

# RADY 401 Case Presentation: Colloid Cyst

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# Focused patient history and workup

- Patient is a 62 y.o. male who presented at the ED on 9/4:
  - 1 month: Frequent falls, leg weakness, lightheadedness, back pain, AMS, and fecal incontinence
  - PMHX notable for: intracranial hemorrhage, epilepsy, prior TBI, and dural AV fistula
  - Vitals/Physical Exam:
    - Neuro: “Bilateral and equally reactive pupils, intact extraocular movements though with saccadic movements. Absence of nystagmus. Normal facial symmetry with intact eyebrow raise. Intact sensation to light touch in all 3 distributions of the trigeminal nerve bilaterally. Grossly intact hearing, normal speech, symmetric uvular palatal elevation, and normal strength of the trapezius. Strength examination of the proximal and distal muscle groups of the upper extremity is normal. Strength is also intact in proximal and distal lower extremity, with 5/5 leg strength bilaterally upon leg lift, dorsiflexion and plantarflexion. Sensation to light touch equal and present in the upper and lower extremities bilaterally, with intact sensation up to inner thigh. Cerebellar testing showed deficits in right finger-to-nose testing. Unable to assess left due to patient pain in right arm. Gait deferred due to perception of instability. ”
    - Skin: “Skin is warm, dry and intact. Mild erythema along thoracic/lumbar spine with point tenderness.





# Differential

- New intracranial hemorrhage
- Stroke
- Spinal cord compression (history of incontinence)
- Tumor
- Drug toxicity
- Cauda Equina Syndrome
- Infectious process

# List of imaging studies

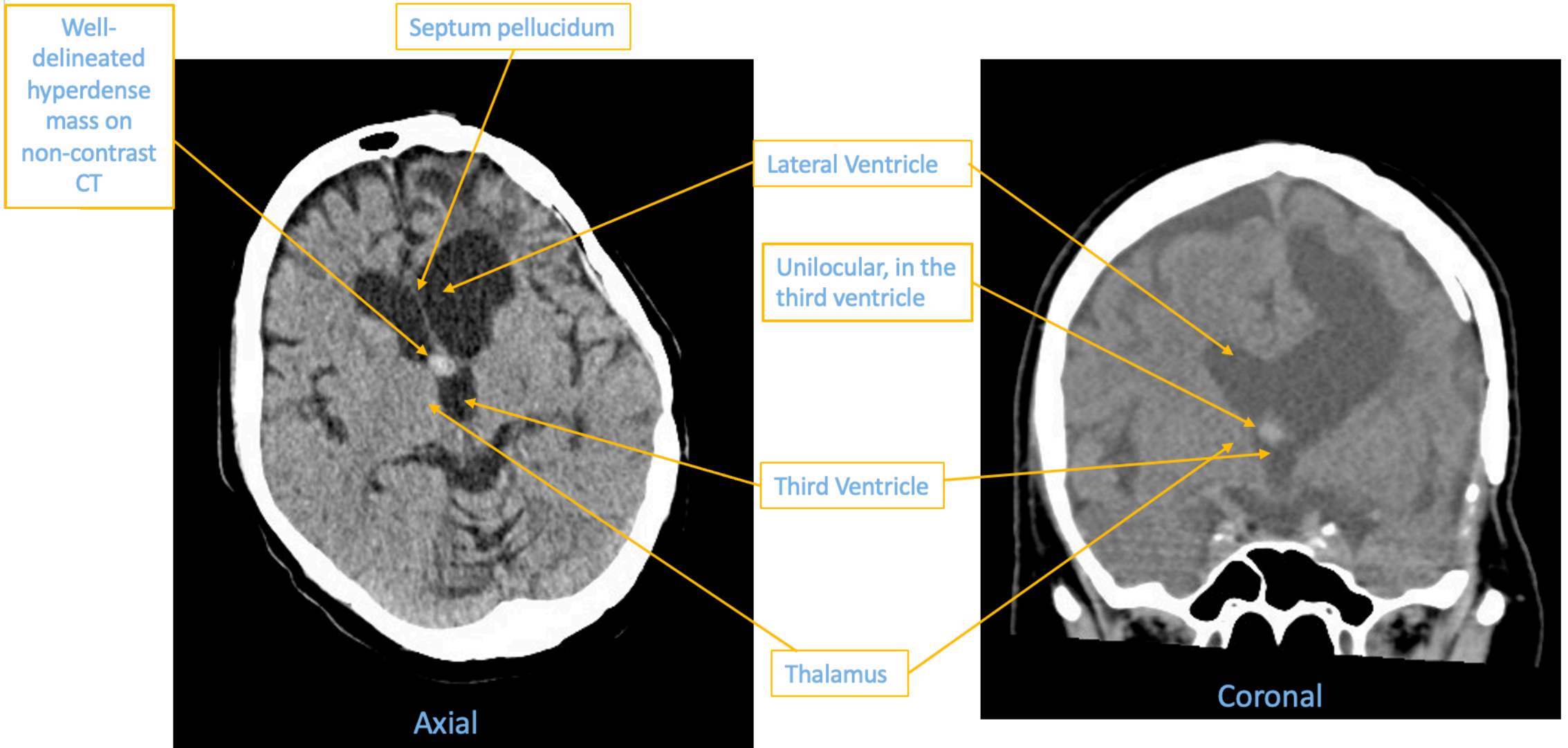
- Head CT w/o contrast \$1,248
- Cervical spine CT w/o contrast \$1,248
  - No fracture
- MRI W and w/o contrast \$2,868
- Thoracic CT w/o contrast \$1,286
  - No fracture
- Lumbar CT w/o contrast \$1,447
  - No fracture

Total ~\$8,097

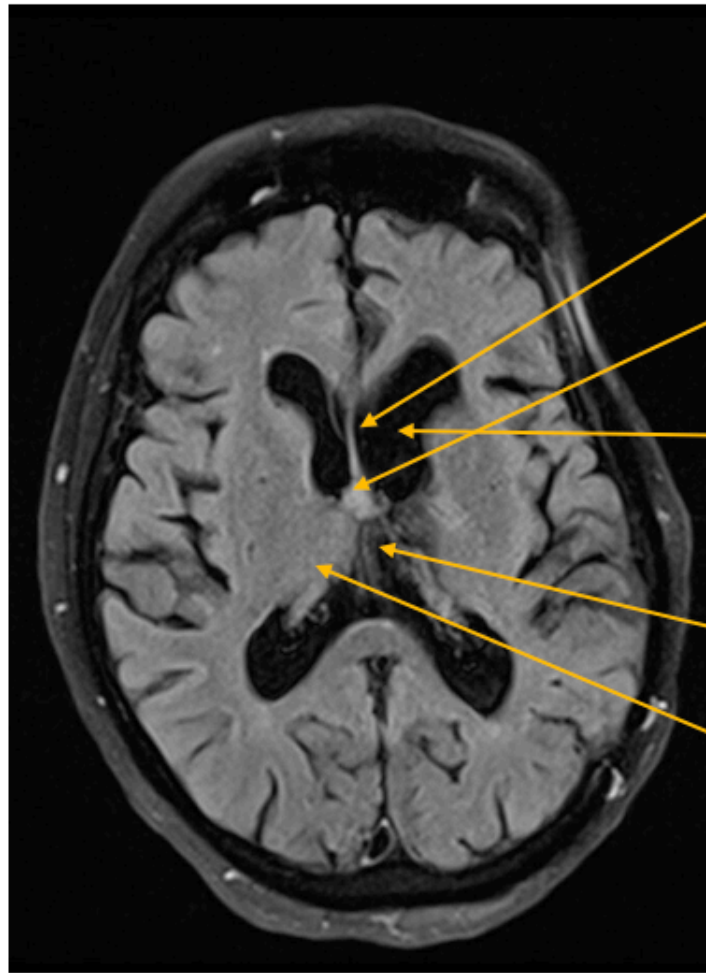
Procedure		Approximate effective radiation dose
 ABDOMINAL REGION	Computed Tomography (CT) — Abdomen and Pelvis	10 mSv
	Computed Tomography (CT) — Abdomen and Pelvis, repeated with and without contrast material	20 mSv
	Computed Tomography (CT) — Colonography	6 mSv
	Intravenous Pyelogram (IVP)	3 mSv
	Barium Enema (Lower GI X-ray)	8 mSv
	Upper GI Study With Barium	6 mSv
 BONE	Spine X-ray	1.5 mSv
	Extremity (hand, foot, etc.) X-ray	0.001 mSv
 CENTRAL NERVOUS SYSTEM	Computed Tomography (CT) — Head	2 mSv
	Computed Tomography (CT) — Head, repeated with and without contrast material	4 mSv
	Computed Tomography (CT) — Spine	6 mSv
 CHEST	Computed Tomography (CT) — Chest	7 mSv
	Computed Tomography (CT) — Lung Cancer Screening	1.5 mSv
	Chest X-ray	0.1 mSv

~8 mSV

# CT w/o contrast



# MRI



Axial T2 TRIM w/o contrast

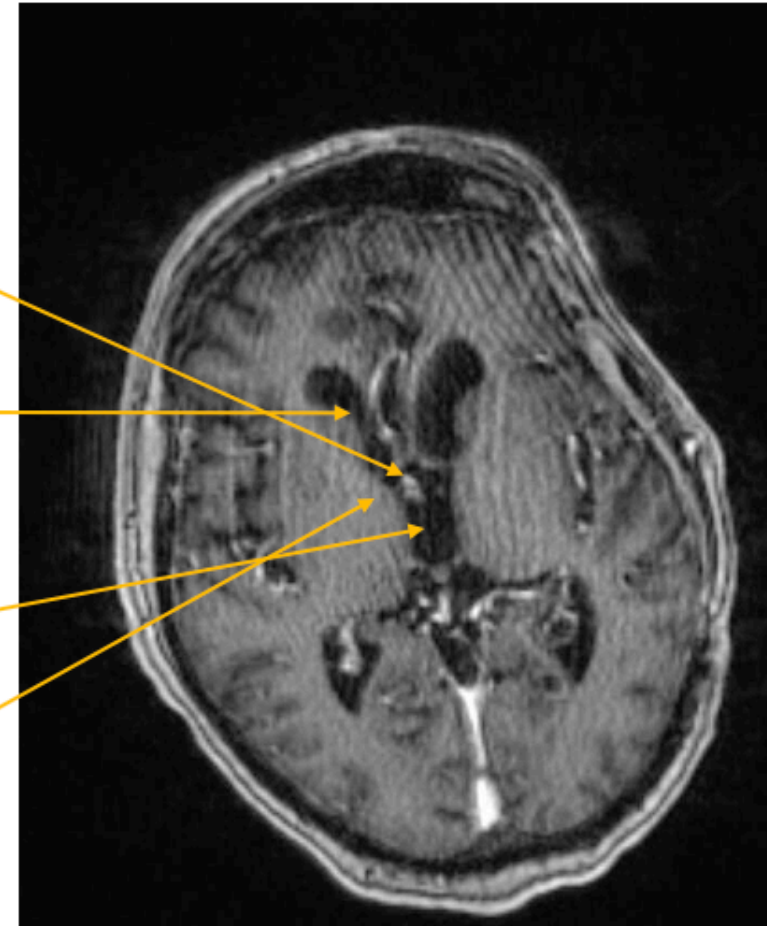
Septum pellucidum

Hyperintensity

Lateral Ventricle

Third Ventricle

Thalamus



Axial T1 with contrast

# Patient treatment or outcome

- Incidental finding
  - ~ 8.8 mm colloid cyst
  - No further treatment
- Patient Dx: UTI
  - Tx: Discharge with antibiotics for the treatment UTI
  - Tx: AED toxicity, Neuro follow-up

# General: Was imaging appropriate?

## **Variant 1:** Acute ataxia following recent head trauma. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
CT head without IV contrast	Usually Appropriate	☼☼☼
CT temporal bone without IV contrast	May Be Appropriate	☼☼☼
CTA head and neck with IV contrast	May Be Appropriate	☼☼☼
CTV head with IV contrast	May Be Appropriate	☼☼☼
MRA head and neck without IV contrast	May Be Appropriate	○
MRI head without IV contrast	May Be Appropriate	○
MRV head without IV contrast	May Be Appropriate	○
MRA head and neck without and with IV contrast	May Be Appropriate	○
MRI head without and with IV contrast	May Be Appropriate	○
CT head with IV contrast	Usually Not Appropriate	☼☼☼
MRV head with IV contrast	Usually Not Appropriate	○
CT temporal bone with IV contrast	Usually Not Appropriate	☼☼☼
CT head without and with IV contrast	Usually Not Appropriate	☼☼☼
CT temporal bone without and with IV contrast	Usually Not Appropriate	☼☼☼
Radiography skull	Usually Not Appropriate	☼

## **Variant 4:** Persistent or worsening mental status change despite clinical management of the suspected underlying cause (intoxication, medication-related, hypoglycemia, sepsis, etc) or acute change in mental status of unknown cause. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
MRI head without and with IV contrast	Usually Appropriate	○
MRI head without IV contrast	Usually Appropriate	○
CT head without IV contrast	Usually Appropriate	☼☼☼
CT head without and with IV contrast	May Be Appropriate	☼☼☼
CT head with IV contrast	Usually Not Appropriate	☼☼☼

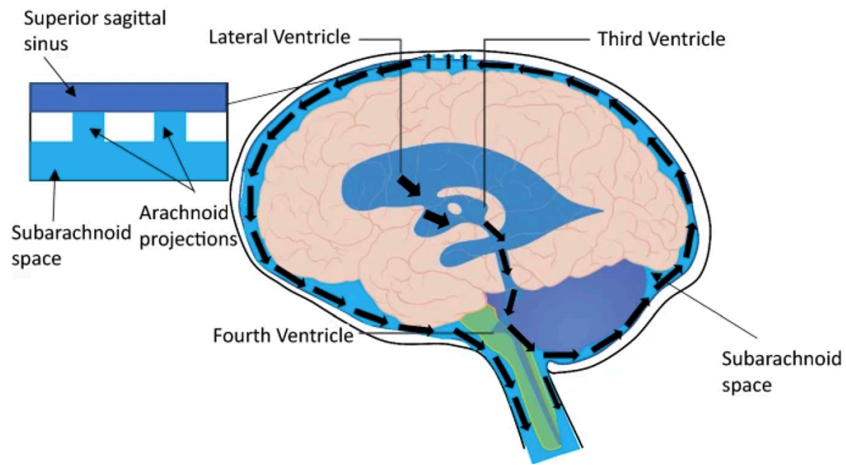
## **Variant 9:** Age greater than or equal to 16 years. Blunt trauma meeting criteria for thoracic and lumbar imaging. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
CT thoracic and lumbar spine without IV contrast	Usually Appropriate	☼☼☼
Radiography thoracic and lumbar spine	May Be Appropriate	☼☼☼
CT myelography thoracic and lumbar spine	Usually Not Appropriate	☼☼☼☼
CT thoracic and lumbar spine with IV contrast	Usually Not Appropriate	☼☼☼
CT thoracic and lumbar spine without and with IV contrast	Usually Not Appropriate	☼☼☼☼
MRI thoracic and lumbar spine without and with IV contrast	Usually Not Appropriate	○
MRI thoracic and lumbar spine without IV contrast	Usually Not Appropriate	○

\*Falls are considered blunt trauma in elderly



# Classical colloid cyst



- Most are found incidentally
- 2% of primary brain tumors
- Contain mucin, old blood, cholesterol thus could lead to a wide range of imaging appearances.
  - Typically hyperdense on CT
- They gradually increase in size
  - From mm to 4 cm

# Management of colloid cyst

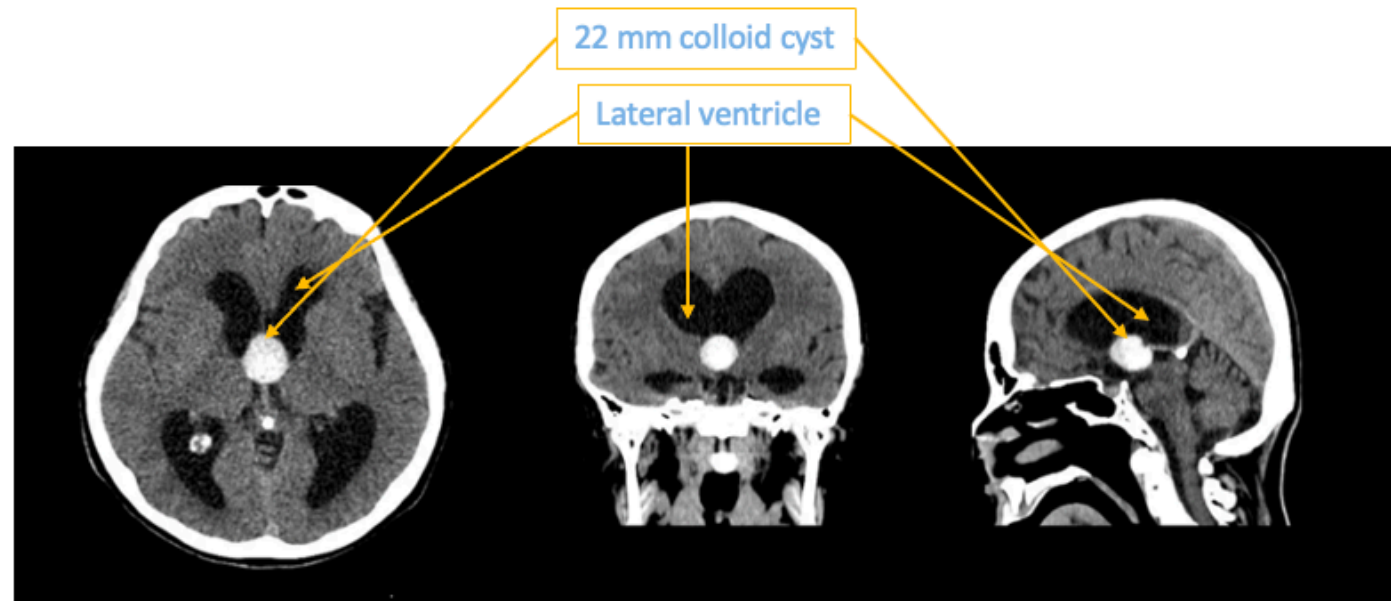
- Once hydrocephalus is ruled out

If:

- Under 10 mm and w/o hydrocephalus
  - Then follow- up and characterization
- Larger than 10 mm
  - Then surgical aspiration or resection recommended

# Potential complication of colloid cysts

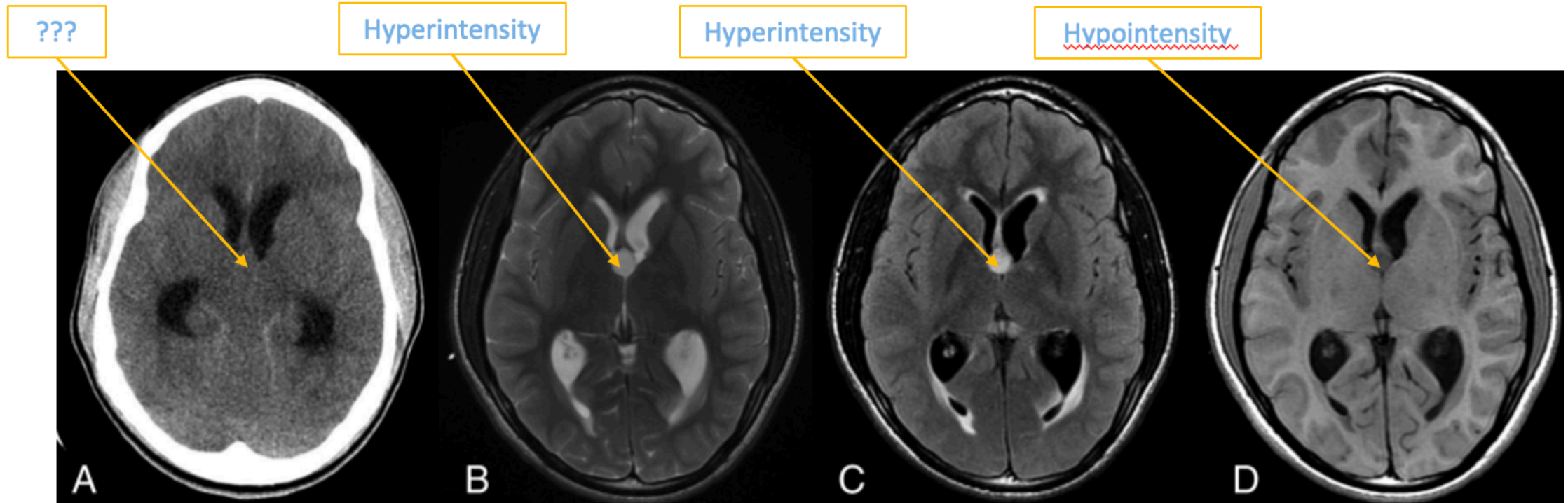
- Obstructive hydrocephalus
  - Headache, vomiting, AMS, visual changes, poor coordination, and/or loss of bladder control



Non-contrast head CT

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# Isointense colloid cyst on CT



Axial non-contrast CT

Axial T2

Axial T2-FLAIR

Axial T1

## UNC Top Three

- Older patient with numerous falls (blunt trauma) and AMS
  - Initial work-up includes CT without contrast
  - Consider CT thoracic and lumbar
- Colloid cyst are typically benign
  - Greater than 10 mm, consider resection
- If enlarged ventricles are present, but mass not evident
  - Obtain MRI

# References

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