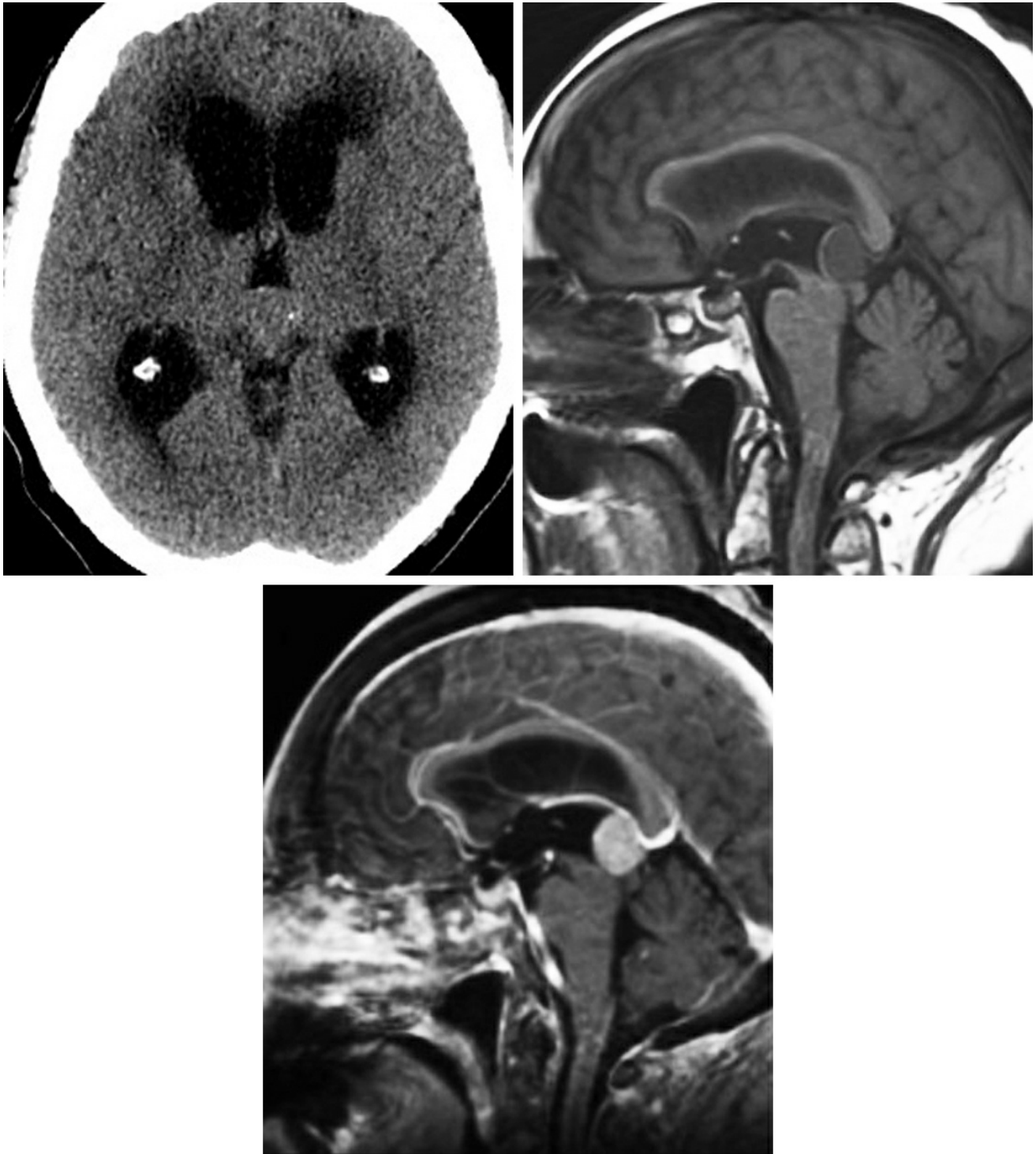




# Pineocytoma

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**Figure 1: (Top Left) A mass in the pineal region is causing obstructive hydrocephalus on this CT image. (Top Right) There is mass effect on the tectal plate without visible invasion on this sagittal T1-weighted image.**

(Bottom) Avid enhancement on sagittal postcontrast T1-weighted imaging is typical of most pineal region tumors, including this pineocytoma, regardless of grade.

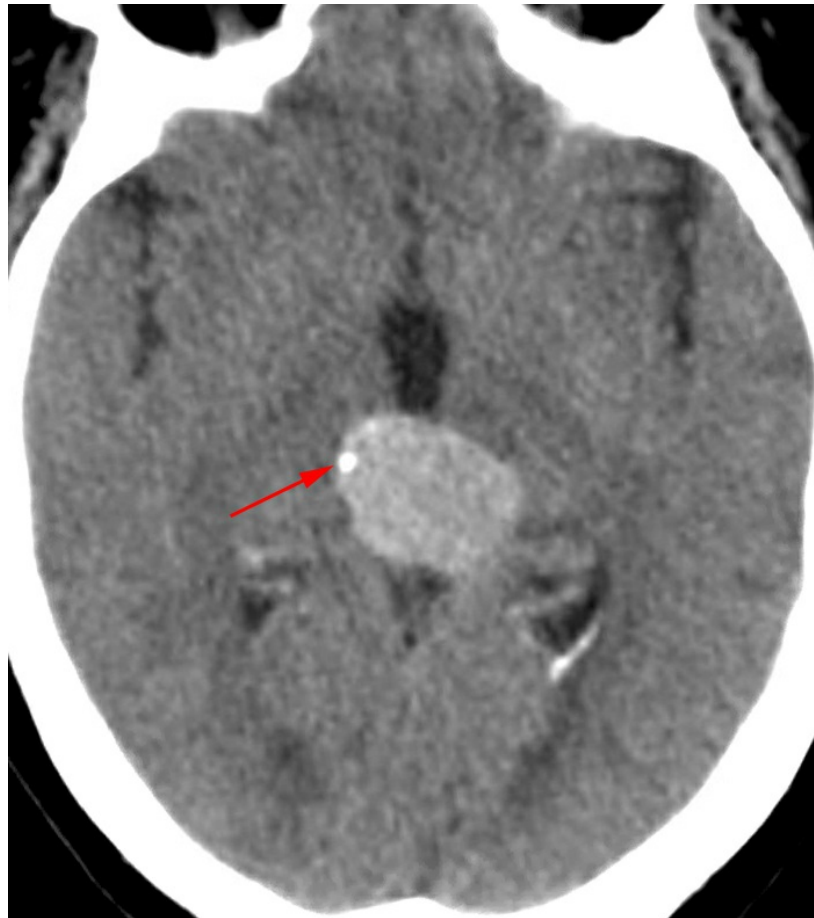


Figure 2: This circumscribed pineocytoma demonstrates peripheral calcifications (arrow) and homogeneous enhancement on postcontrast CT imaging. The lesion is more circumscribed and less infiltrative in appearance than would be more typical for other pineal region tumors.

## BASIC DESCRIPTION

- Slow-growing pineal parenchymal tumor

## PATHOLOGY

- WHO grade I or II
- Arises from pinealocytes or pinealocyte precursors
- Well-differentiated tumor without mitoses or necrosis
- Small, uniform cells arranged in sheets with intervening septae are typical microscopic features

- Mass effect on adjacent structures without invasion

## CLINICAL FEATURES

- Affects all ages (mean, 35–40 years)
- No gender predilection
- Commonly presents with signs/symptoms of increased intracranial pressure secondary to third and lateral ventricular obstructive hydrocephalus
  - Headache, nausea, vomiting, and altered mental status
  - Parinaud syndrome (upgaze palsy)
- Treatment: surgical resection; cerebrospinal fluid (CSF) shunts for hydrocephalus
- Prognosis: better prognosis than for [pineoblastoma](#); 5-year survival, 85% to 100%

## IMAGING FEATURES

- General
  - Peripherally calcified, well-circumscribed pineal region mass
  - Usually smaller than [pineoblastomas](#) (<3 cm), less invasion of adjacent parenchyma
  - Calcification and cysts are often present
  - ±Obstructive hydrocephalus due to compression at the cerebral aqueduct
  - Rare intraventricular extension, CSF dissemination, or parenchymal invasion
- CT
  - Well-circumscribed, isodense to hypodense pineal mass
  - ±Peripheral calcification
  - Moderate enhancement on contrast-enhanced CT imaging
- MRI
  - T1WI: hypointense to isointense

- T2WI: hyperintense
- FLAIR: hyperintense
- T2\*GRE/SWI/GRE: black signal blooming in foci of calcification at the periphery of the tumor
- T1WI+C: variable enhancement

## IMAGING RECOMMENDATIONS

- MRI without and with intravenous contrast, CT imaging to detect calcification

For more information, please see the corresponding chapter in [Radiopaedia](#).

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