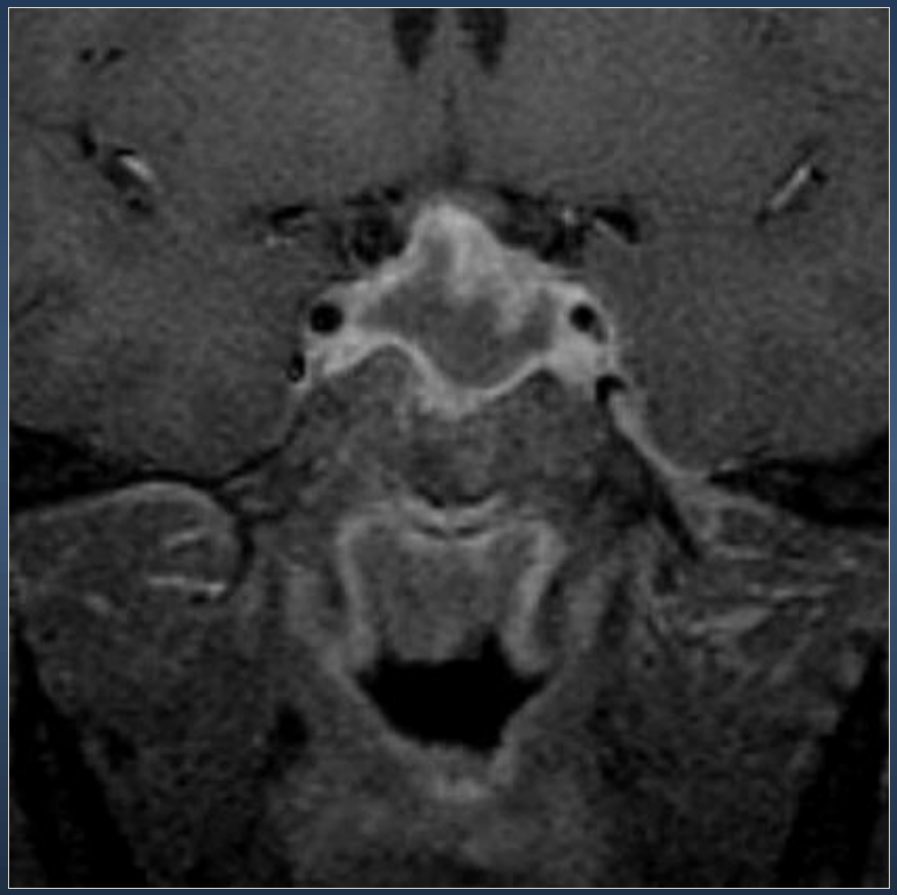
- Patient returned 6 days later with increasing headache, decreased vision and left 6th nerve palsy

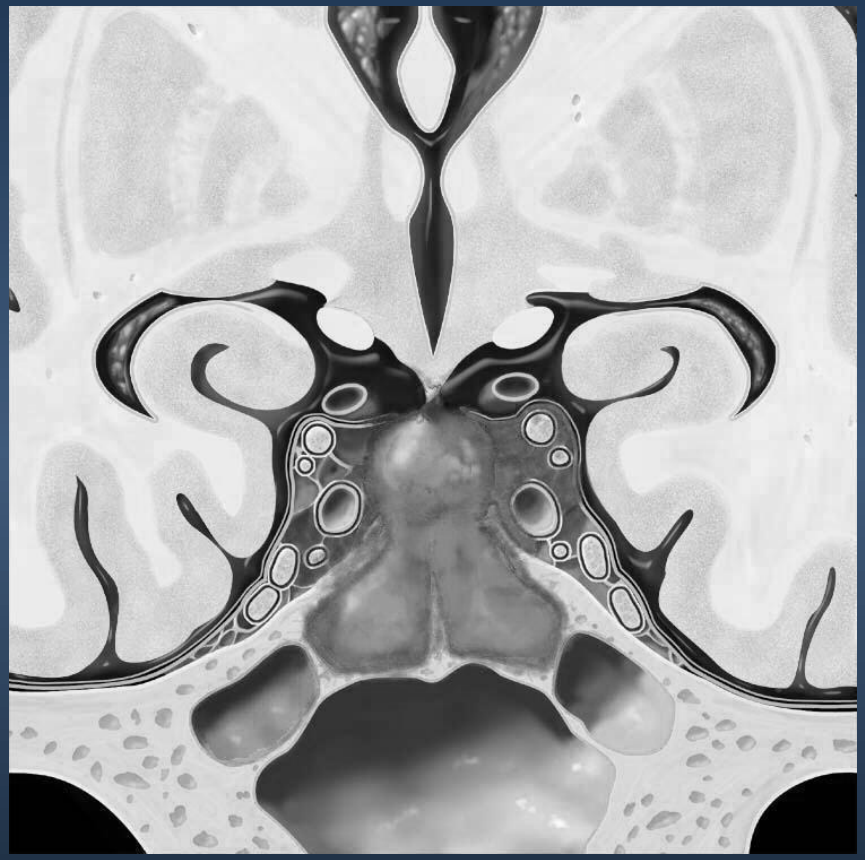




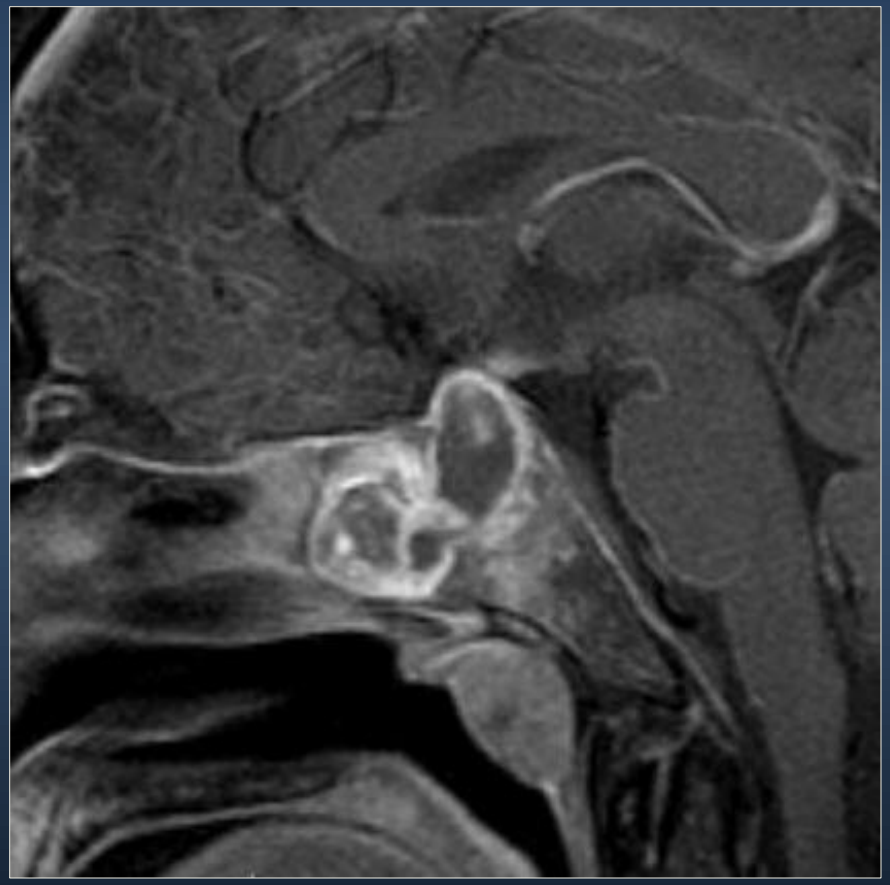


Pituitary Abscess





Dx: Pituitary abscess with dehiscence into sphenoid sinus

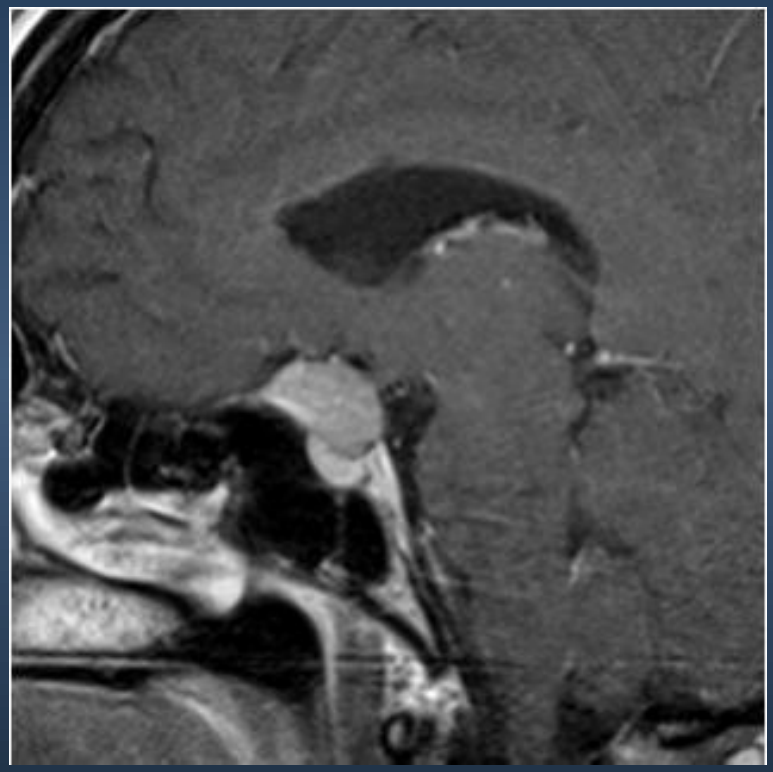


- Rare
- Unusual to culture organism (Propionibacter)
- Sometimes associated with cav sinus thrombosis
- Occasionally related to sinus disease

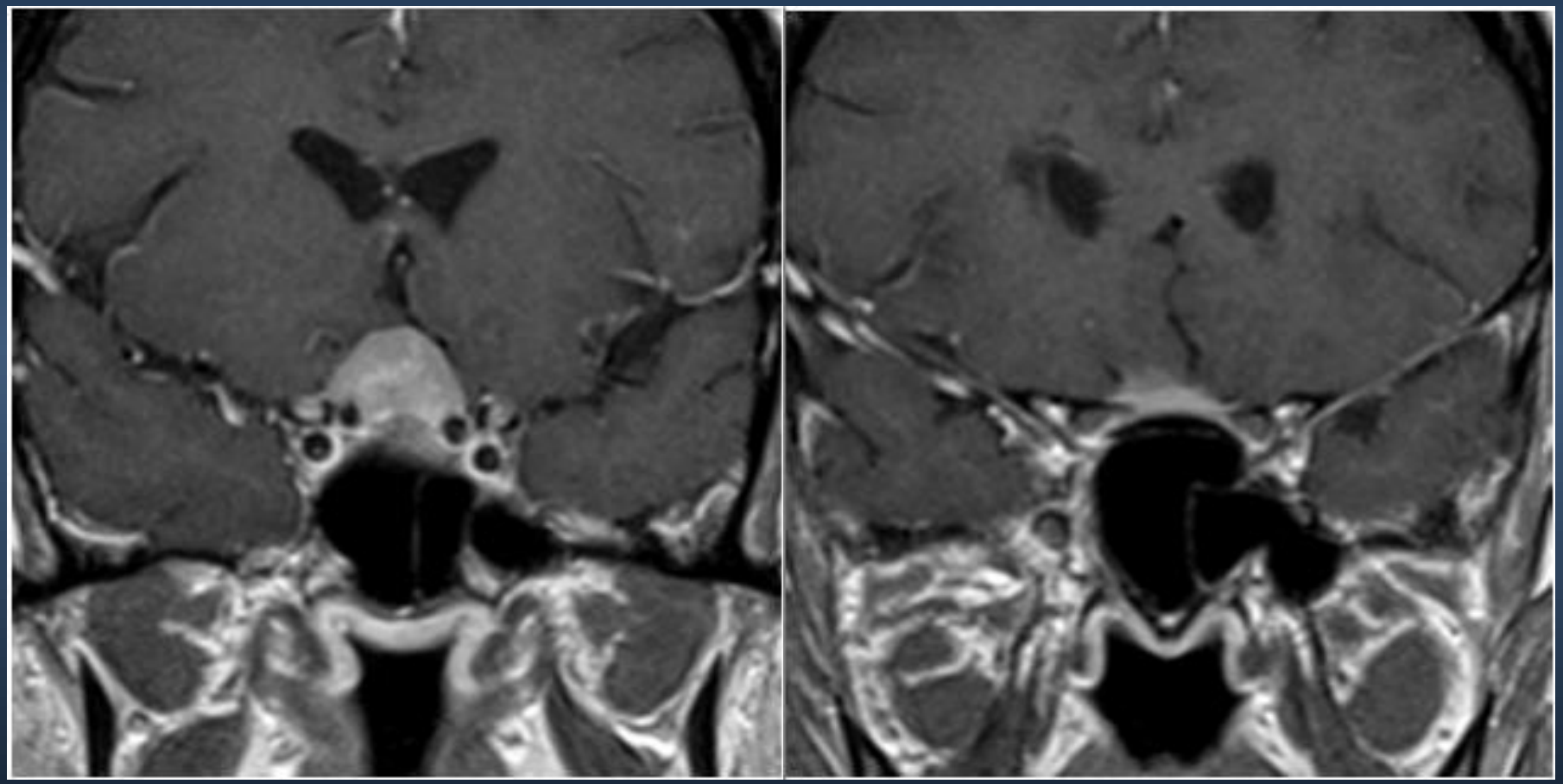
Suprasellar: Pathology

Meningioma

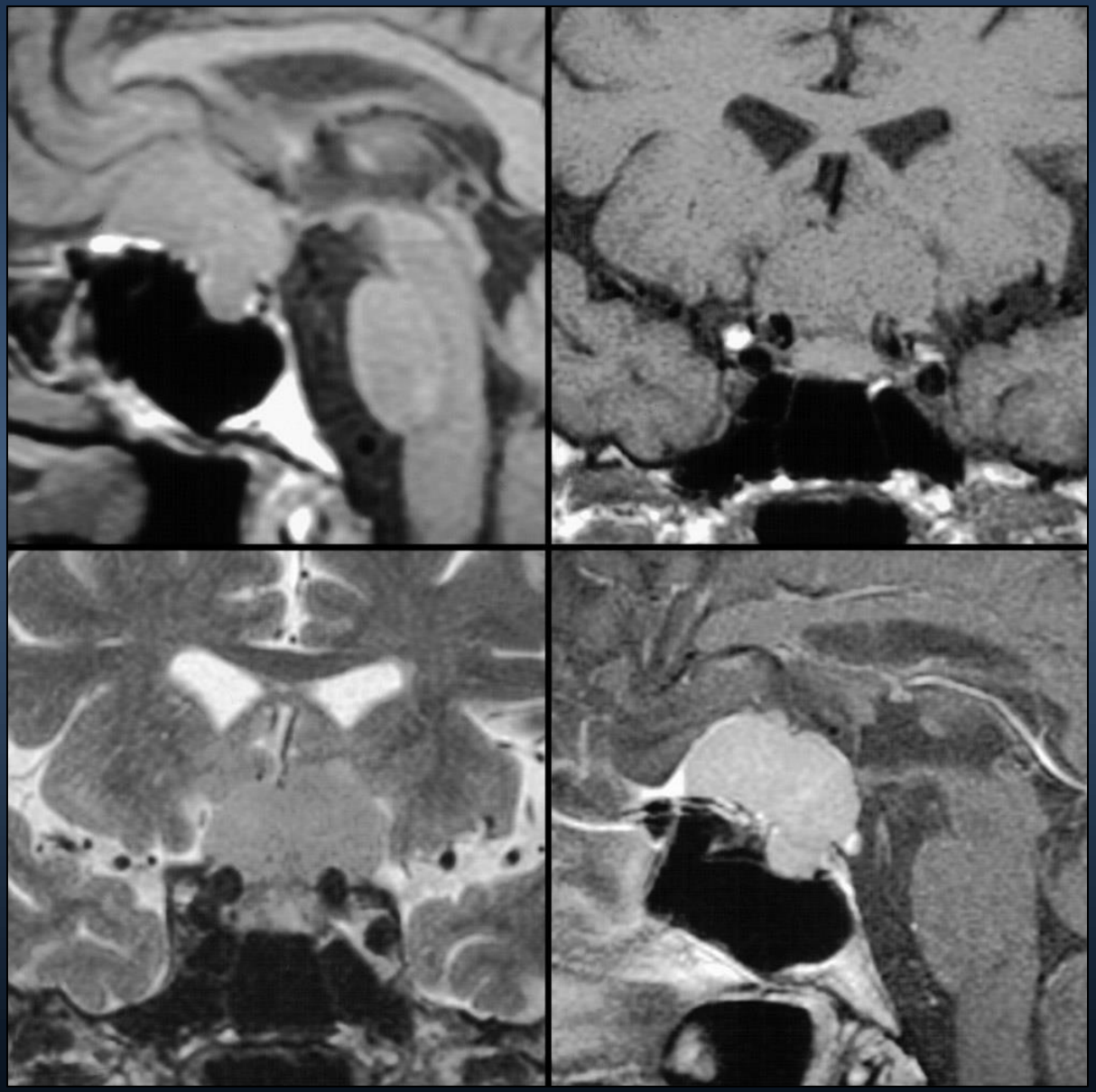
- 2nd most common (adults)
- 15% of meningiomas
  - Tuberculum sellae
  - Clinoid processes
  - Cavernous sinus
- Look for pituitary gland distinct from mass!



Suprasellar: Meningioma



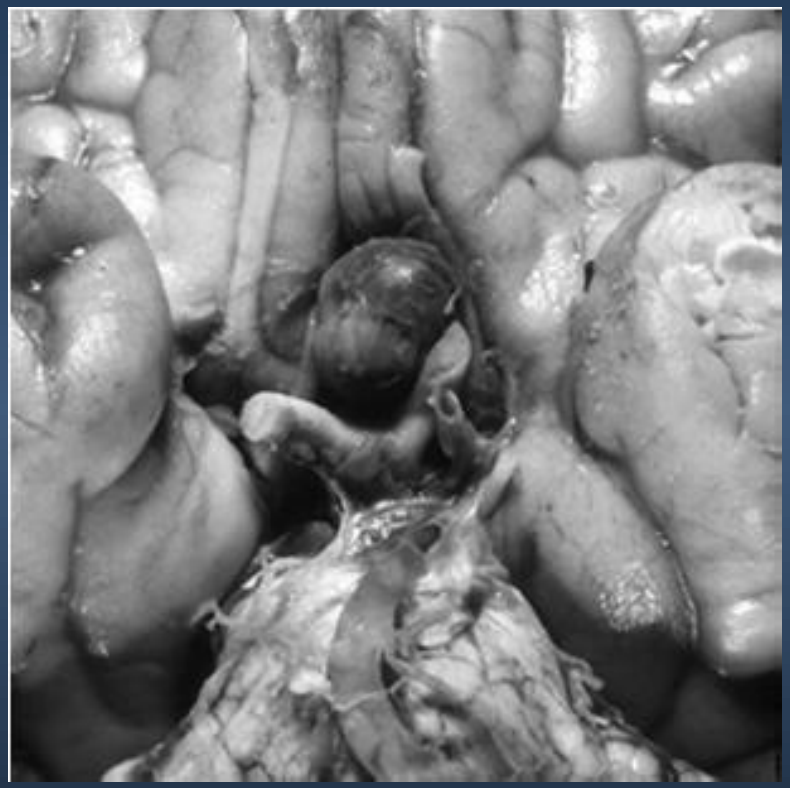
Meningioma



Suprasellar: Aneurysm

Aneurysm

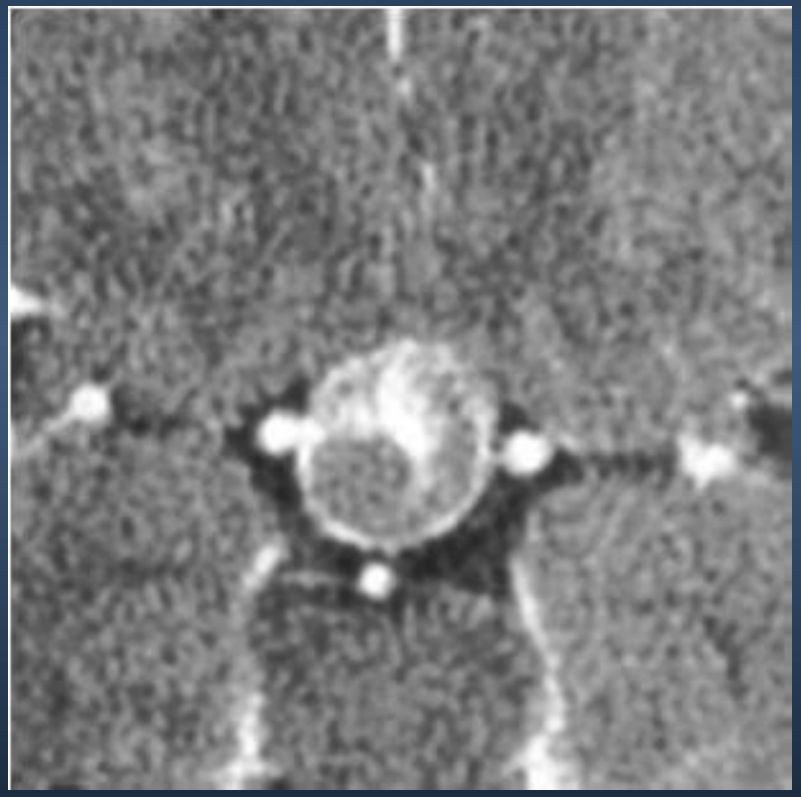
- Third most common (adults)
- Noncalcified central suprasellar mass



Suprasellar: Aneurysm

CT

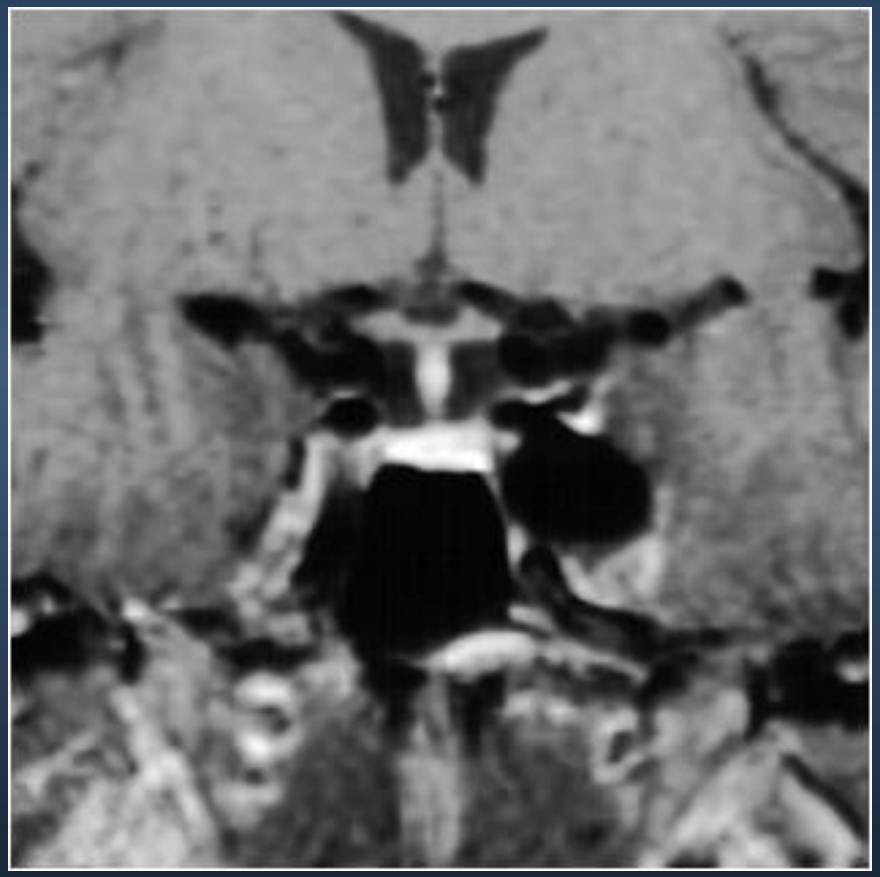
- Noncalcified central suprasellar mass
- Can be difficult to distinguish from adenoma, or meningioma



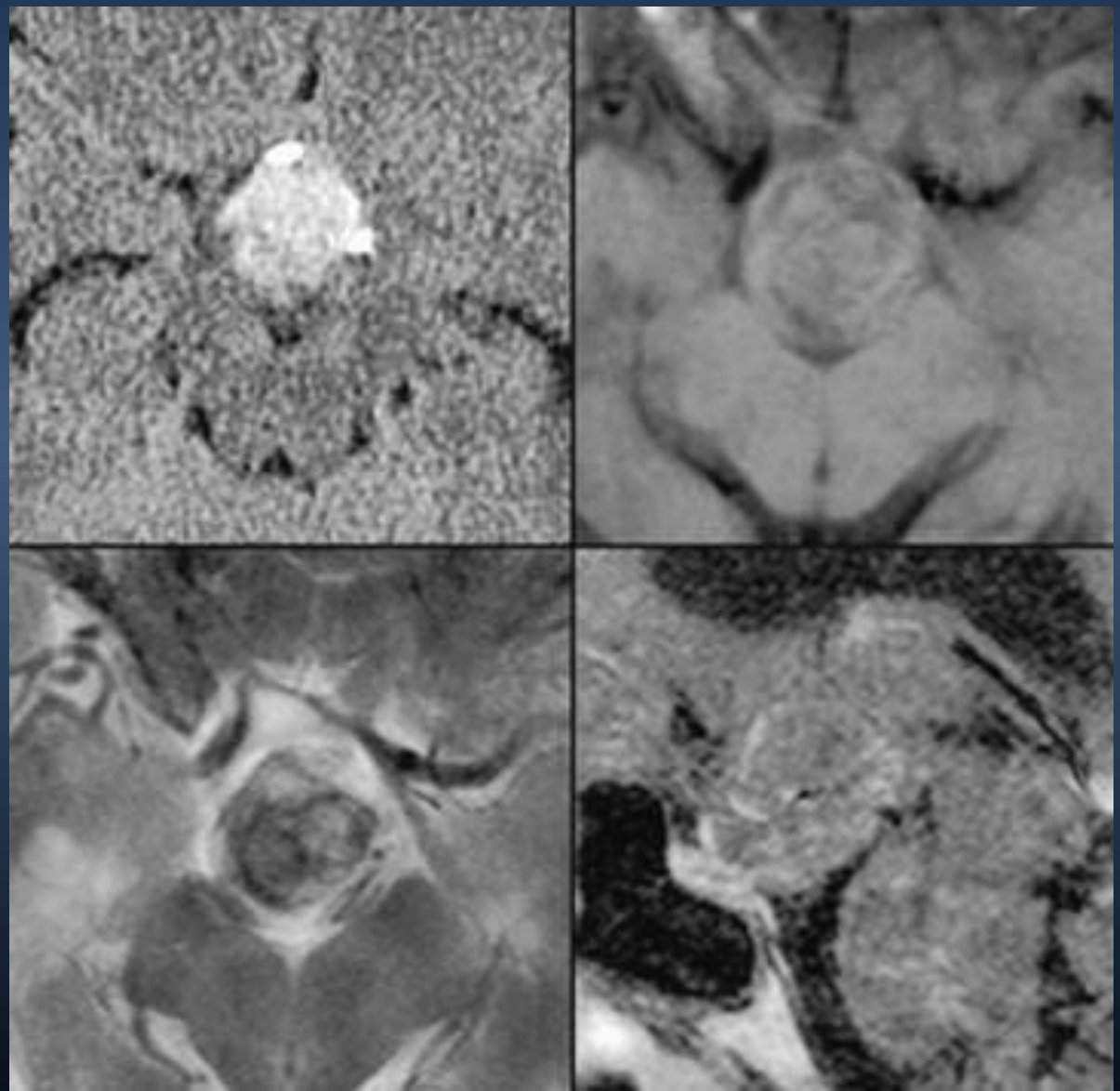
Parasellar: Aneurysm

MRI

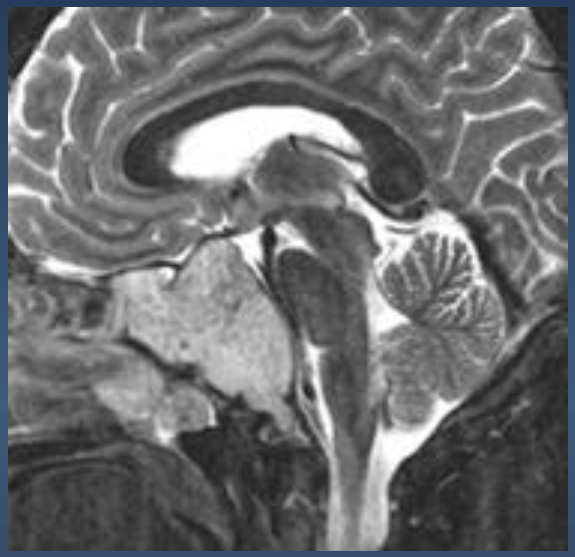
- Flow void or complex mass separate from pituitary
- Phase artifact



Suprasellar: ThrombosedAneurysm

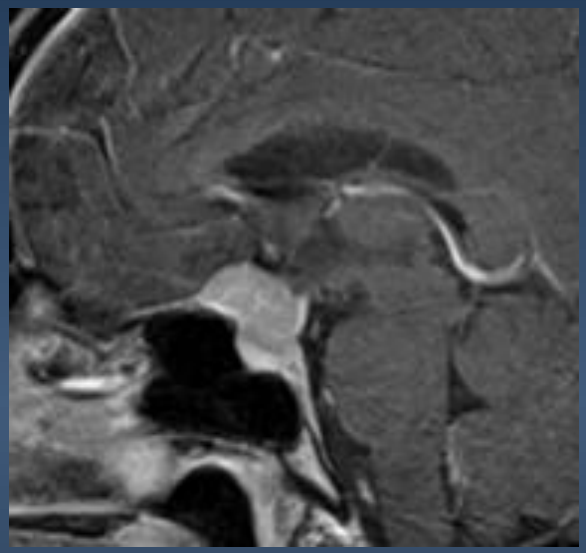


Suprasellar Mass: Adult



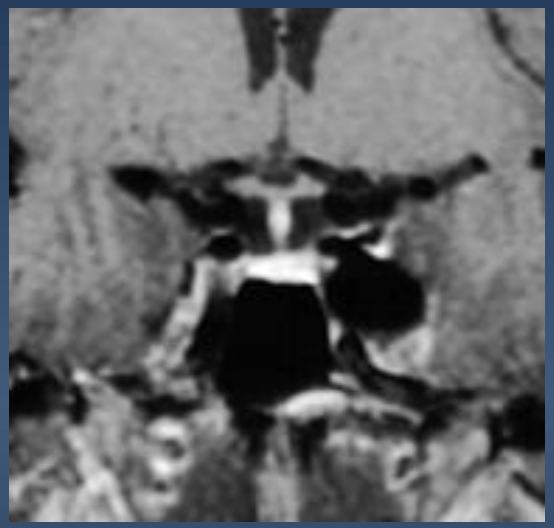
Macroadenoma

- Pituitary *is mass*
- T2 intermediate
- Enhancement



Meningioma

- Pit separate
- Marked C+
- Dural tail



Aneurysm

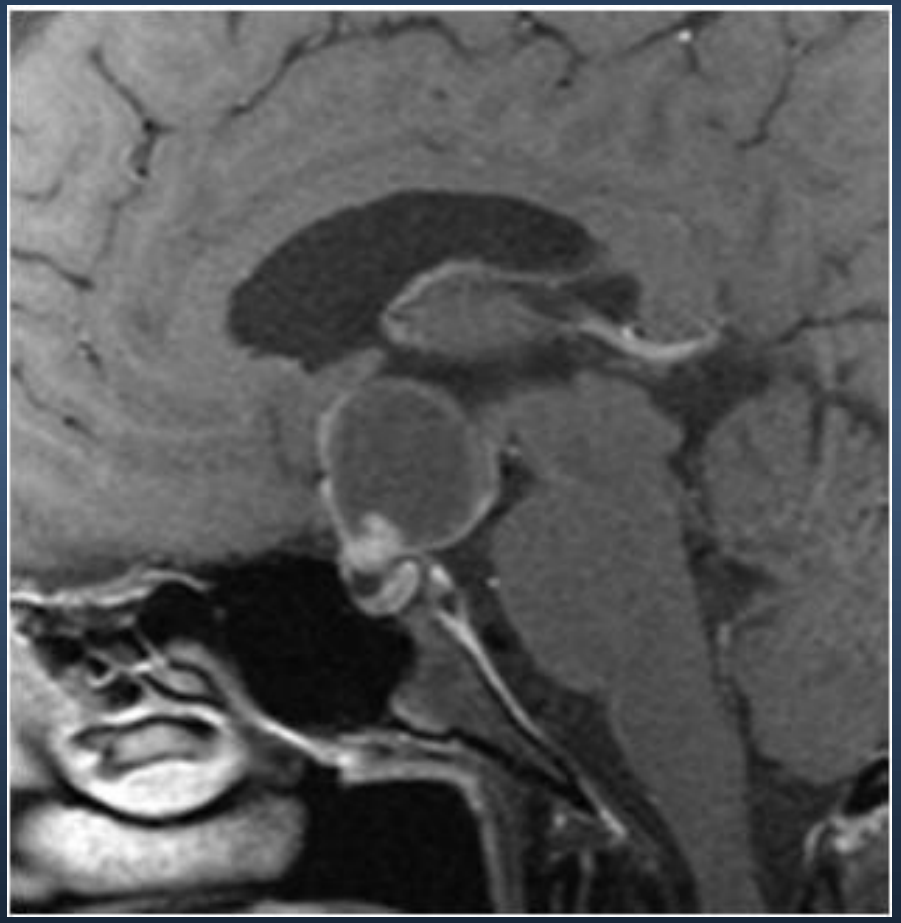
- Pit separate
- Flow void
- Complex

Suprasellar Mass: Child

Craniopharyngioma
- Complex mass
- 90% cystic
- 90% calcified

Astrocytoma
- Chiasm/Hypoth
- T2 hyperintense
- Variable C+

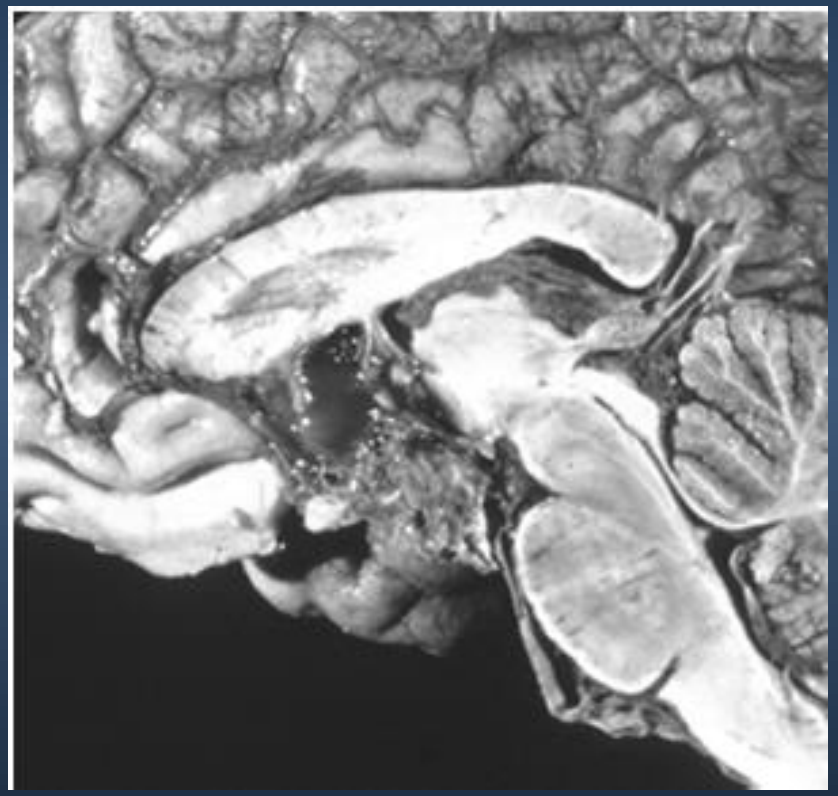
Hamartoma
- Hypothalamus
- GM signal
- No C+



Suprasellar: Craniopharyngioma

Clinical

- Most common suprasellar mass in children
- Peak incidence 5-15 yrs
- Second peak 50-60 yrs
- Visual changes
- Endocrine dysfunction
- Mass effect
- H/A, N, V, papilledema



Suprasellar: Craniopharyngioma

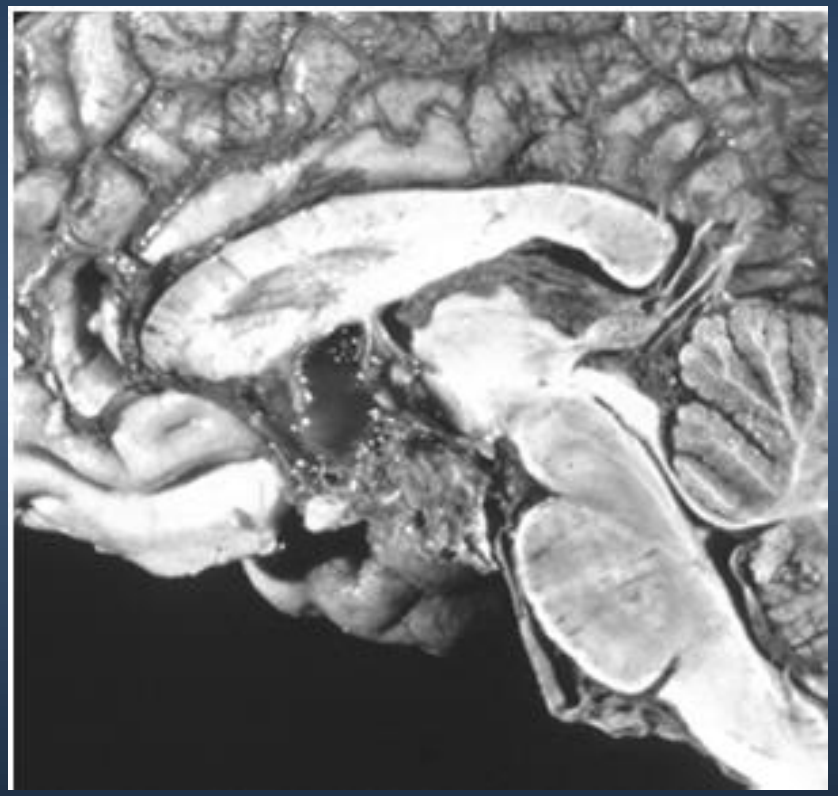
Pathology

Adamantinomatous

- Classic
- “Crank-case oil” in cysts

Papillary (Adults)

- 70% suprasellar with
- small sellar component
- 5% purely intrasellar



Craniopharyngioma: CT

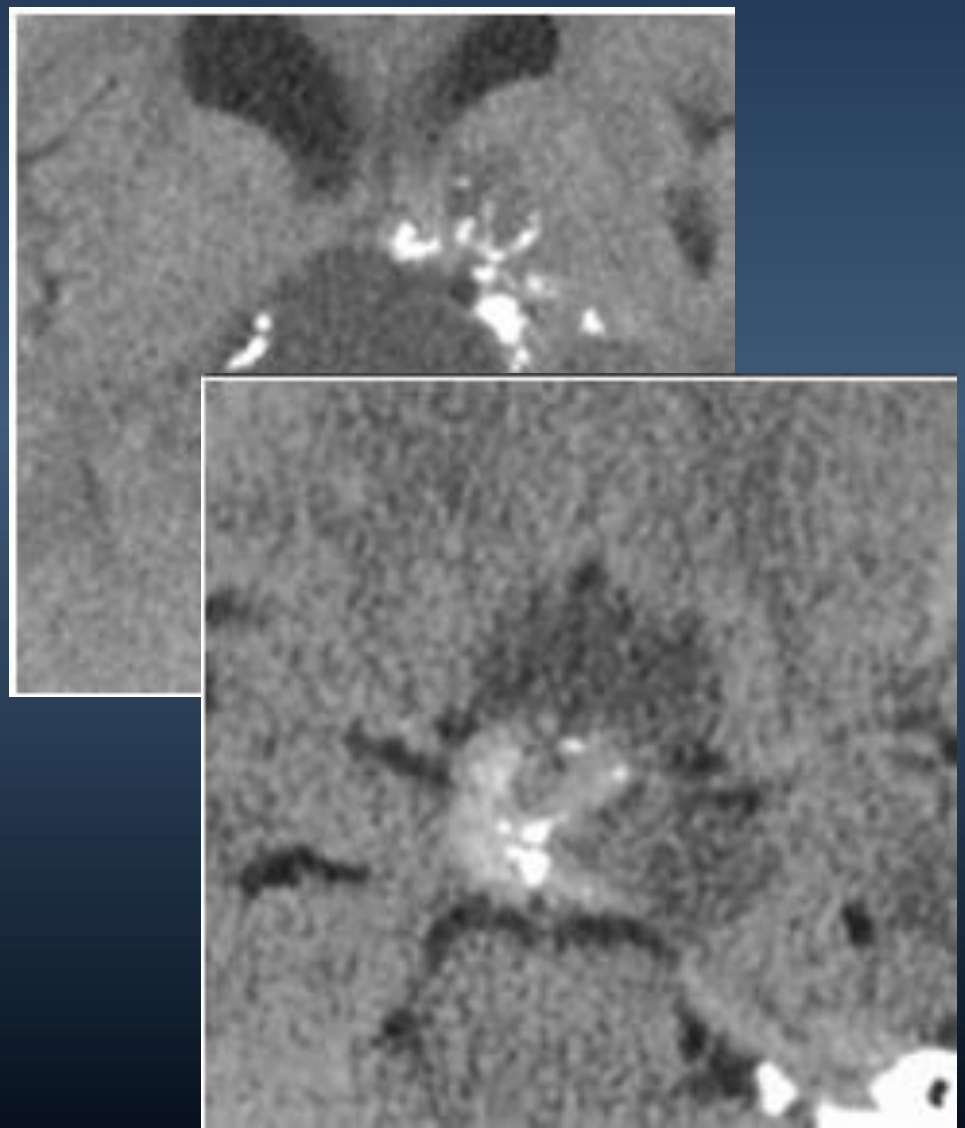
NECT scan

Adamantinomatous

- 90% Ca++ (rim)
- 90% Cystic
- May enlarge sella

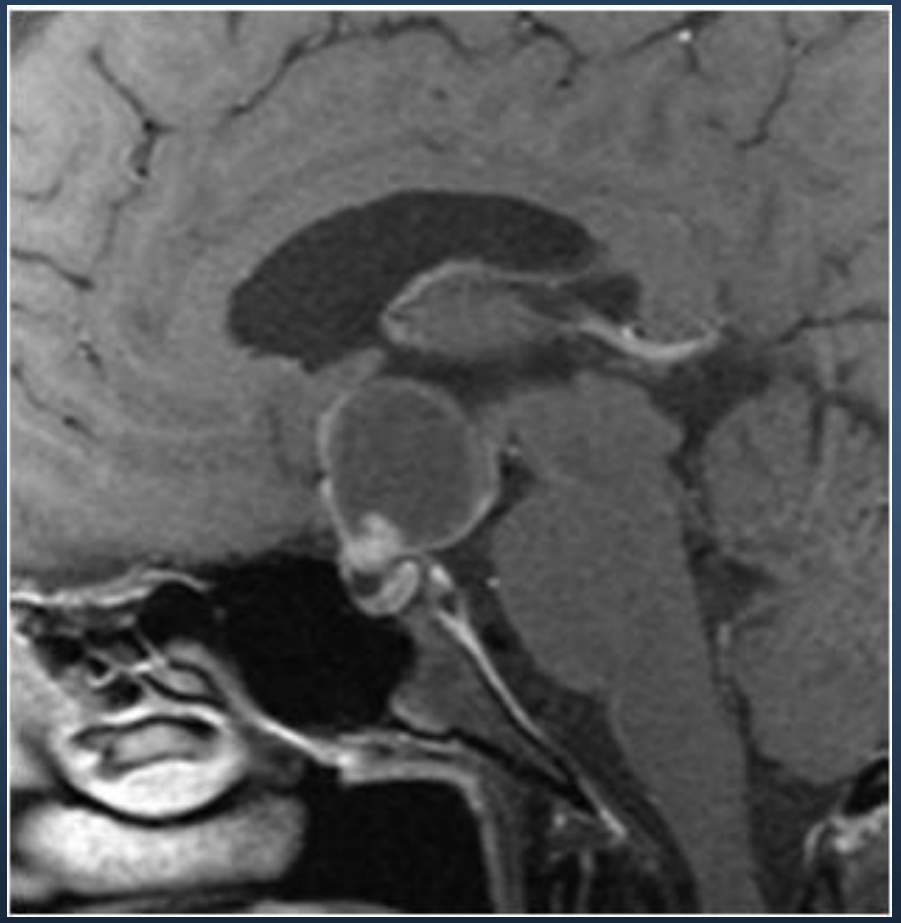
Papillary type

- 50% Ca++
- Majority solid

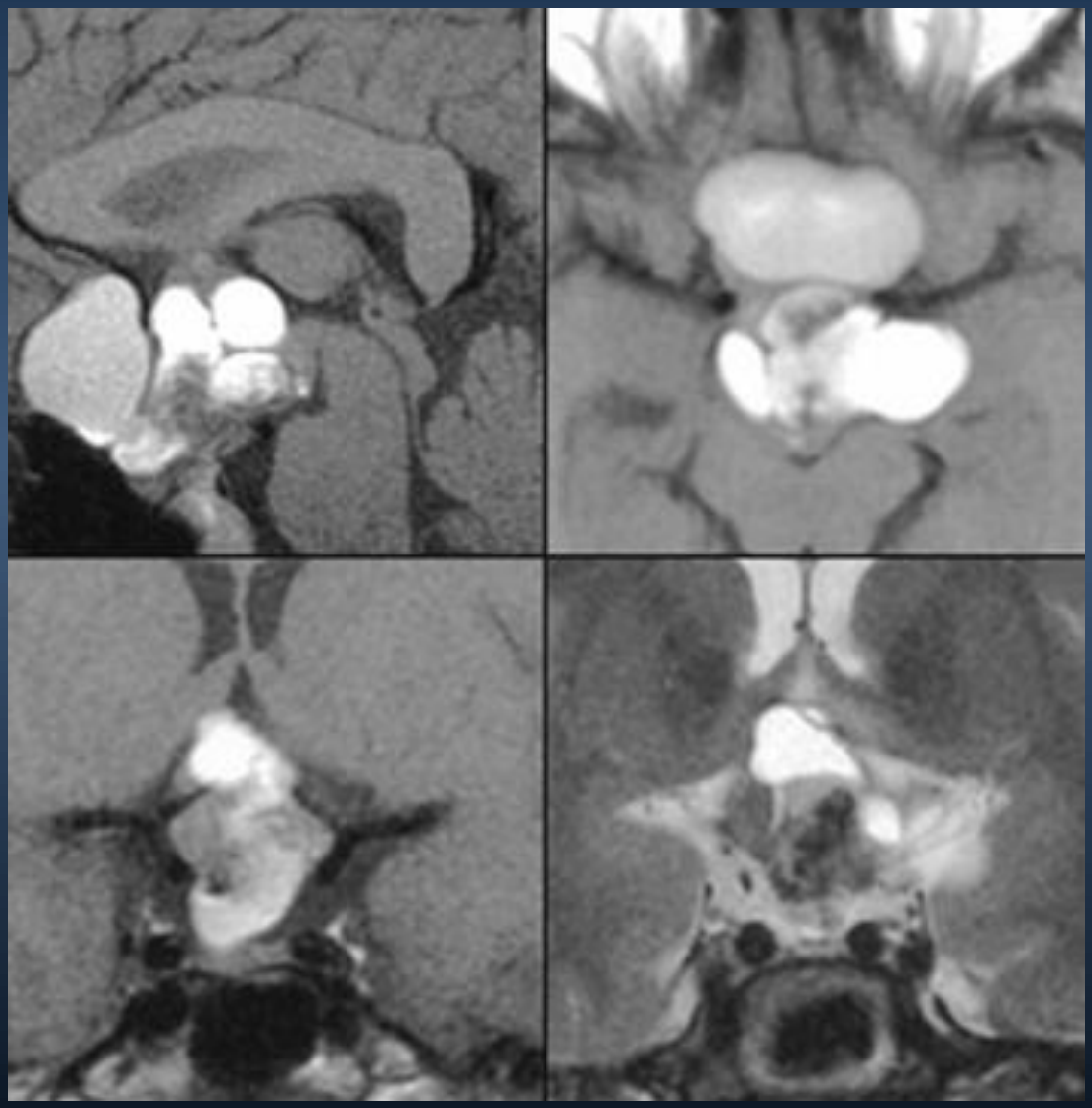


Craniopharyngioma: MR

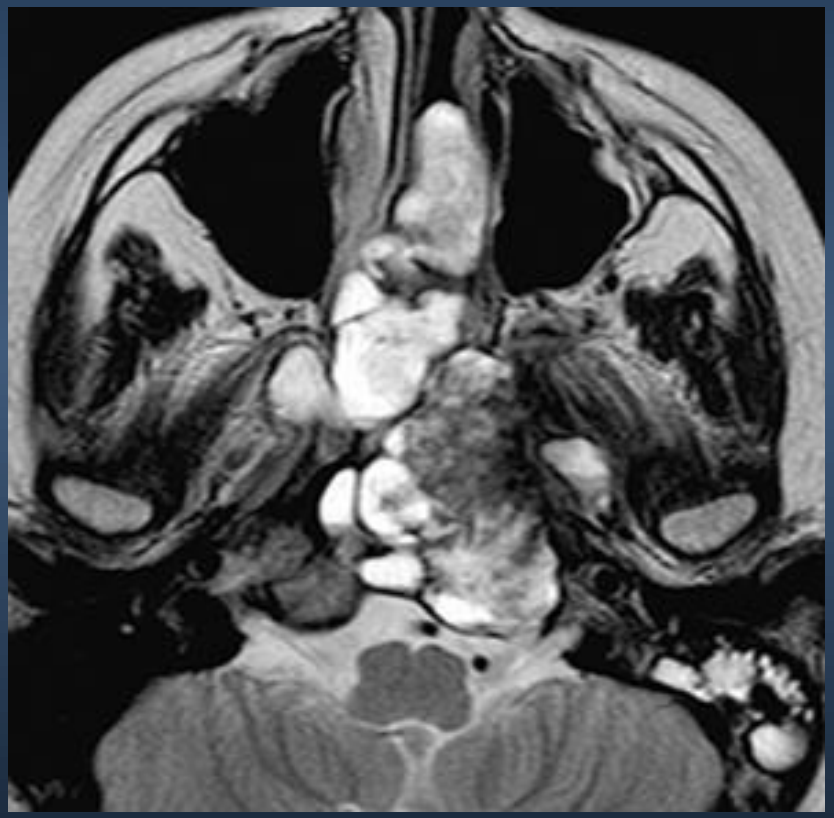
- Variable signal
- Often heterogeneous
- Ca++ difficult to detect
- Nodular & rim enhancement
- Occasionally optic tract hyperintensity on T2WI – mass effect

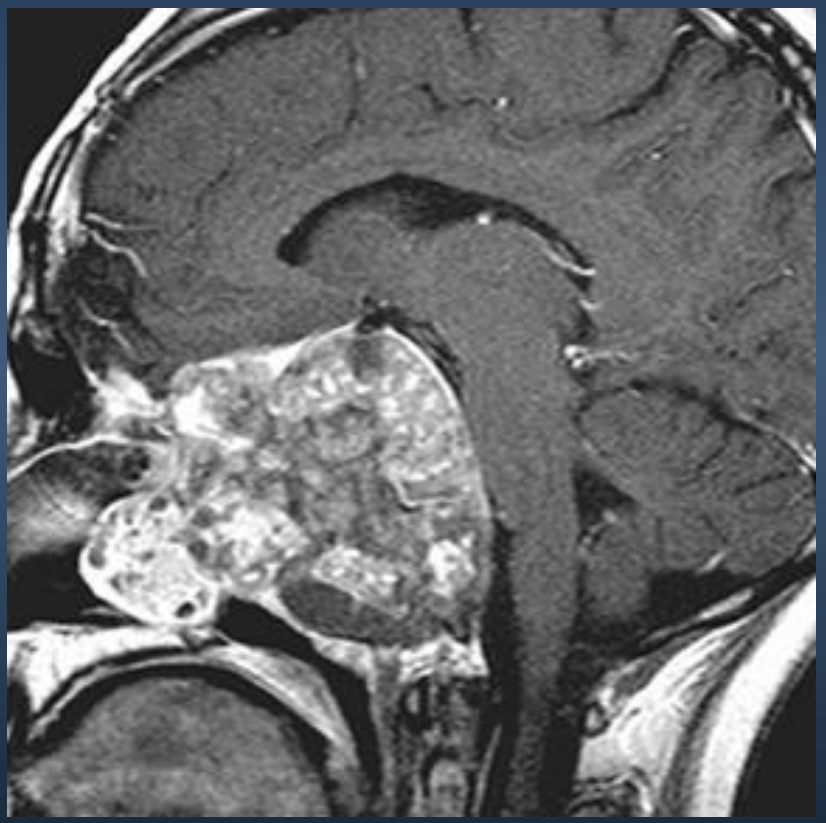


Craniopharyngioma: MR

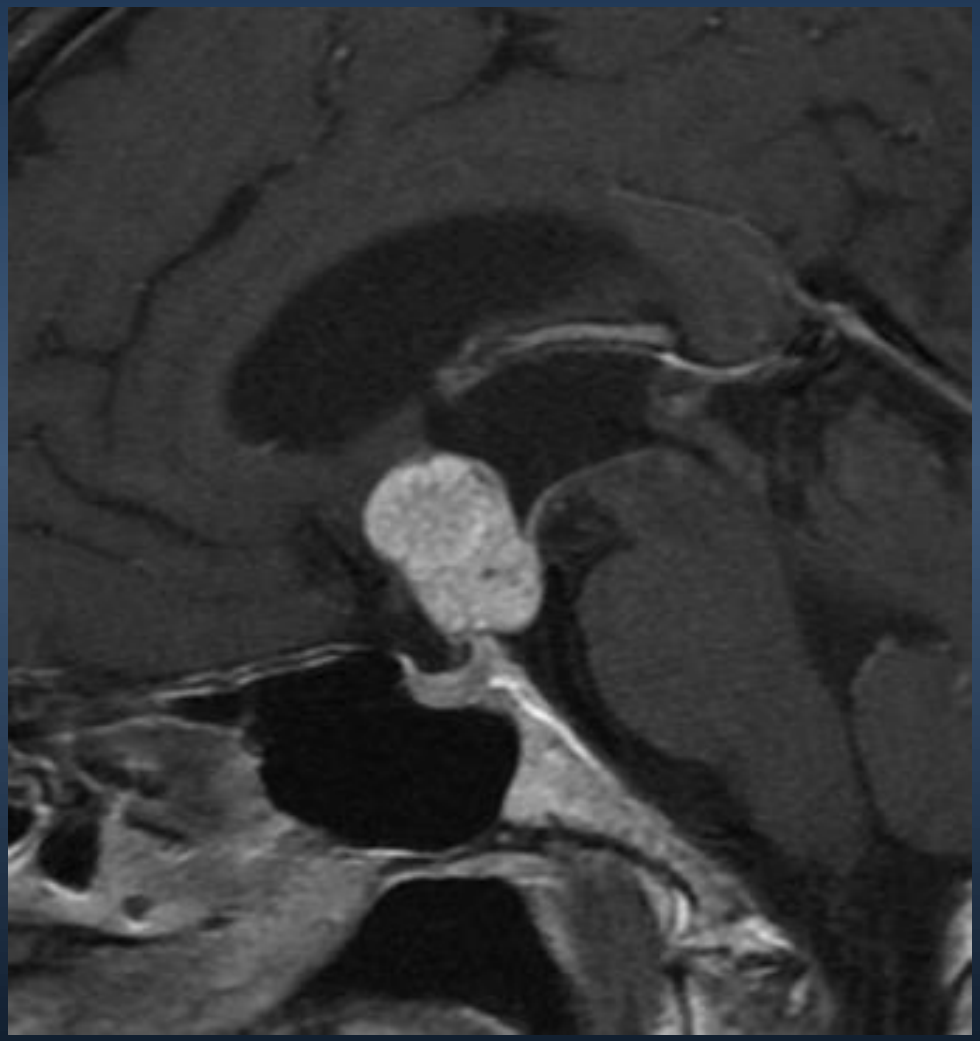


Craniopharyngioma: MR





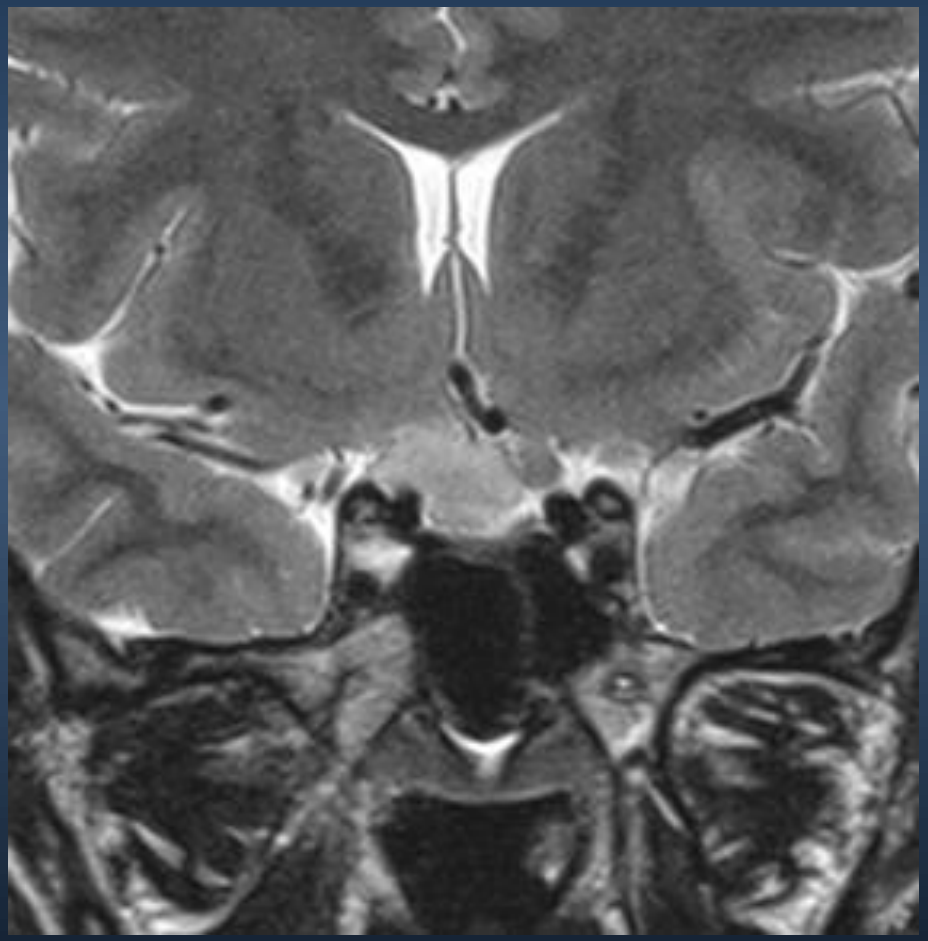
Craniopharyngioma: Papillary



Chiasmatic-hypothalamic glioma

Clinical

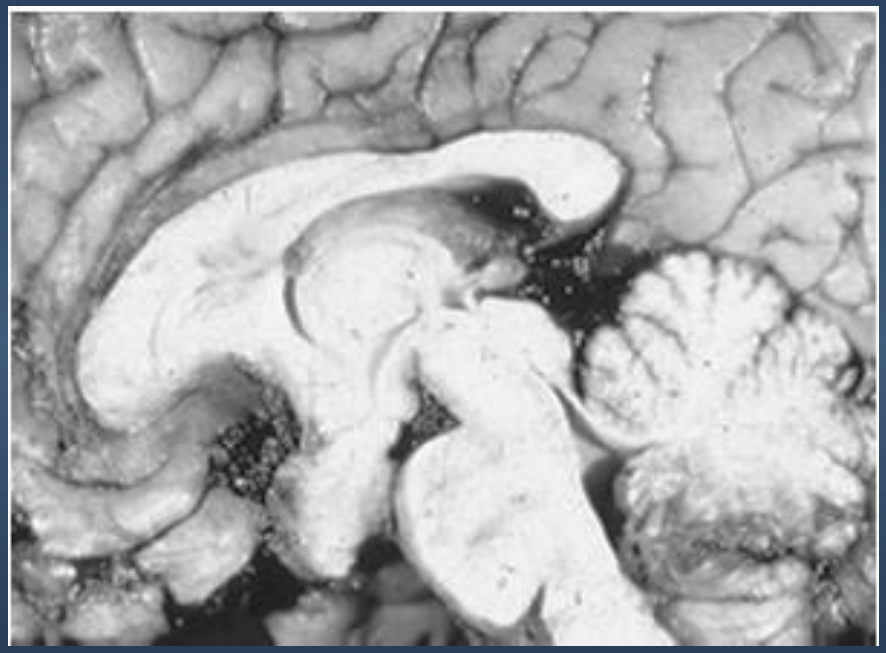
- Second most common suprasellar mass in children
- Presentation-often large
- H/A, visual, endocrine abnormalities common
- M = F
- 15-30% have NF-I



Chiasmatic-hypothalamic glioma

Pathology

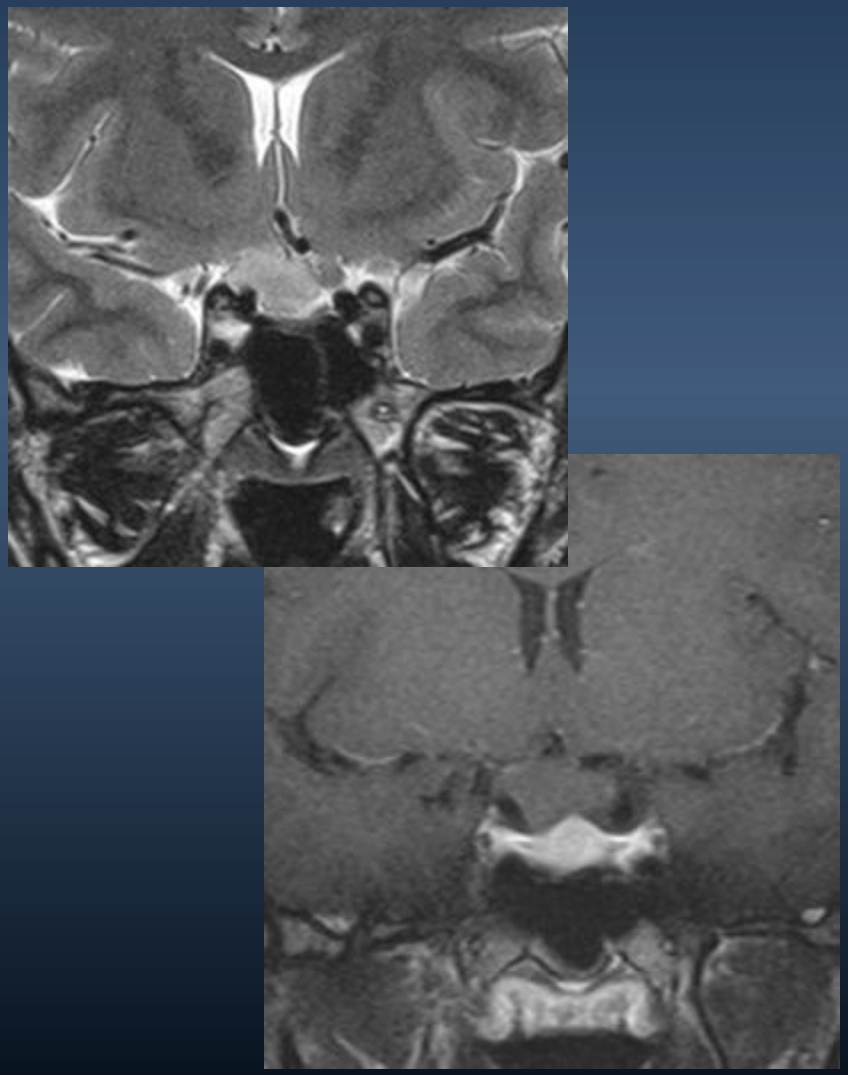
- 30% of all pilocytic astrocytomas occur in chiasm or hypothalamus
- 75% Pilocytic astrocytoma
- 25% Low-grade fibrillary
- Long-term survival (90% at 5 yrs, 75% at 10 yrs)



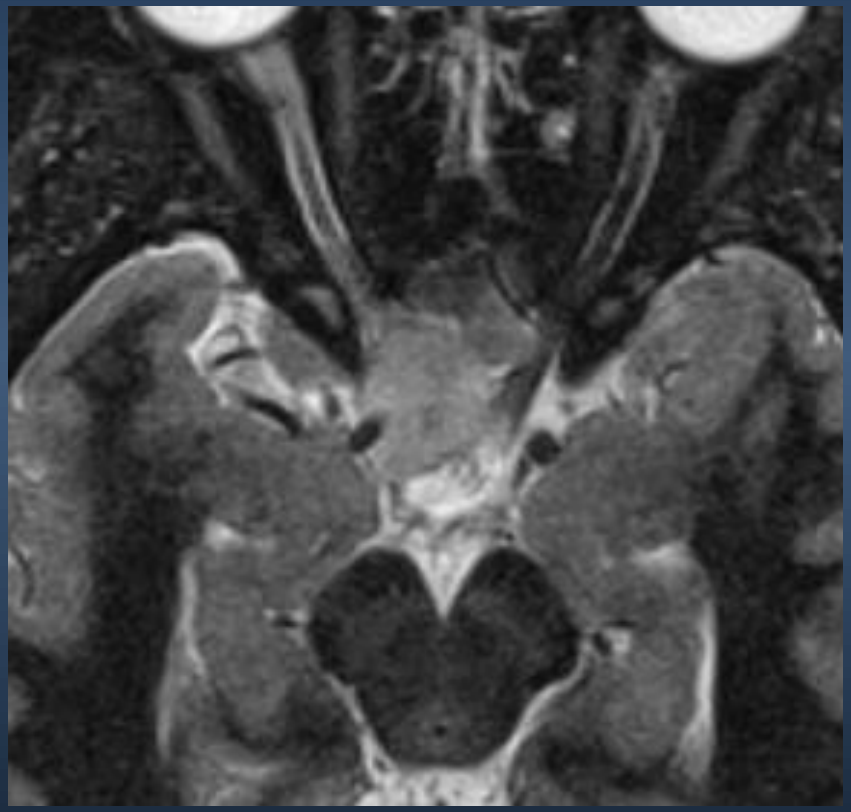
Chiasmatic-hypothalamic glioma

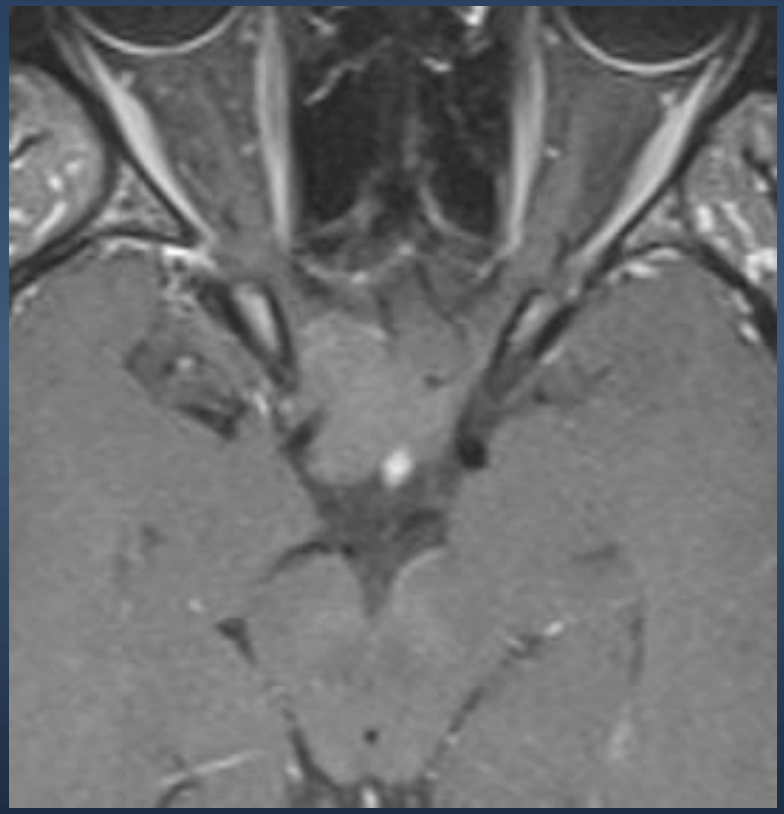
MR

- Variable signal
- Iso-, hypointense on T1WI
- Hyperintense on T2WI
- Variable enhancement
- Spread along optic tracts common



Chiasmatic-hypothalamic glioma

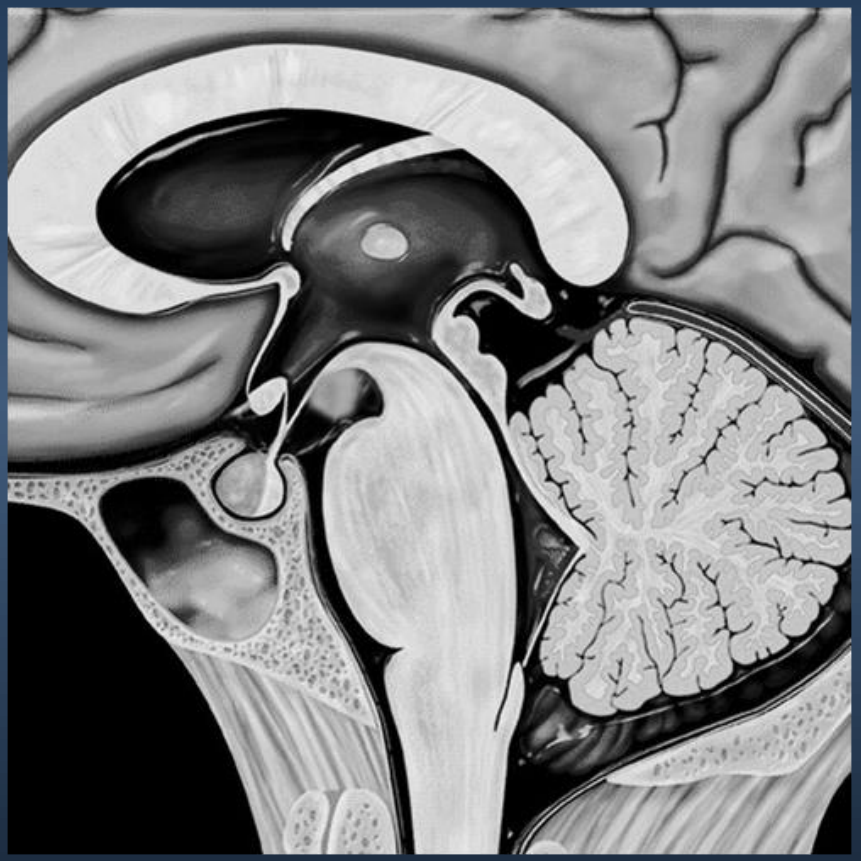




Hypothalamic Hamartoma

Clinical

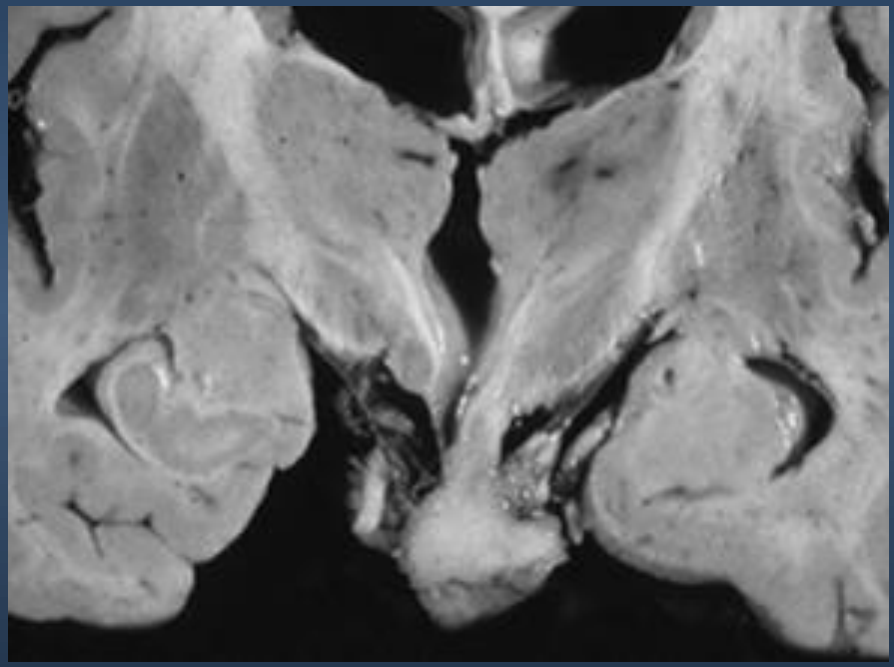
- Precocious puberty
- Usually < 2yrs
- Gelastic seizures
- M > F
- Pallister-Hall
- Facial anomalies
- Polydactyly
- Imperforate anus



Hypothalamic Hamartoma

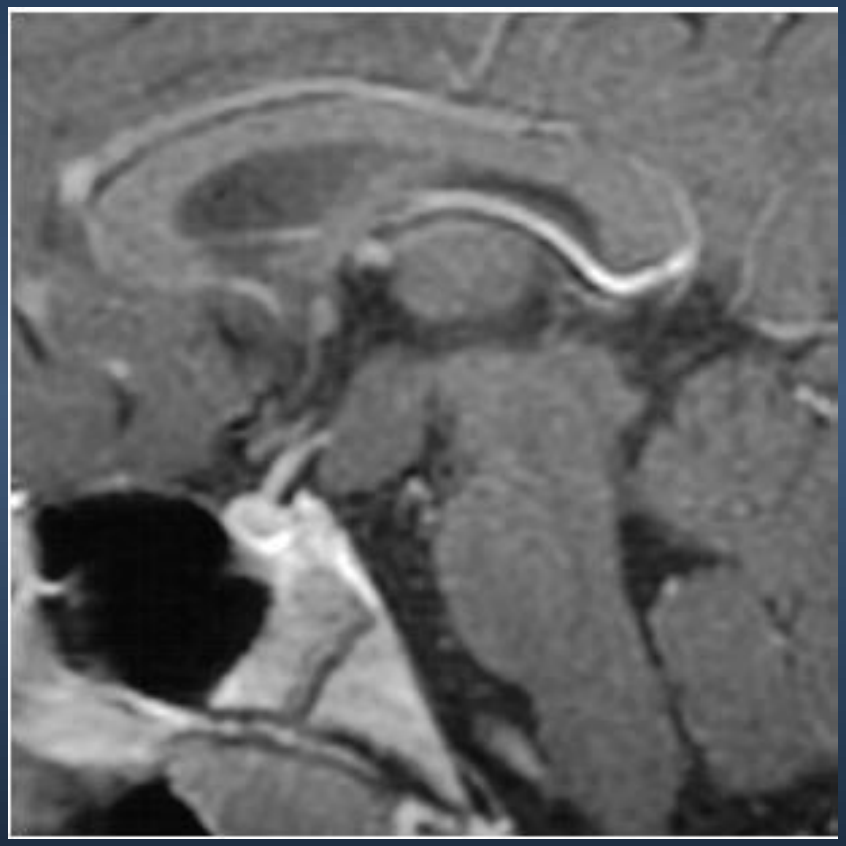
Pathology

- Hamartoma of tuber cinereum
- Congenital nonneoplastic heterotopia
- Between infundibular stalk, mamillary bodies

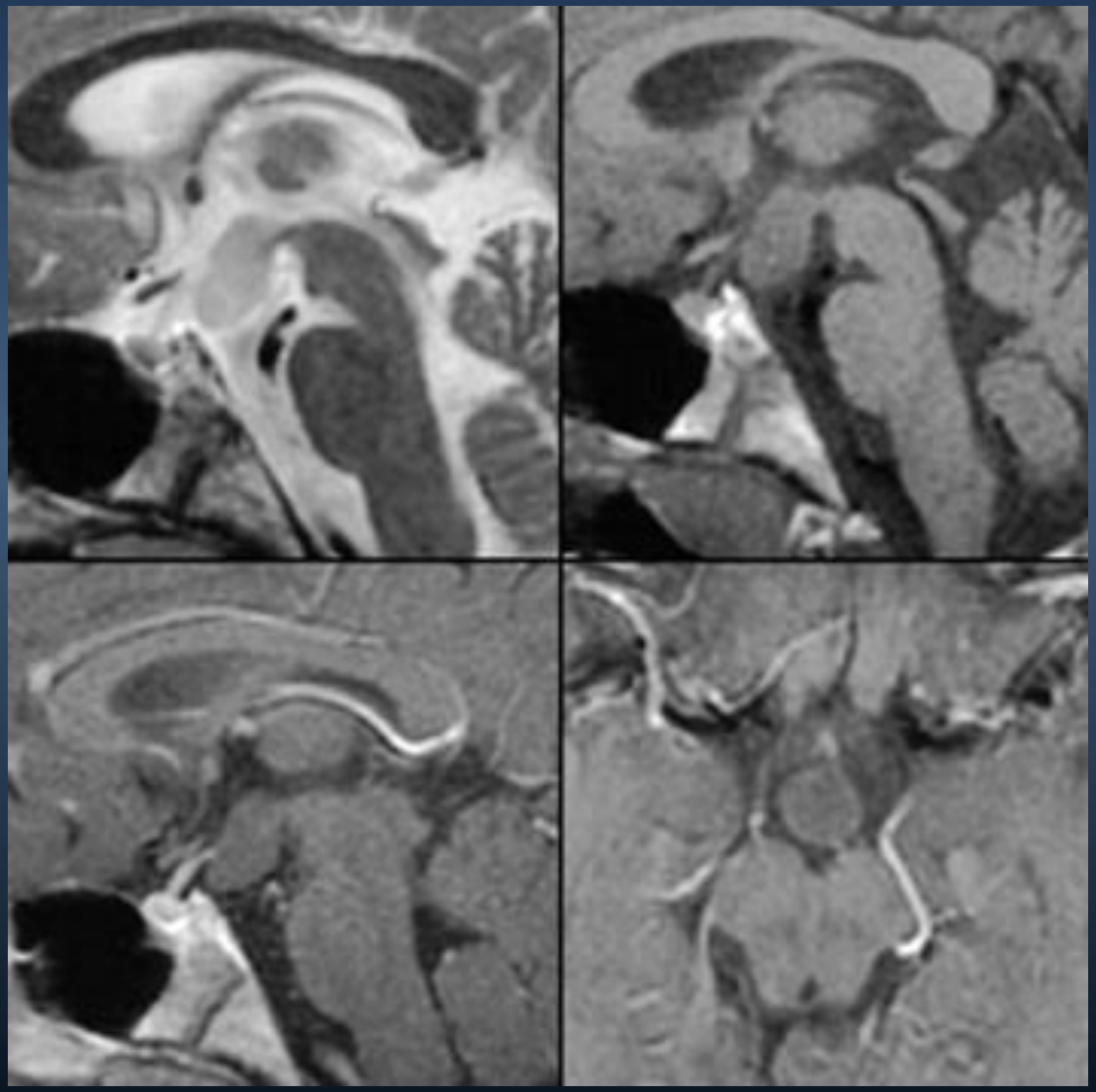


Hypothalamic Hamartoma : MR

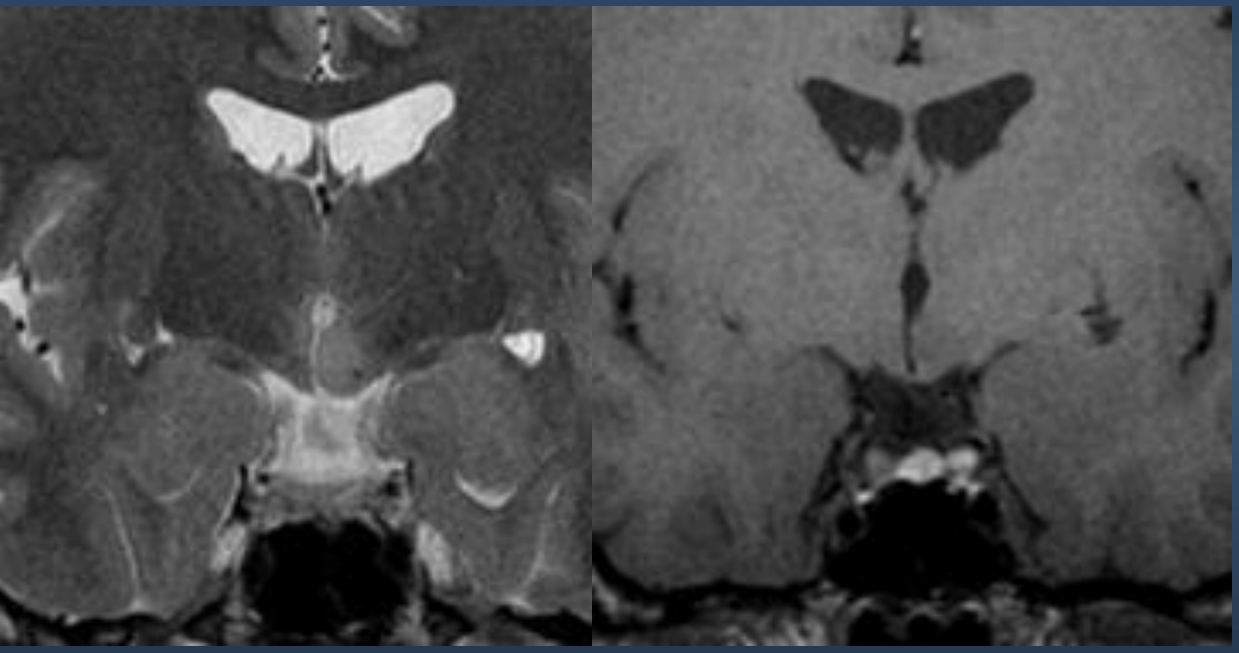
- Signal follows GM
- Isointense on T1WI
- May be slightly T2 hyperintense
- Pedunculated or sessile
- May project into 3rd ventricle
- Do not enhance

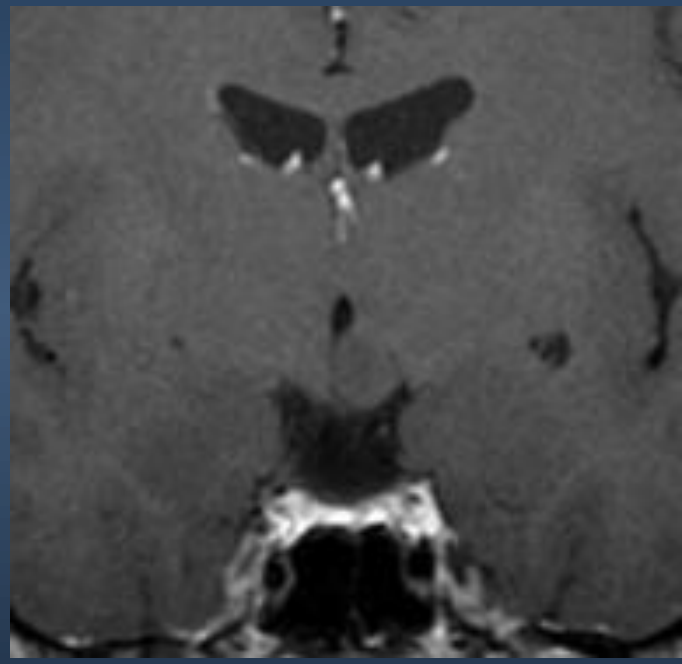


Hypothalamic Hamartoma

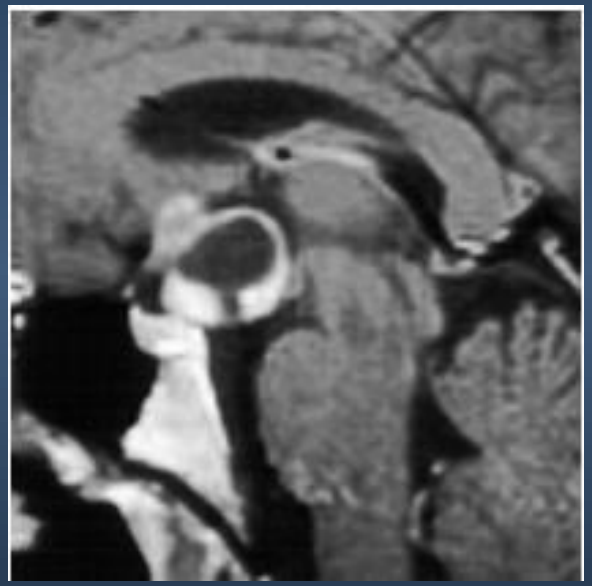


Hypothalamic Hamartoma



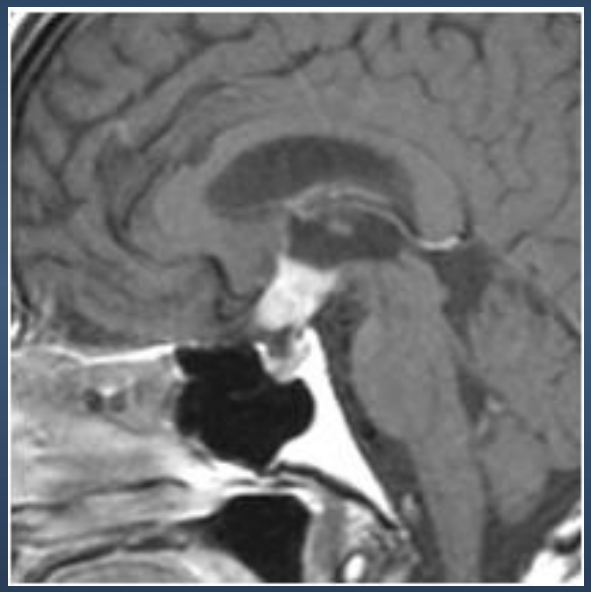


Suprasellar Mass: Child



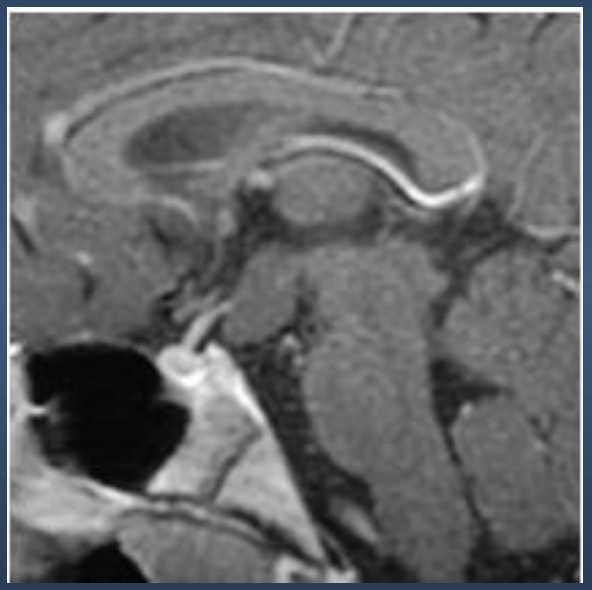
Cranio

- Complex mass
- 90% cystic
- 90% calcified



Astrocytoma

- Chiasm/Hypoth
- T2 hyperintense
- Variable C+



Hamartoma

- Hypothalamus
- GM signal
- No C+

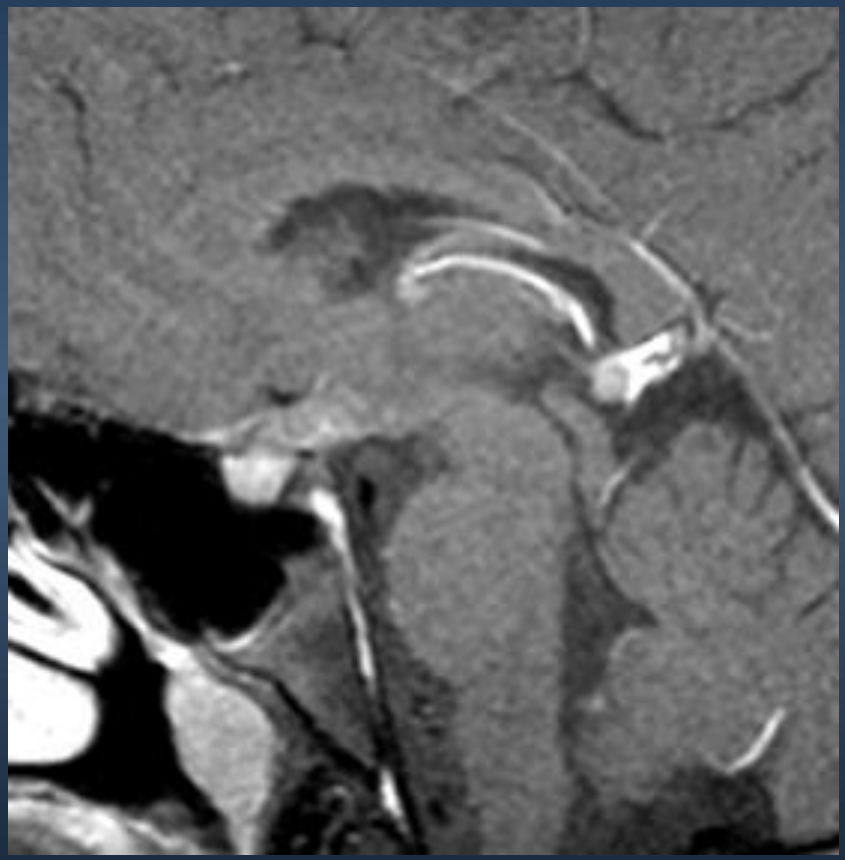
Infundibulum Differential Diagnosis

- Germinoma
- LCH
- Sarcoid
- Lymphoma, Metastasis
- Hypophysitis
- Pituicytoma

Germinoma

Pathology

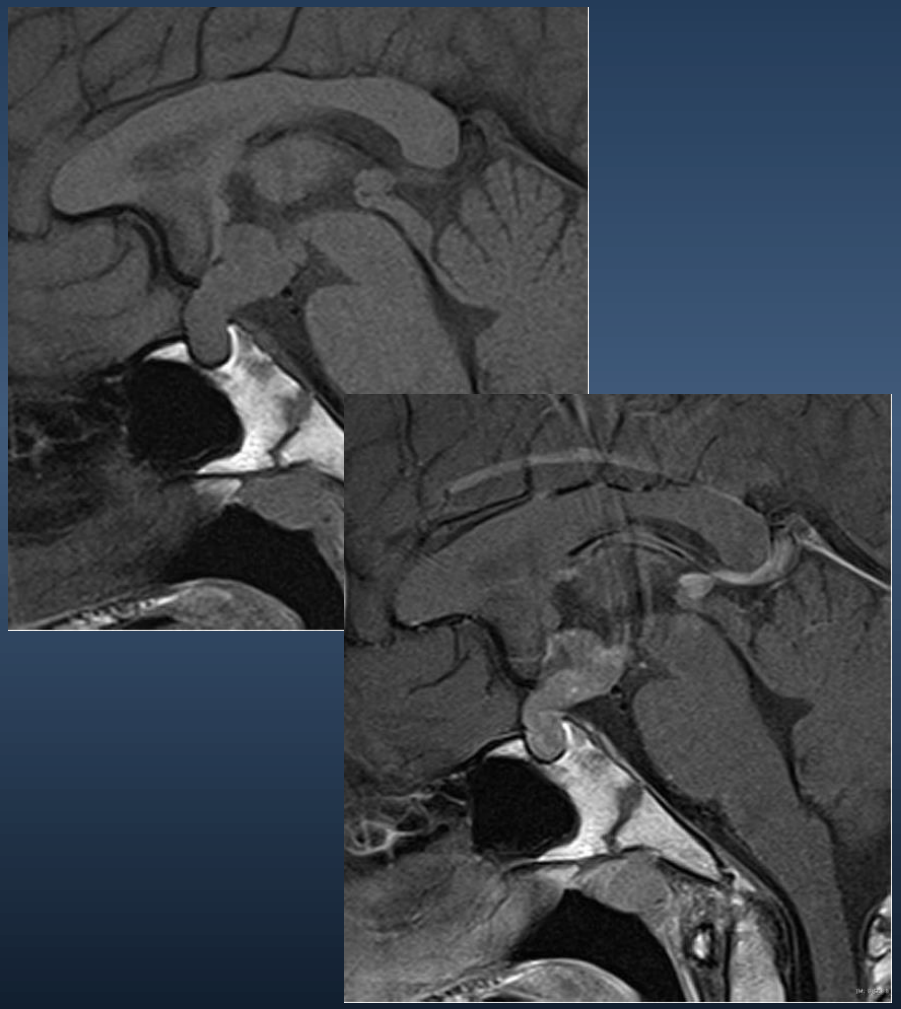
- Pineal most common
- Pineal + suprasellar 10%
- Germinoma 2/3 of GCT
- May be mixed GCT



Germinoma

Clinical

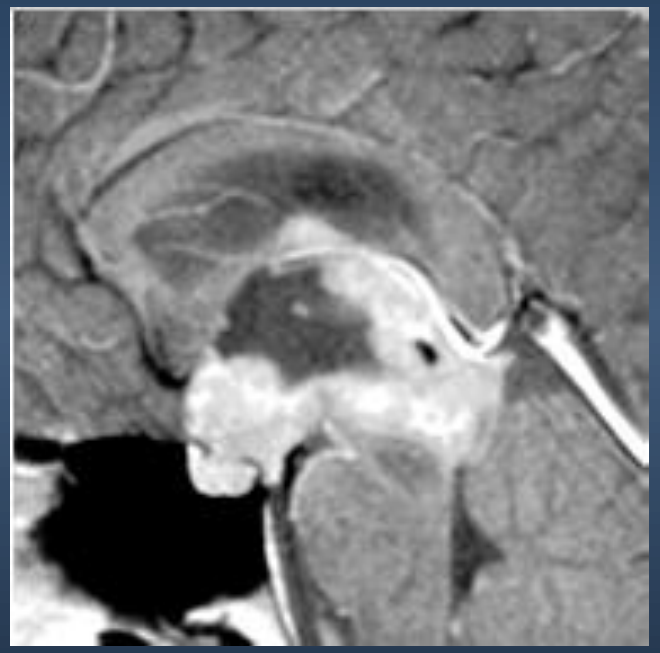
- Suprasellar region is second most common site
- M = F suprasellar
- 90% present < 20 yrs
- Endocrine dysfunction
  - Diabetes insipidus (most common)
  - Panhypopituitarism (common)
- Radiosensitive
- Up to 90% 10 survival



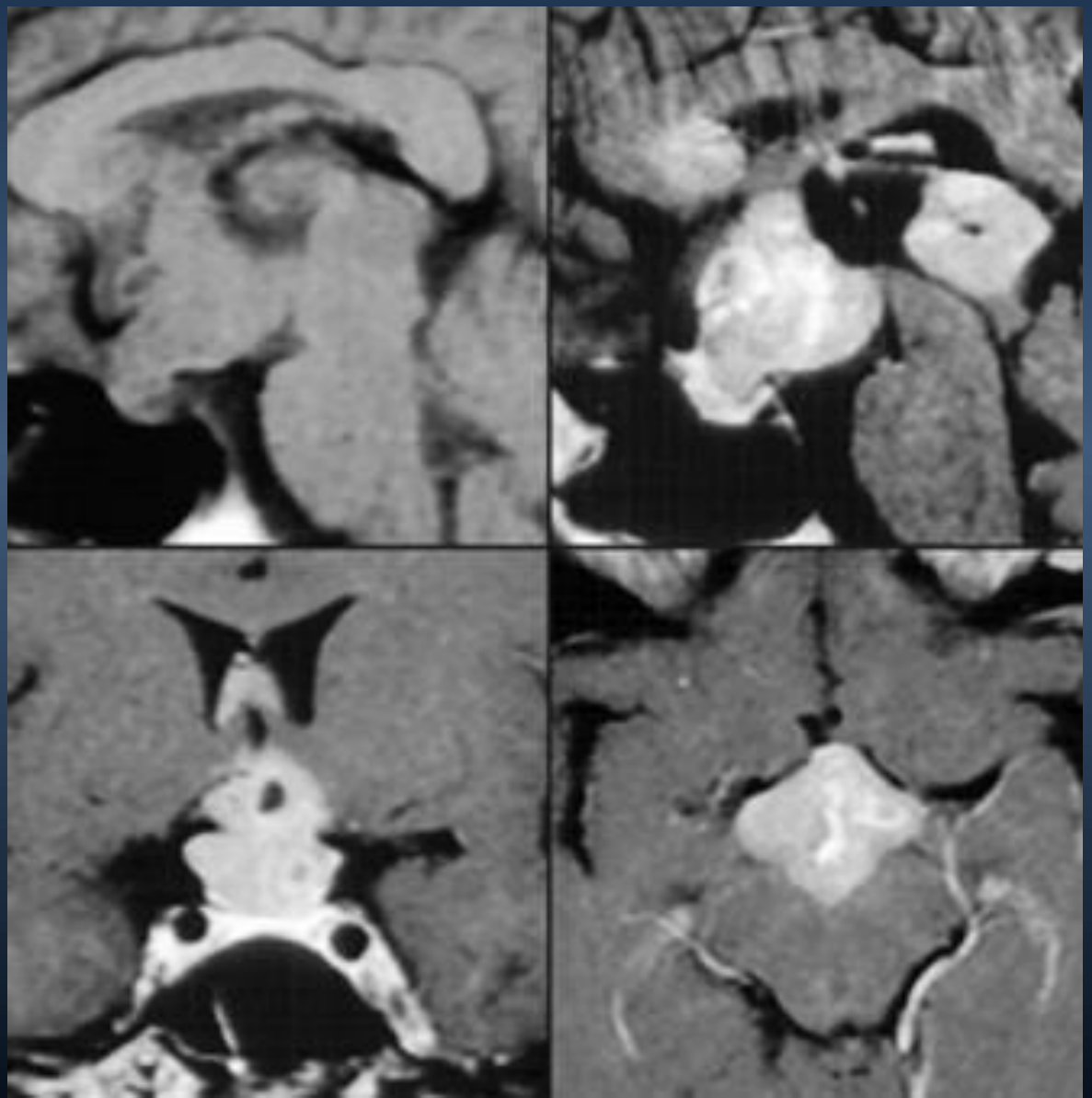
Germinoma: Imaging

CT & MR

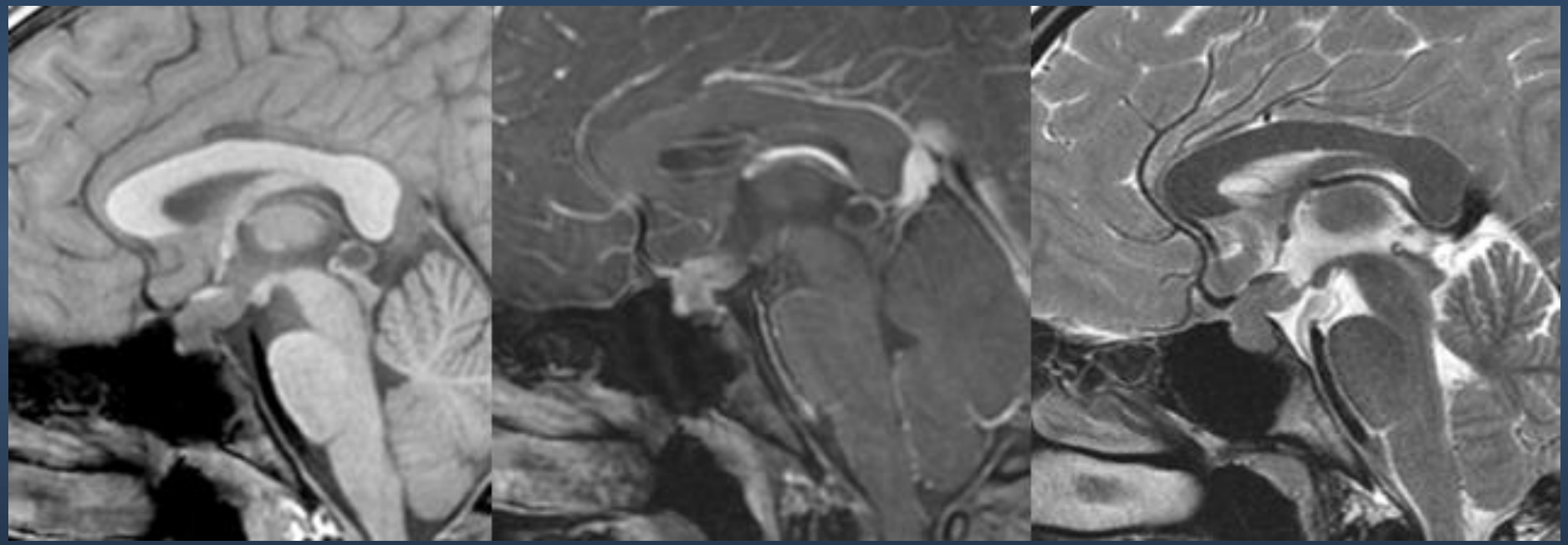
- Combined lesion typical but may affect only infundibular stalk
- May be hyperdense (CT)
- Isointense T1WI
- Hyper- to isointense T2WI
- Enhances homogeneously
- CSF dissemination common



Germinoma: MR



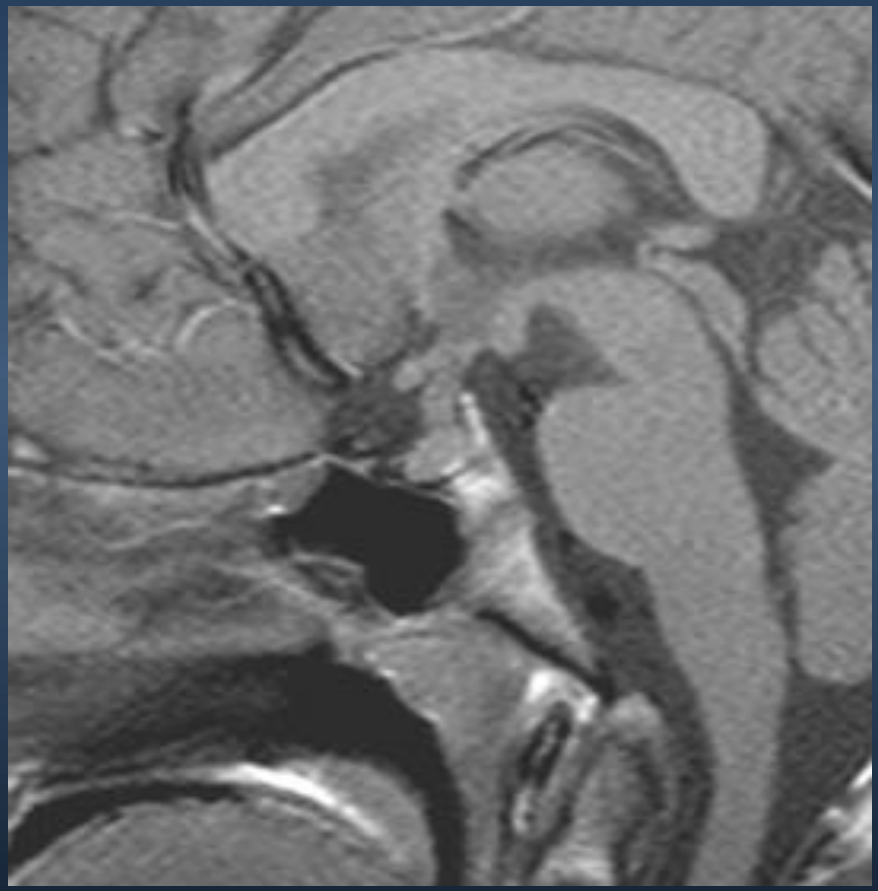
Germinoma: MR



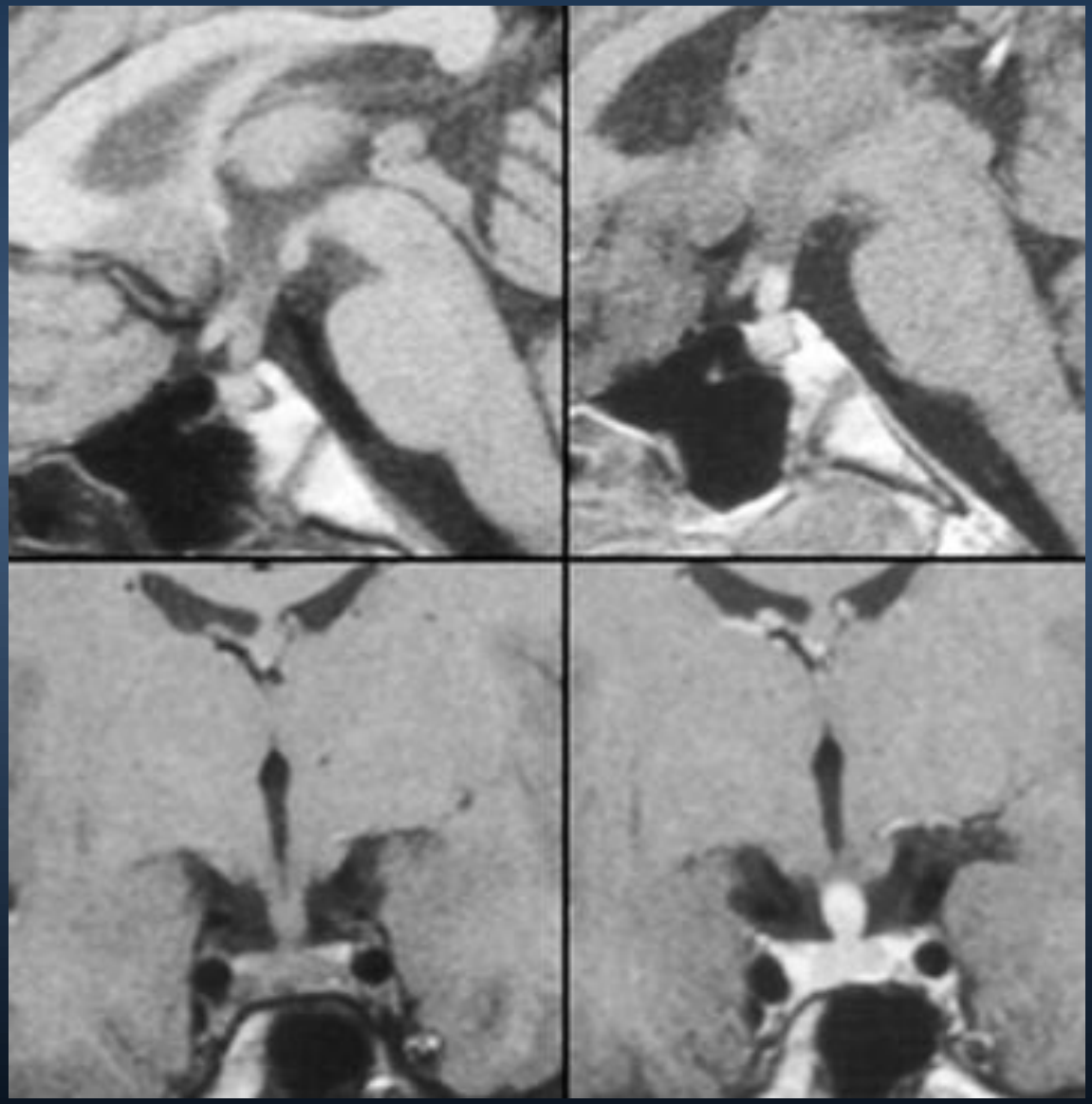
Langerhans Cell Histiocytosis

Clinical

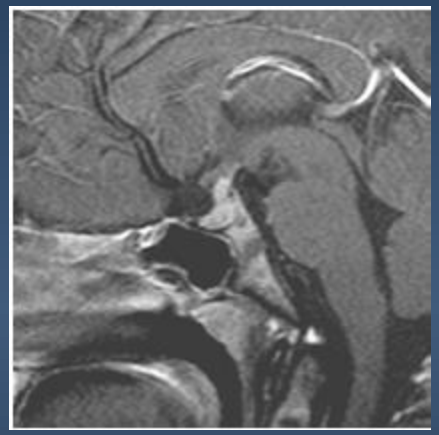
- First decade
- M > F
- Diabetes insipidus
- High signal of neurohypophysis is commonly absent
- Thickening of stalk



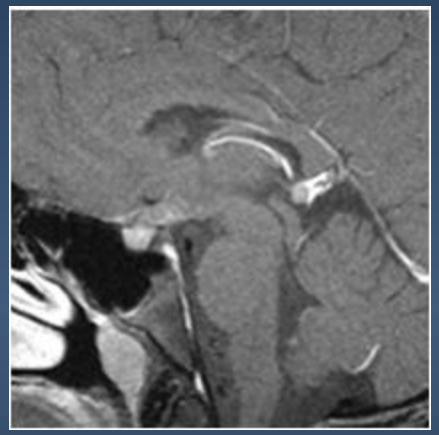
Langerhans Cell Histiocytosis



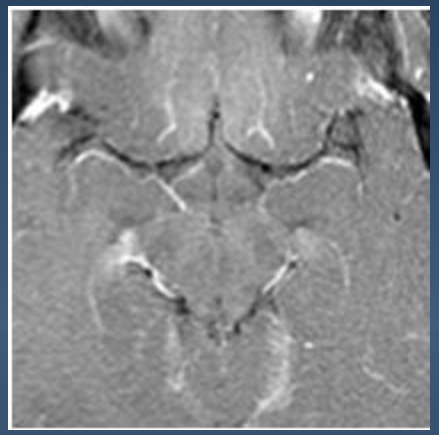
Infundibular Mass: Child



LCH
- Thickened Stalk
- “Bright spot” gone
- Enhancement



Germinoma
- Stalk +/- pineal
- T2 hyperintense
- CSF spread

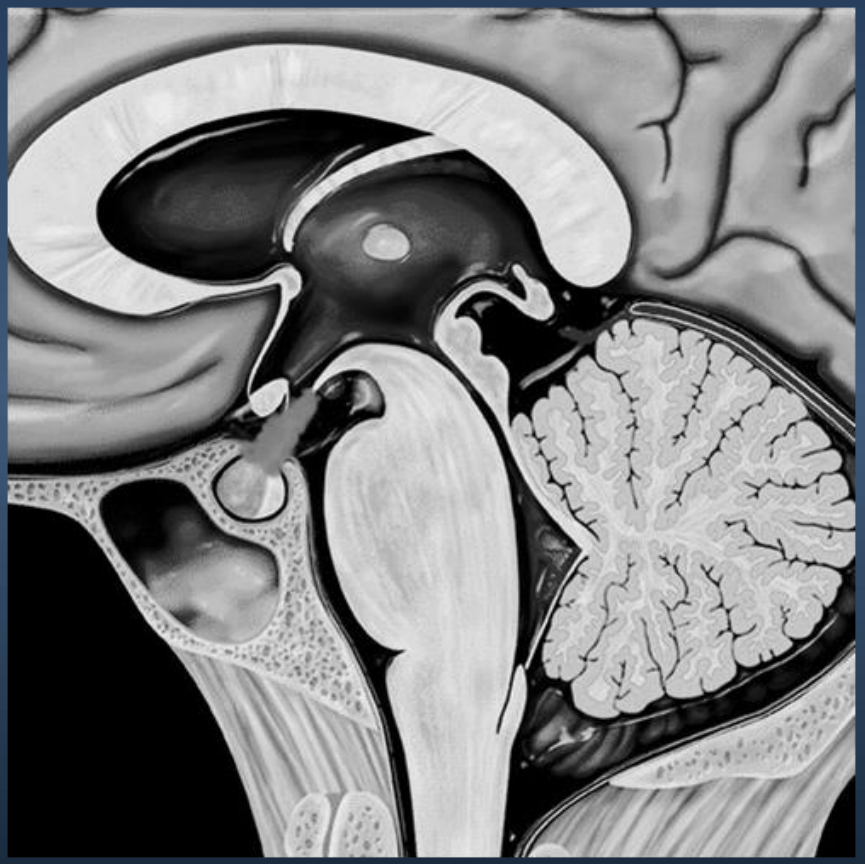


Meningitis
- Meningeal dz
- Diffuse
- Enhanceme

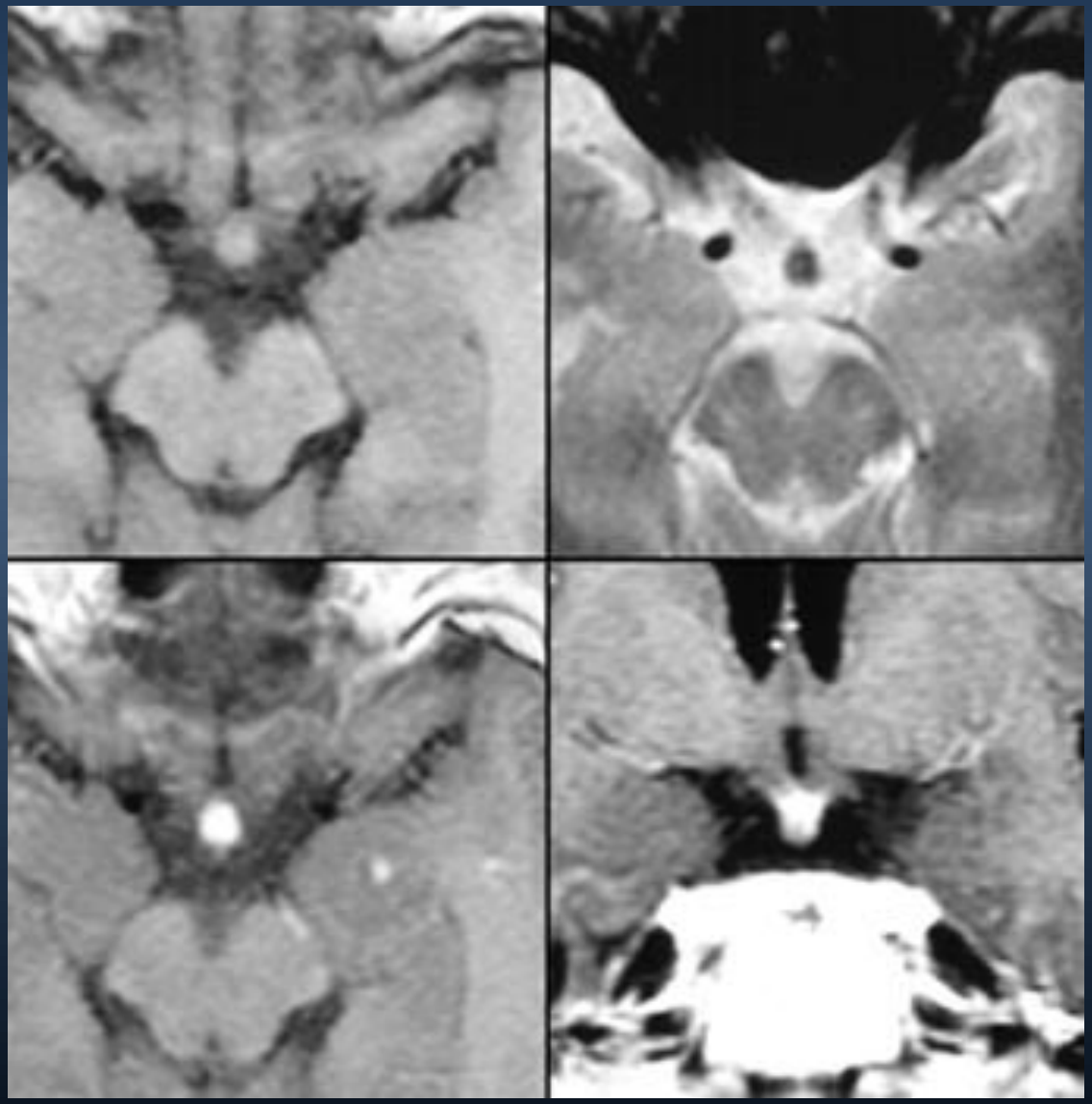
Sarcoid

Clinical

- Chronic, multisystem, inflammatory disease
- Noncaseating granulomas
- Neurologic findings 5%
- Diabetes insipidus or hormone deficiency
- Steroid responsive



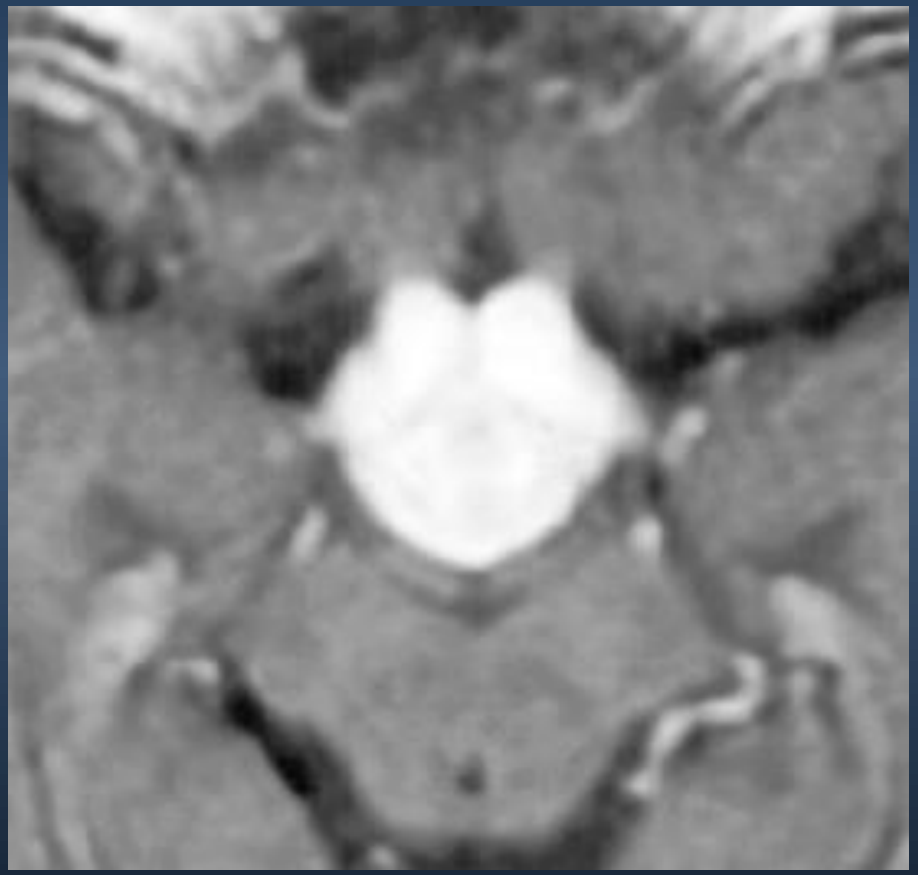
Sarcoid



Lymphoma

Clinical

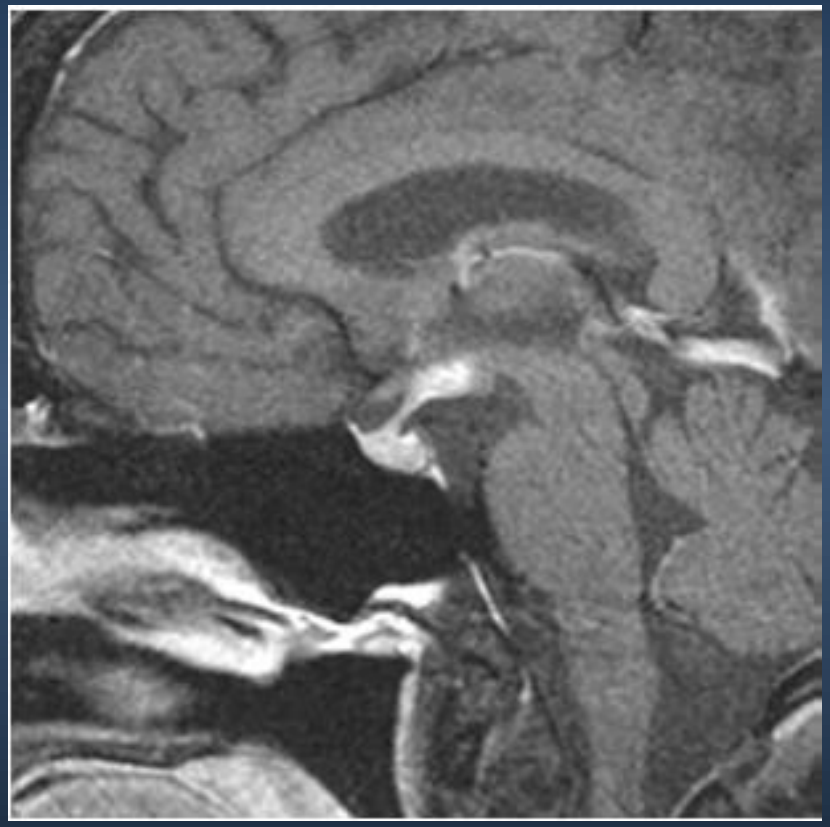
- NHL (B-cell)
- 90% supratentorial
- Pituitary gland, hypothalamus, stalk
- 6th-7th decade
- AIDS: 4th decade



Lymphoma

Imaging

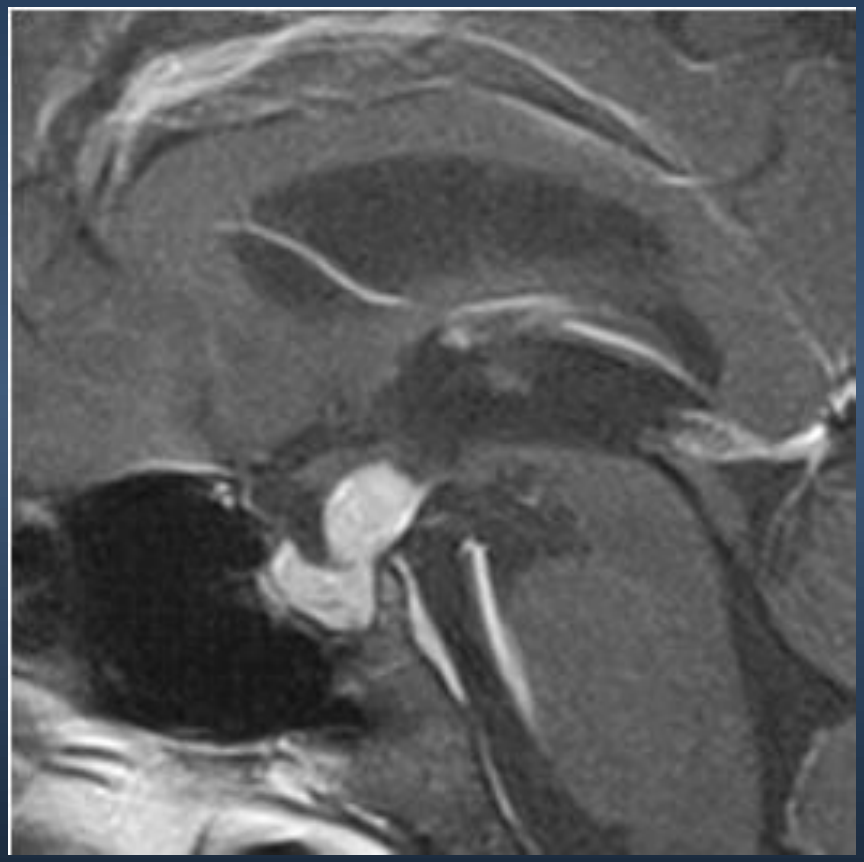
- Pituitary gland, hypothalamus, stalk
- Hyperdense on CT
- T1 Iso- to hypointense
- T2 hypointense
- Homogeneous enhancement



Lymphocytic hypophysitis

Clinical/Imaging

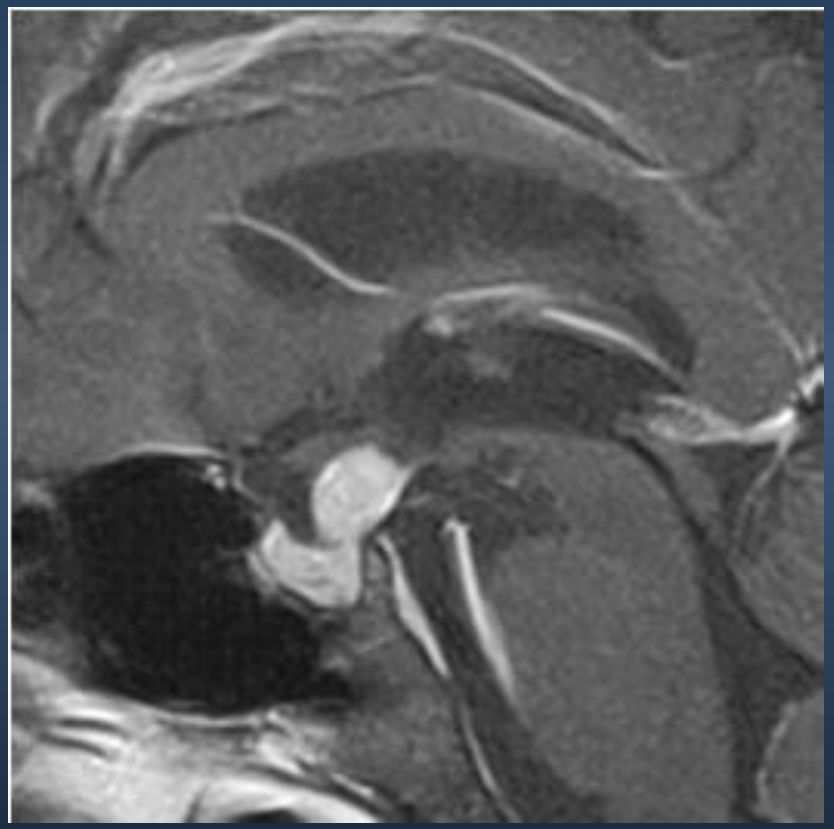
- Occurs during late PG or shortly after delivery
- F >>> M
- Pituitary insufficiency
- H/A & visual changes
- Amenorrhea or inability to lactate
- Diffuse enlargement of adenohypophysis
- May mimic hyperplasia or adenoma



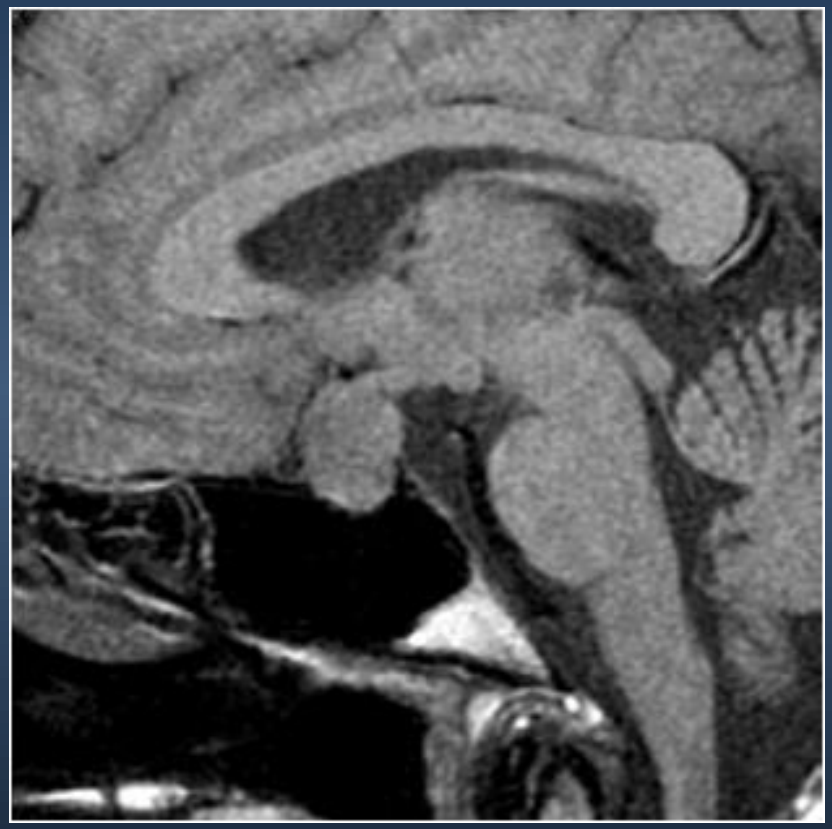
Lymphocytic hypophysitis

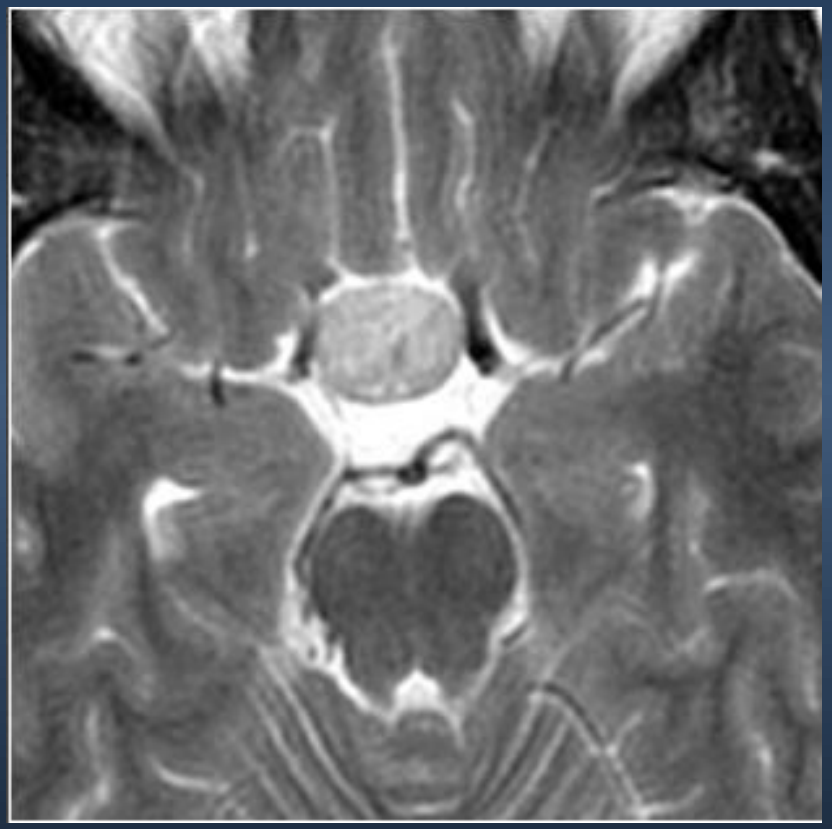
Pathology

- Diffuse infiltration of the adenohypophysis by lymphocytes and rare plasma cells
- ? Autoimmune
- Infundibuloneurohypophysitis
- Affects infundibulum & neurohypophysis
- Thickened pituitary stalk
- Diabetes insipidus

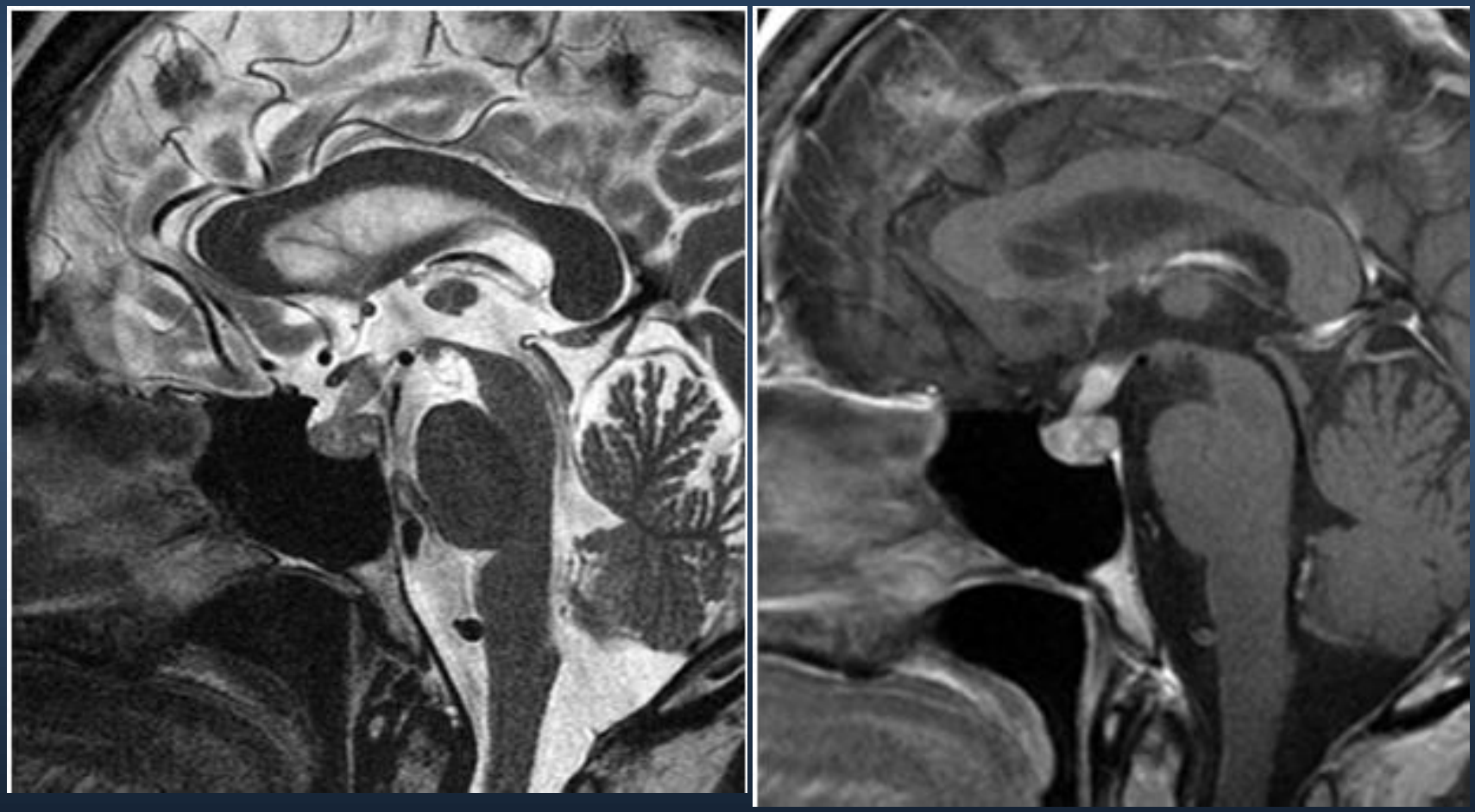


Lymphocytic hypophysitis

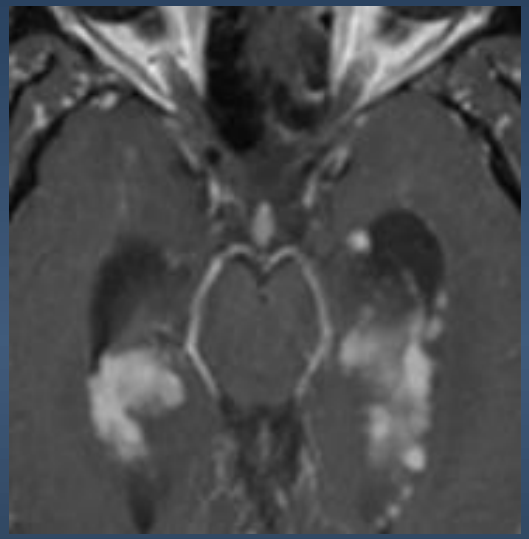




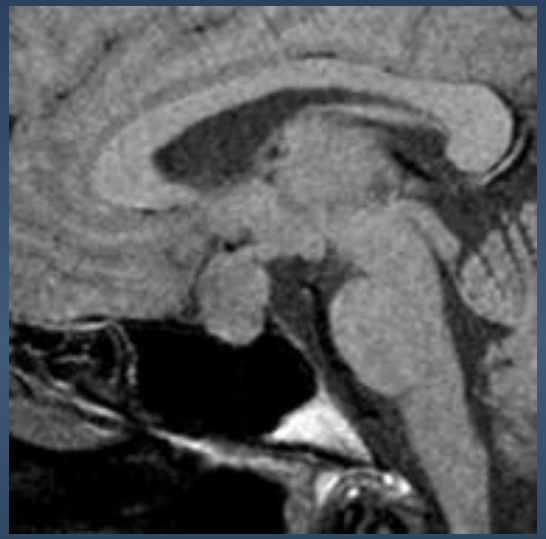
Metastasis:Infundibulum



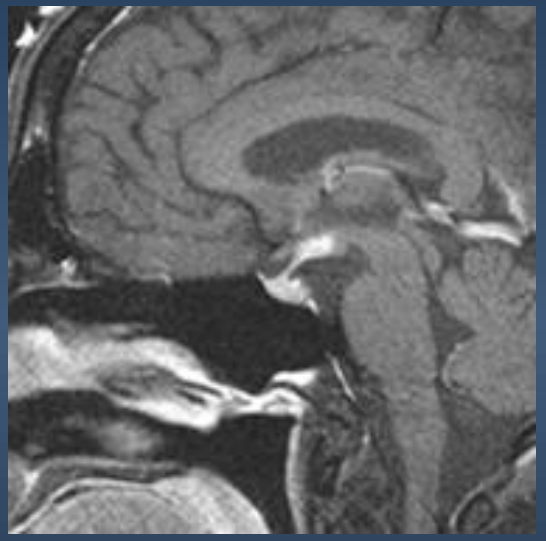
Infundibular Mass: Adult



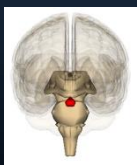
Sarcoid
- Systemic dz
- Thickened stalk
- Enhancement



Hypophysitis
- Clinical info
- Stalk or gland
- Enhancement



Lymphoma
- +/- Systemic dz
- Stalk or gland
- Enhancement



Presentation Summary

Intrasellar Mass

- Microadenoma, Rathke cleft cyst

Suprasellar Mass

- Craniopharyngioma, Macroadenoma, Meningioma, Aneurysm

Infundibular Lesion

- Germinoma, LCH
- Granulomatous disease, LH