62 y/o woman with new seizures.

Biju Gopalakrishnan, MD
Leo Wolansky, MD
MRI T1-Gd
Axial & Coronal
MRI T1-Gd (Sagittal)
Diffusion-weighted MRI
B1000 & ADC
Cerebral Abscess
MRI T1-Gd

Intense, smooth enhancement is characteristic
MRI T1-Gd

Intense, smooth enhancement

Fronto-basal location common due to sinonasal entry point of infection
Non-contrast CT (right) displays bone remodeling.
CT (right) displays bone remodeling. MRI (left) better displays the abnormal cerebral tissue.
Diffusion-weighted MRI

B1000 (left) shows marked hyperintensity
ADC (right) confirms diffusion restriction

typical of pyogenic abscess
Cerebral Abscess

* h/o craniofacial trauma > 30 years earlier
* Treated w/ steroids & broad spectrum antibiotics
MRI Features of Abscess

- Ring enhancement & edema
- Peripheral side of ring is typically thicker due to more vascularity
- Lesion “points” toward ventricle & can rupture into it with rapid clinical deterioration
- Rim can be mildly hyperintense on non-Gd T1
- Purulent contents often isointense on non-Gd T1
- Purulent contents display marked diffusion restriction
Common causes of Ring enhancing lesions

- Metastasis
- Cerebral abscess
- Primary brain tumor
- Demyelination w/ inflammation
- Tuberculoma
- Toxoplamosis
- Neurocysticercosis
- Subacute lacunar infarct
Treatment of Cerebral abscess

- Medical:
  - Antibiotics
  - Antiedema measures
  - Anticonvulsants

- Neurosurgical:
  - Excision
  - Aspiration
References

• Brain abscess. Saez-Llorens X et al; Handb Clin Neurol. 2013;112:1127-34
• Gopalakrishnan B, Wolansky L. Cerebral Abscess. Radiology Online. (2021)