21y.o. male with unilateral loss of vision after acute trauma to orbit during college basketball game

Michelle Duong, MS3
Edward Gillis, D.O.
Aladdin Tarakji, M.D.

UCONN HEALTH
RADIOLOGY

UCONN HEALTH
RADIOLOGY

?

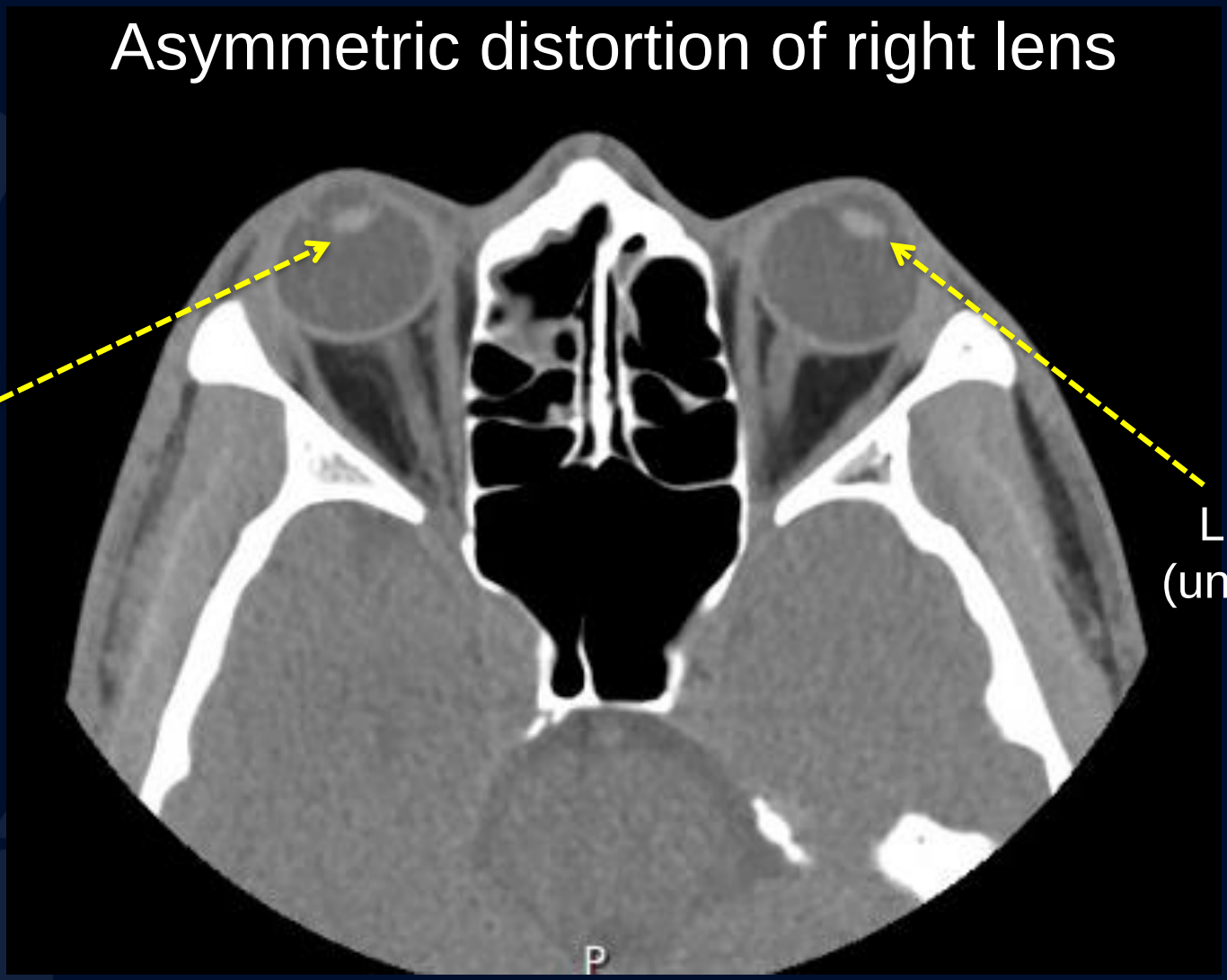
UCONN HEALTH
RADIOLOGY

Traumatic hyphema and partial lens subluxation of right eye

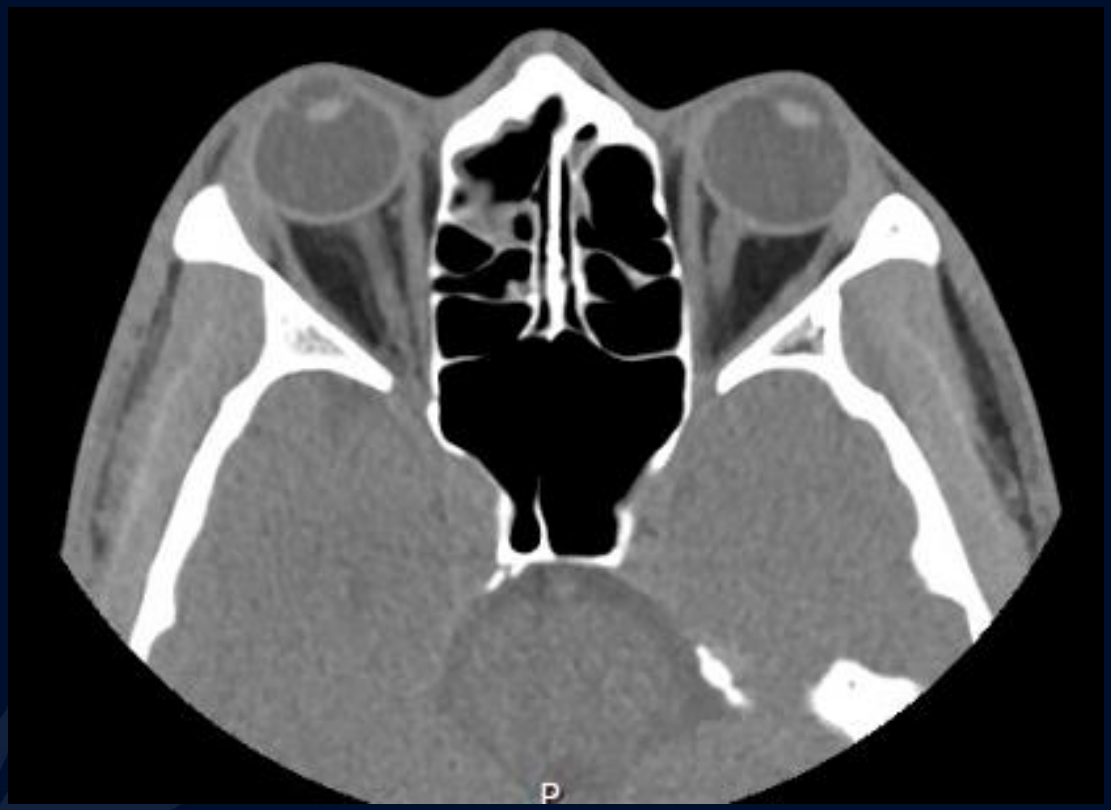
Blood in anterior chamber of the eye after blunt trauma

UCONN HEALTH
RADIOLOGY

Asymmetric distortion of right lens



UCONN HEALTH
RADIOLOGY

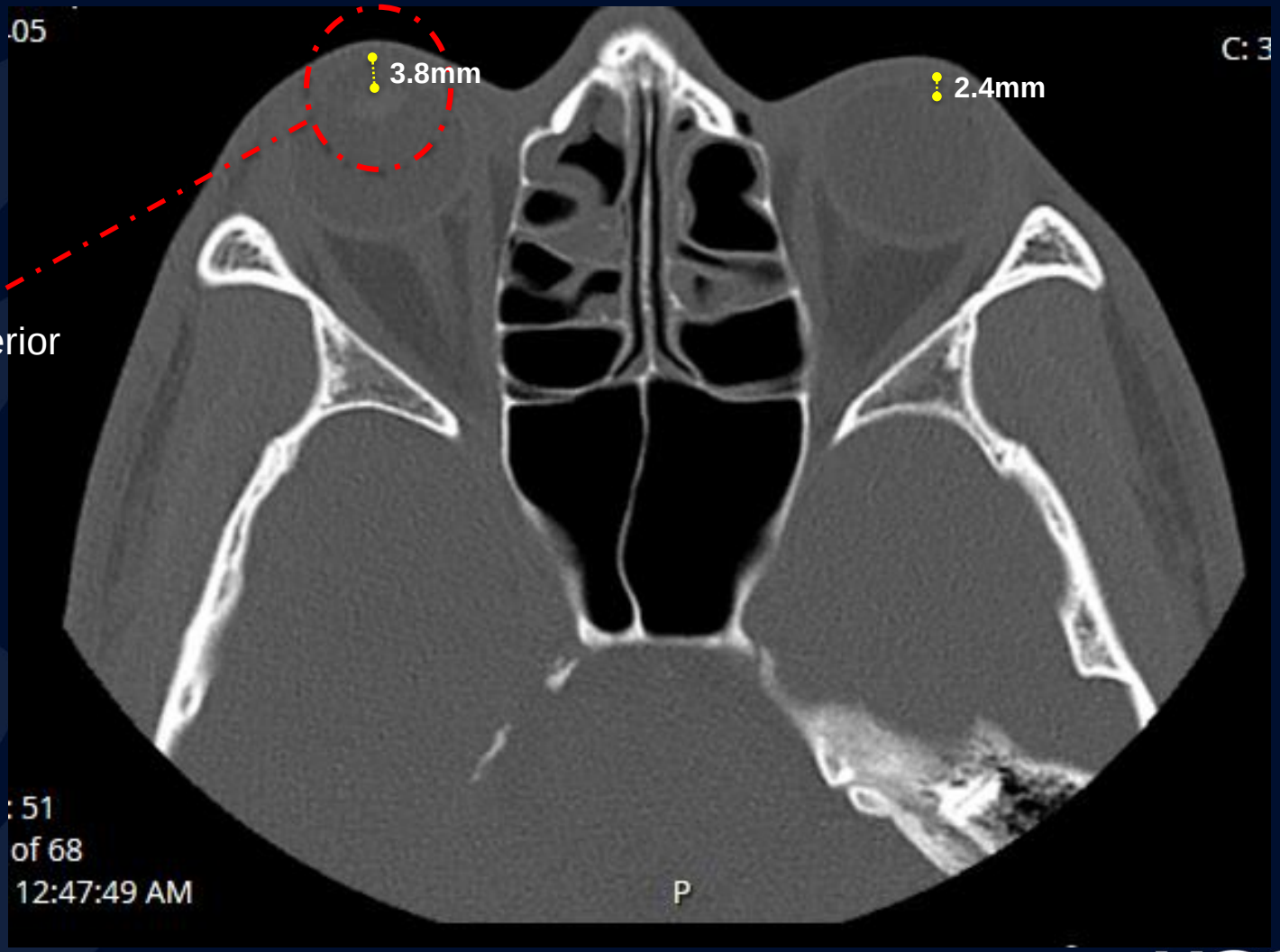


(Subtle) findings of scleral trauma/rupture

- Asymmetric deep anterior chamber
- Partial lens subluxation

UCONN HEALTH
RADIOLOGY

Asymmetrically deep right anterior chamber



Right anterior chamber

UCONN HEALTH
RADIOLOGY

Traumatic hyphema

Presentation

- Vision loss, eye pain, and photophobia after history of blunt trauma

- Visible layering of RBCs in anterior chamber on exam

UCONN HEALTH
RADIOLOGY

Traumatic hyphema

Epidemiology

- Incidence: ~12 injuries per 100,000 population
- 70% occur in children (peak incidence between ages 10-20y)

Etiology

- Can be **traumatic** (from blunt or penetrating trauma) or **spontaneous** (in patients with ↑bleeding or conditions that cause ischemia and vascular changes in anterior chamber)
- Complications: ↑intraocular pressure, optic atrophy, secondary hemorrhage, open globe, **permanent vision loss**
- **Sickle cell disease/trait** and **clotting disorders** or use of anticoagulants ↑risk of complications of hyphema

Pathophysiology

- Blunt trauma stretches globe, distorting normal eye architecture
- Bleeding is from tearing of ciliary body and iris

UCONN HEALTH
RADIOLOGY

Traumatic hyphema

Diagnosis

- Clinical diagnosis made based upon **history of eye trauma** and characteristic findings during ophthalmologic exam such as **layered blood in anterior chamber**
- Imaging:
  - **CT orbit** no contrast to check for open globe
  - **Ultrasound of eye** to assess for lens damage but should be avoided in suspected open globe

Treatment

- Prompt evaluation by ophthalmologist
- Monitor intraocular pressure
- Limit activity (keep head elevated, limit reading, etc)
- Eye shield to avoid further injury
- Glucocorticoid eye drops to decrease risk of rebleeding

UCONN HEALTH
RADIOLOGY

References

1. Brandt MT, Haug RH. Traumatic hyphema: a comprehensive review. J Oral Maxillofac Surg 2001;59:1492.
2. Sankar PS, Chen TC, Grosskreutz CL, Pasquale LR. Traumatic hyphema. Int Ophthalmol Clin 2002; 42:57.
3. Walton W, Von Hagen S, Grigorian R, Zarbin M. Management of traumatic hyphema. Surv Ophthalmol 2002; 47:297.
4. https://pubs.rsna.org/doi/pdf/10.1148/rg.286085523
5. Duong M. Tarakji A. Gillis E. Partial lens subluxation and traumatic hyphema. Radiology Online. (2020)

UCONN HEALTH
RADIOLOGY