77-year-old male with a history of hypertension and depression presenting with cognitive decline and decreased concentration

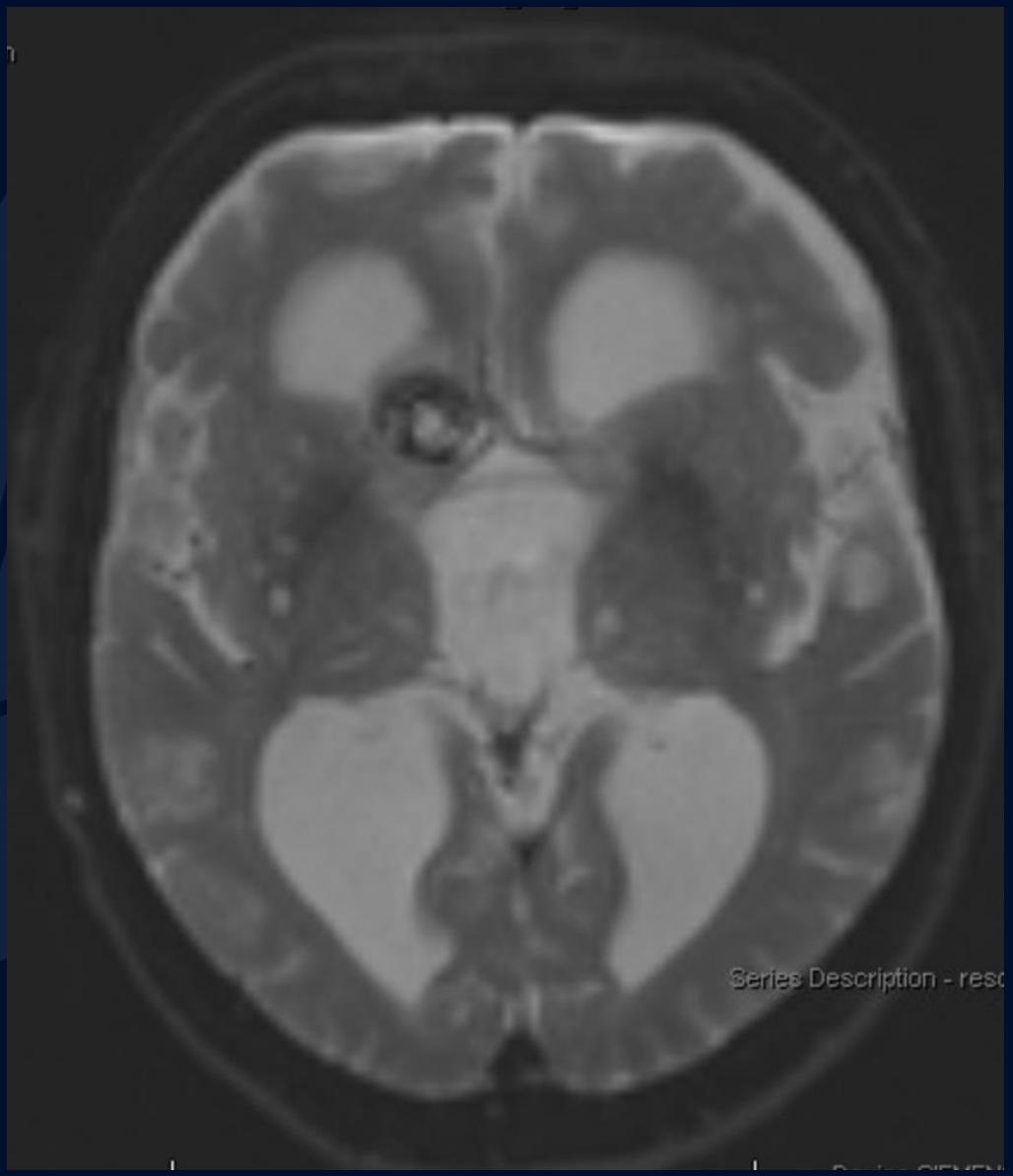
Emma Mastrobattista, MS3

UCONN HEALTH
RADIOLOGY

T2

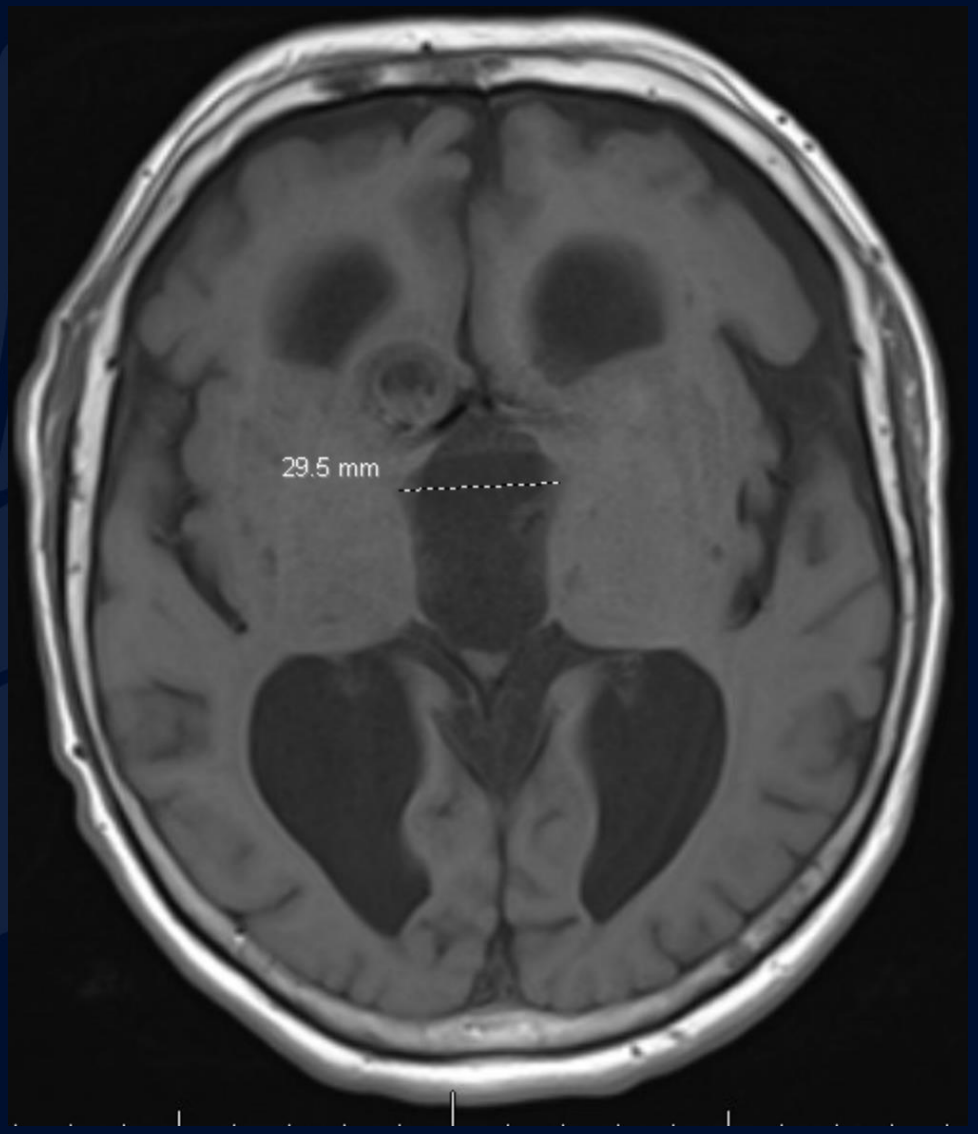
UCONN HEALTH
RADIOLOGY

T2 FS



UCONN HEALTH
RADIOLOGY

T2 flair



UCONN HEALTH
RADIOLOGY

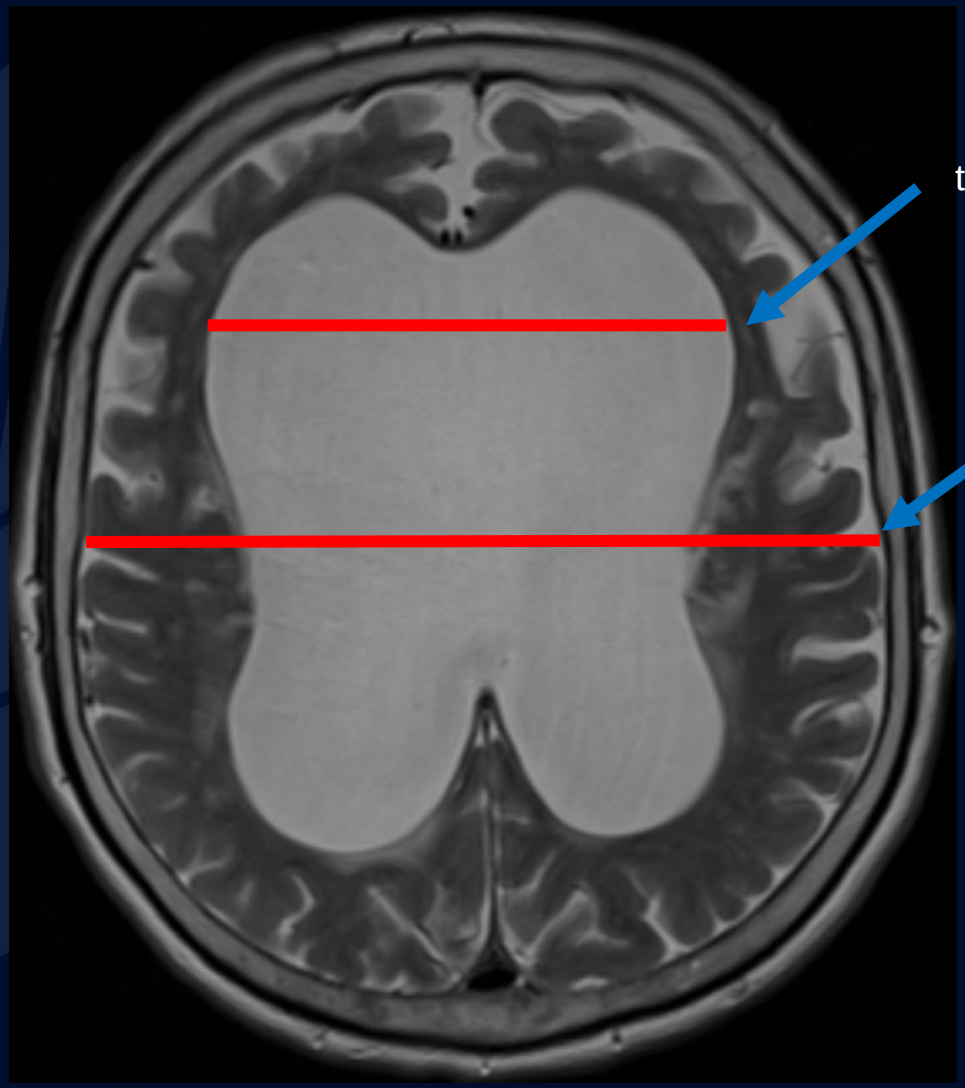
?

UCONN HEALTH
RADIOLOGY

Communicating Hydrocephalus

UCONN HEALTH
RADIOLOGY

T2



Dilation of the lateral ventricles

Width of the frontal horns of the lateral ventricles = 92 mm

Width of internal diameter of the skull = 153 mm

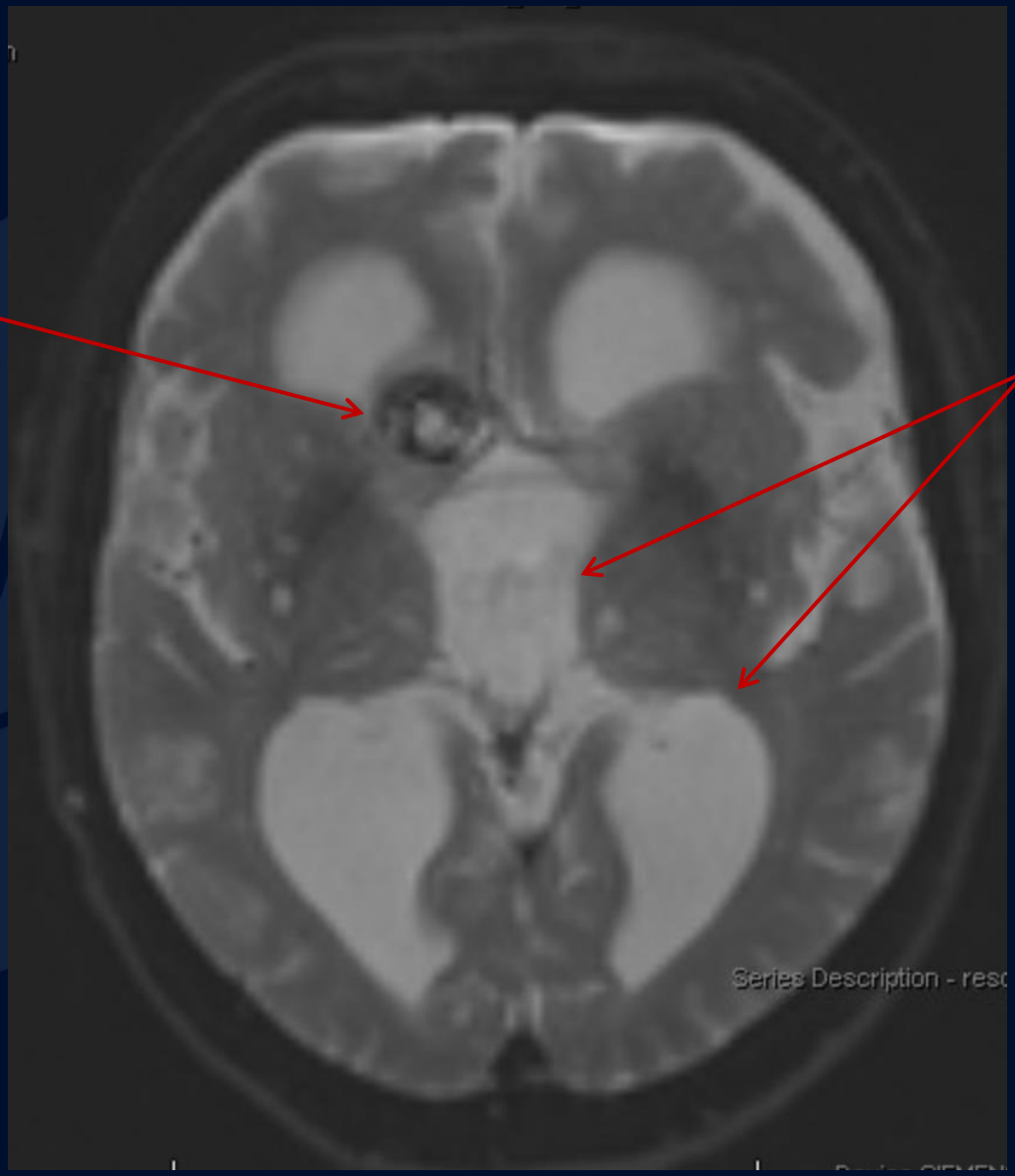
Evans index = 0.60

Normal = 0.2 - 0.25

UCONN HEALTH
RADIOLOGY

T2 FS

Saccular aneurysm of the right ICA incidentally noted



Dilation of the lateral and 3rd ventricles

UCONN HEALTH
RADIOLOGY

T2 flair

Dilation of the lateral and 3rd ventricles

UCONN HEALTH
RADIOLOGY

Communicating Hydrocephalus

Flow of CSF is blocked after it exits the ventricles; termed “communicating because CSF can still flow between ventricles which remain open

- **Diagnosis**
  - Evan’s index assesses for ventriculomegaly as a ratio of the maximum width of the frontal horns of the lateral ventricles and the maximal internal diameter of the skull being greater than 0.3
- **Epidemiology**
  - Global prevalence is 175 per 100,000 in elderly individuals, higher prevalence in Africa and South America
- **Symptoms**
  - Urinary incontinence, gait dysfunction, and cognitive impairment like executive function, concentration, apathy, and psychomotor slowing.
- **Management**
  - VP shunt to drain CSF from lateral ventricle into peritoneal cavity, ventriculoatrial shunt if patient has abdominal abnormalities such as peritonitis or morbid obesity, lumboperitoneal shunt in cases of pseudotumor cerebri
  - Alternatives to shunting: Endoscopic third ventriculostomy to permit CSF in the 3rd ventricle to enter the prepontine basal cistern (used in cases of aqueductal stenosis), external ventricular drain placement in emergent acute hydrocephalus, lumbar puncture in posthemorrhagic or postmeningitic hydrocephalus

UCONN HEALTH
RADIOLOGY

References

Koleva, M. and O. De Jesus, *Hydrocephalus*, in *StatPearls*. 2022: Treasure Island (FL).

Filis, A.K., K. Aghayev, and F.D. Vrionis, *Cerebrospinal Fluid and Hydrocephalus: Physiology, Diagnosis, and Treatment.* Cancer Control, 2017. **24**(1): p. 6-8.

Edwards, R.J., et al., *Chronic hydrocephalus in adults.* Brain Pathol, 2004. **14**(3): p. 325-36.

Kartal, M.G. and O. Algin, *Evaluation of hydrocephalus and other cerebrospinal fluid disorders with MRI: An update.* Insights Imaging, 2014. **5**(4): p. 531-41.

UCONN HEALTH
RADIOLOGY