ORBIT CONFERENCE: A CLINICAL CONUNDRUM

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79 YO FEMALE

- Presents from OSH for 2-3 weeks of **cough, congestion and headaches**
- Had seen her PCP twice during this time and was prescribed Flonase for **presumed allergies**
- **Worsening headaches** after starting Flonase
- Stopped Flonase but **headaches only worsened**
- Friday her eyes were “fine” per her son
- Sunday**: left eye was swollen completely shut**
- Eventually seen again by her PCP on Tuesday and **referred directly to the ED**

79 YO FEMALE

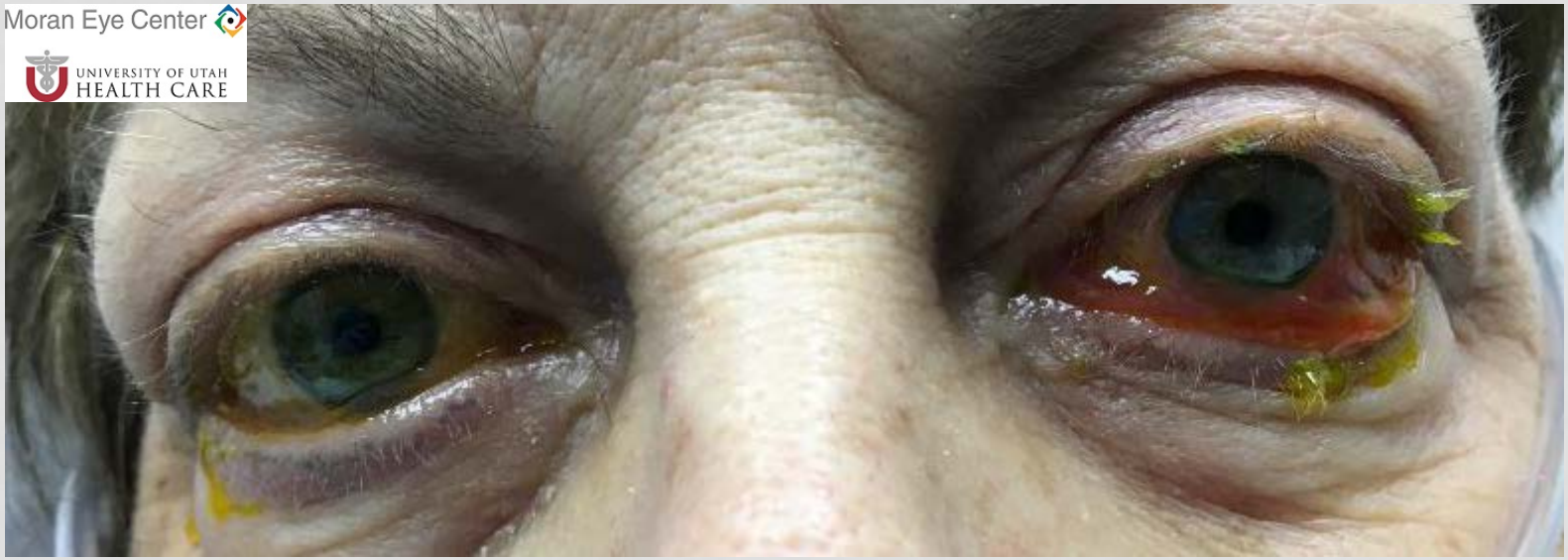
- PMH: Hypothyroidism, GERD, dementia, and HTN
- PSH: hysterectomy and appendectomy
- POH: Cataract surgery OU
- Current Medications:
  - amlodipine 10 mg
  - donepezil 5 mg
  - synthroid 75 mcg
  - naproxen 500 mg bid prn
  - pantoprazole 40 mg
  - triamcinolone 0.1% topical
- Social history: lives with granddaughter, denies, smoking, drinking, or illicit drug use

BEDSIDE EXAM

- VA: 20/40 OU
- Visual Fields: full to confrontation
- Pupils: equal and reactive to light and accommodation, NO RAPD
- Extraocular motility: Full OD, nearly complete ophthalmoplegia OS
- IOP: 11 OD, 17 OS
- Ishihara color plates: 10/11 OU
- +Proptosis OS with periorbital edema, no resistance to retropulsion
- V1-V3 sensation intact OU

- Anterior segment:
- Ptosis OS
- 4+ chemosis OS but was otherwise unremarkable

- Dilated exam:
- ON, macula, vessels, and periphery WNL OU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PERTINENT LABS

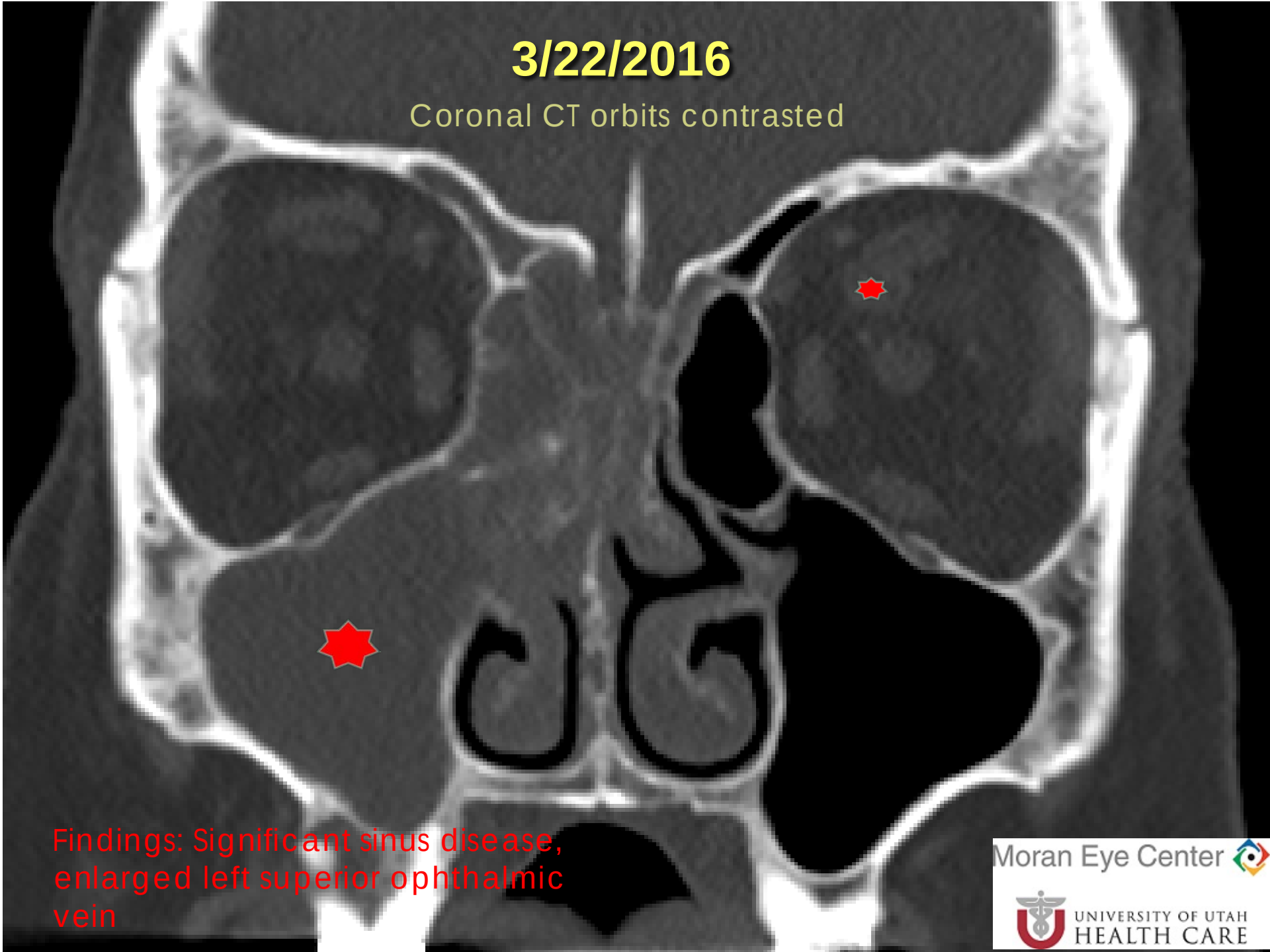
- WBC of 13.28, 83% neutrophils
- CRP: 8.2
- ESR: 30
- A1c of 5.9

- Blood cultures: NGTD

- Admitted to the Neurology service for further evaluation

IMAGING

- Imaging with Dr. Davidson


3/22/2016
Coronal CT orbits contrasted
Findings: Significant sinus disease, enlarged left superior ophthalmic vein
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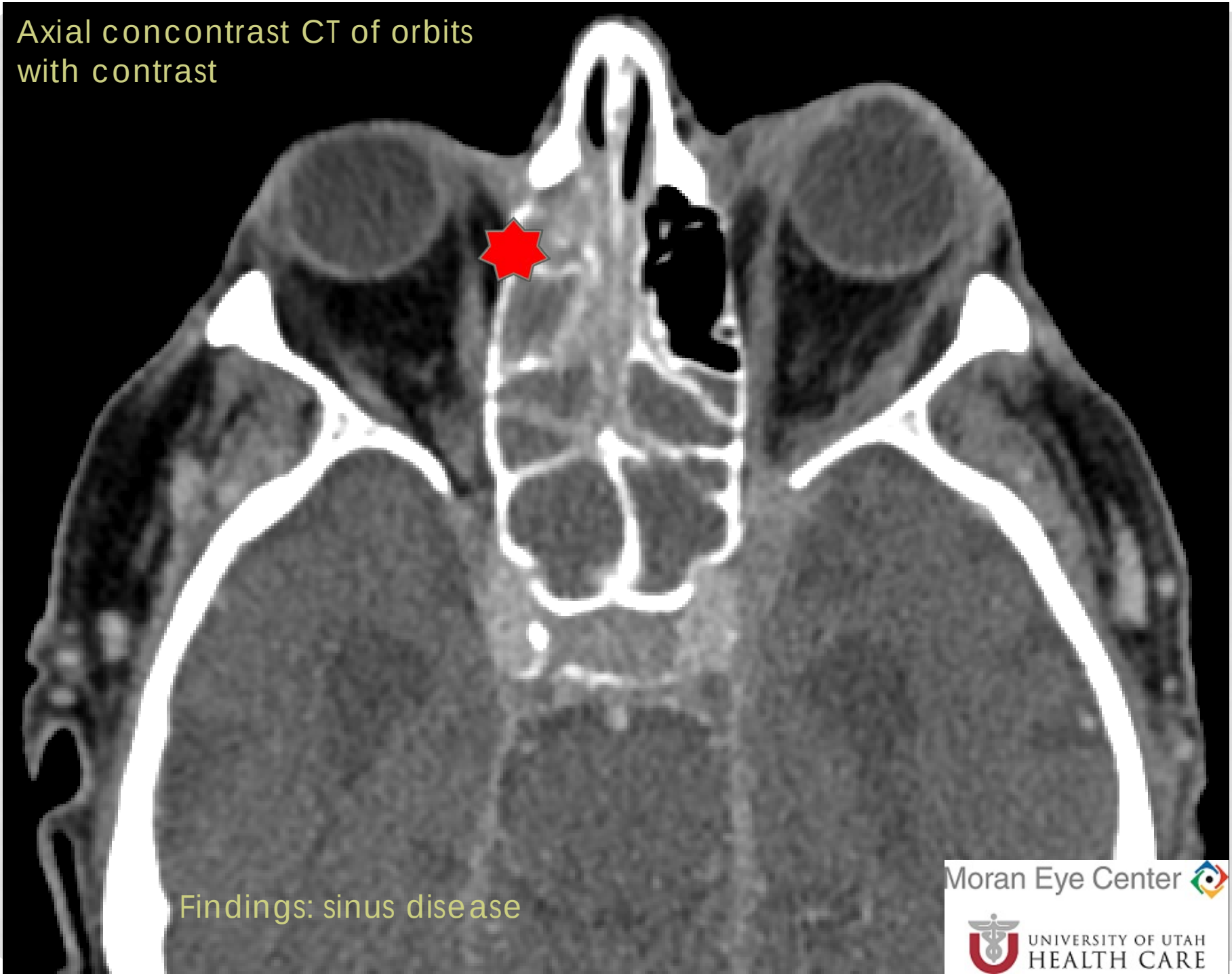
Axial concontrast CT of orbits
with contrast
Findings: sinus disease
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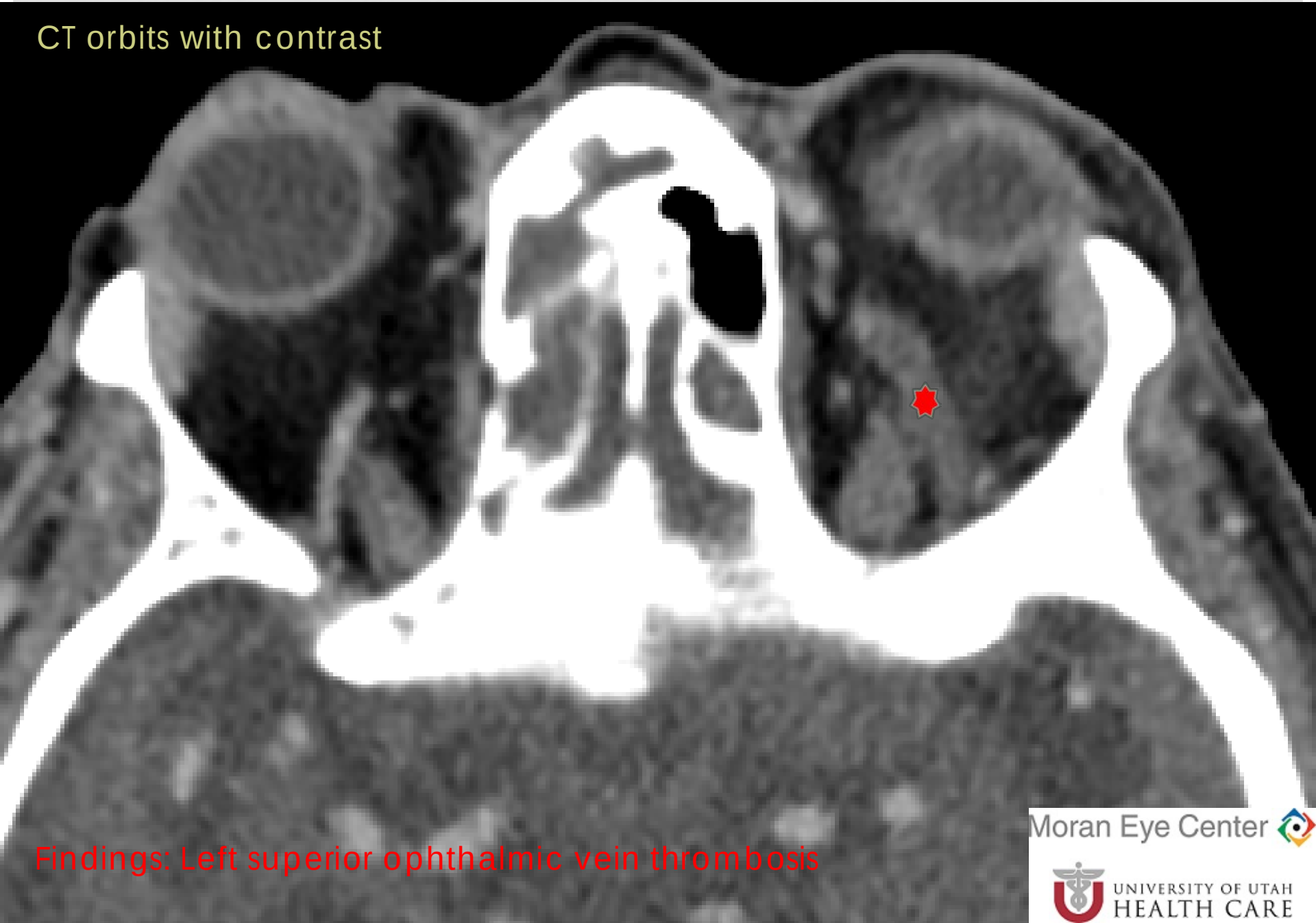
CT orbits with contrast
Findings: Left superior ophthalmic vein thrombosis
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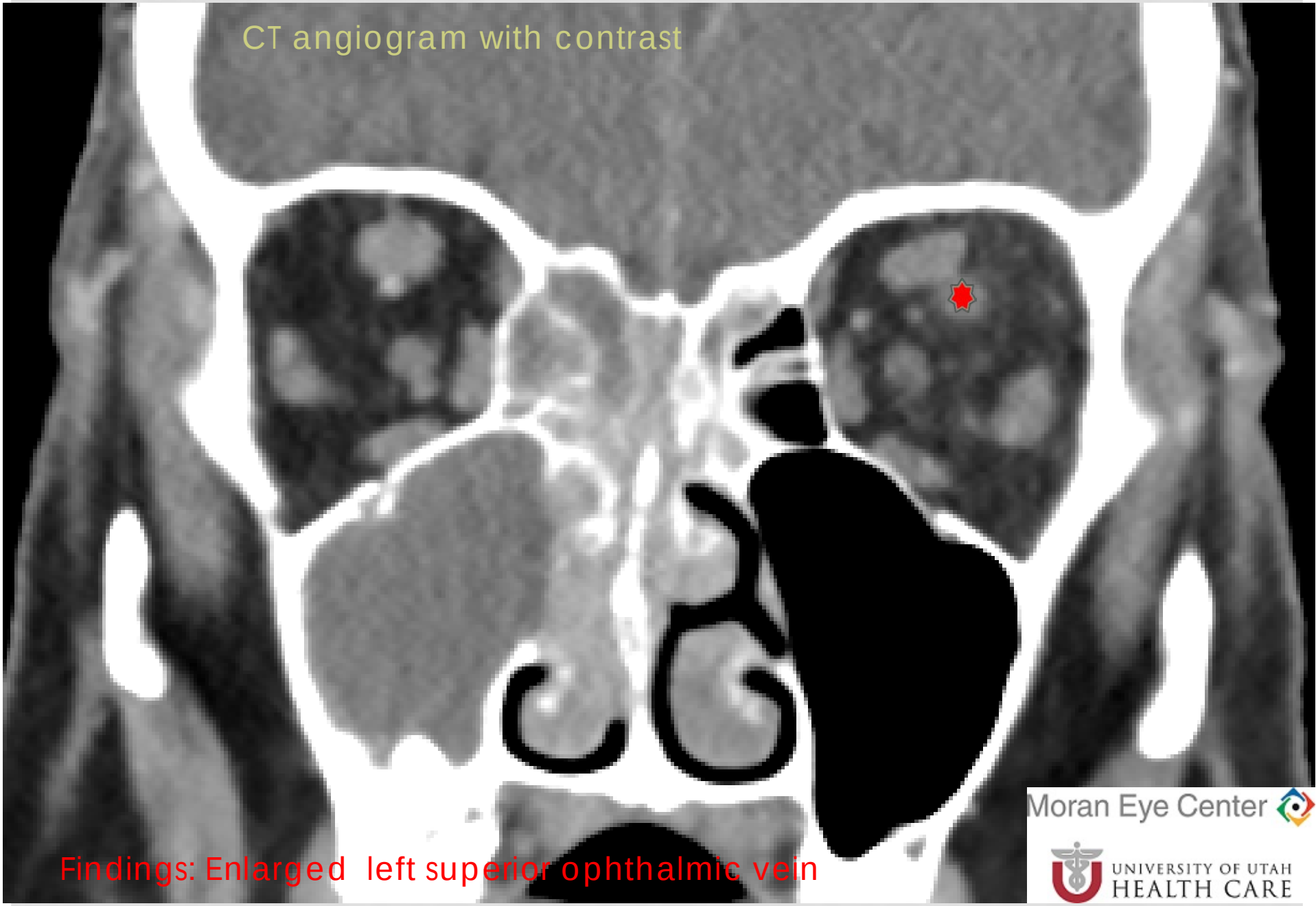
CT angiogram with contrast
Findings: Enlarged left superior ophthalmic vein
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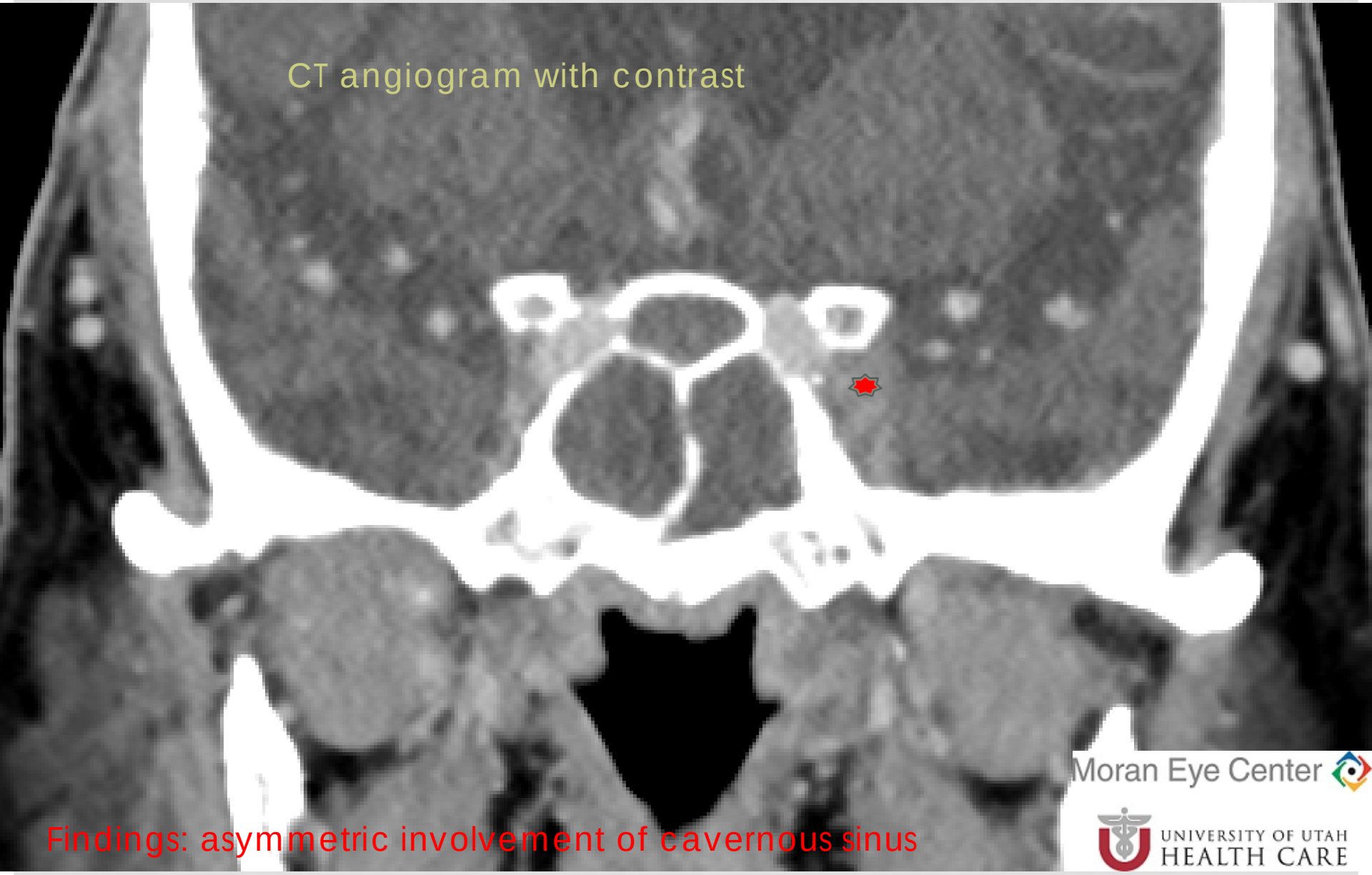
CT angiogram with contrast
Findings: asymmetric involvement of cavernous sinus
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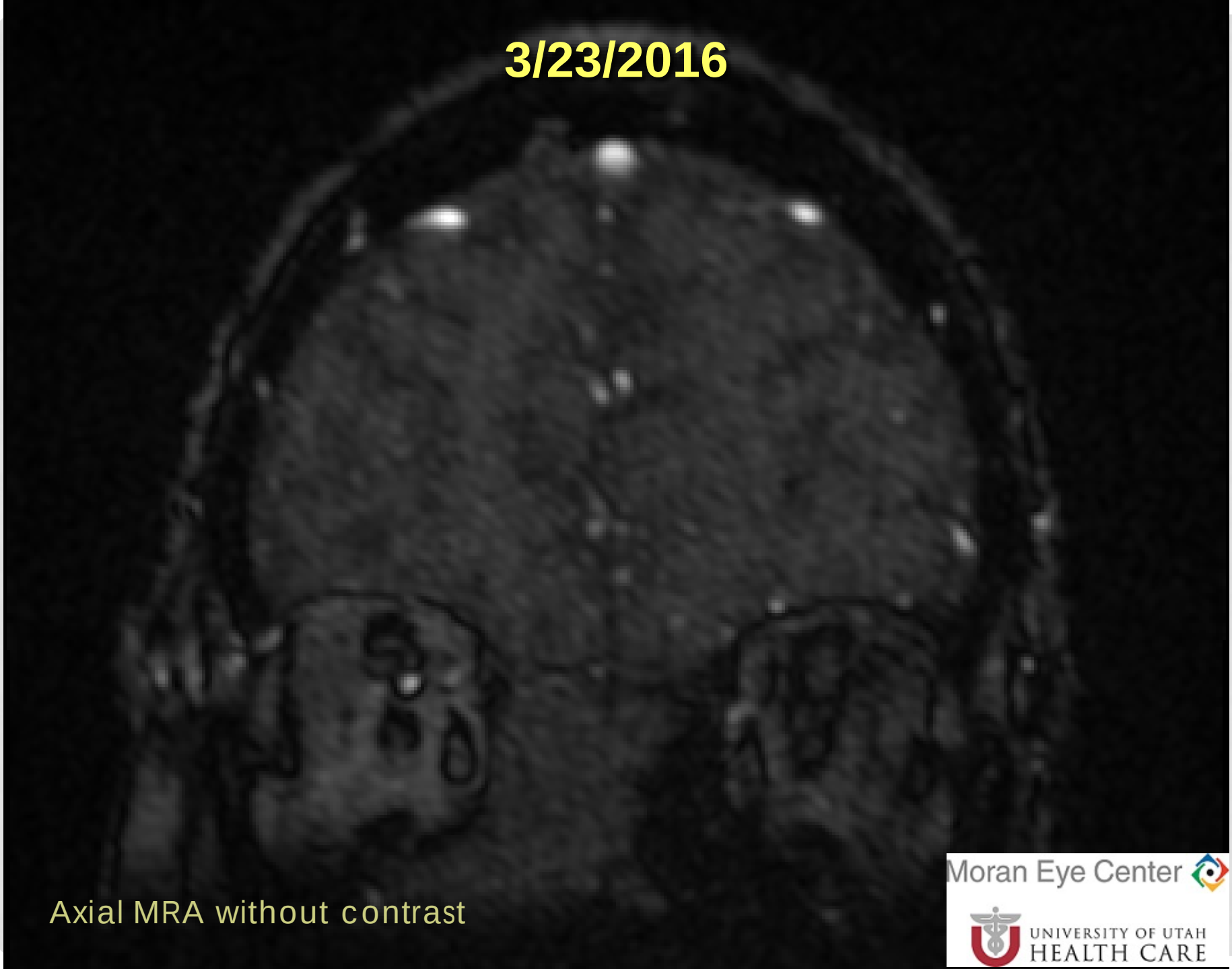
3/23/2016
Axial MRA without contrast
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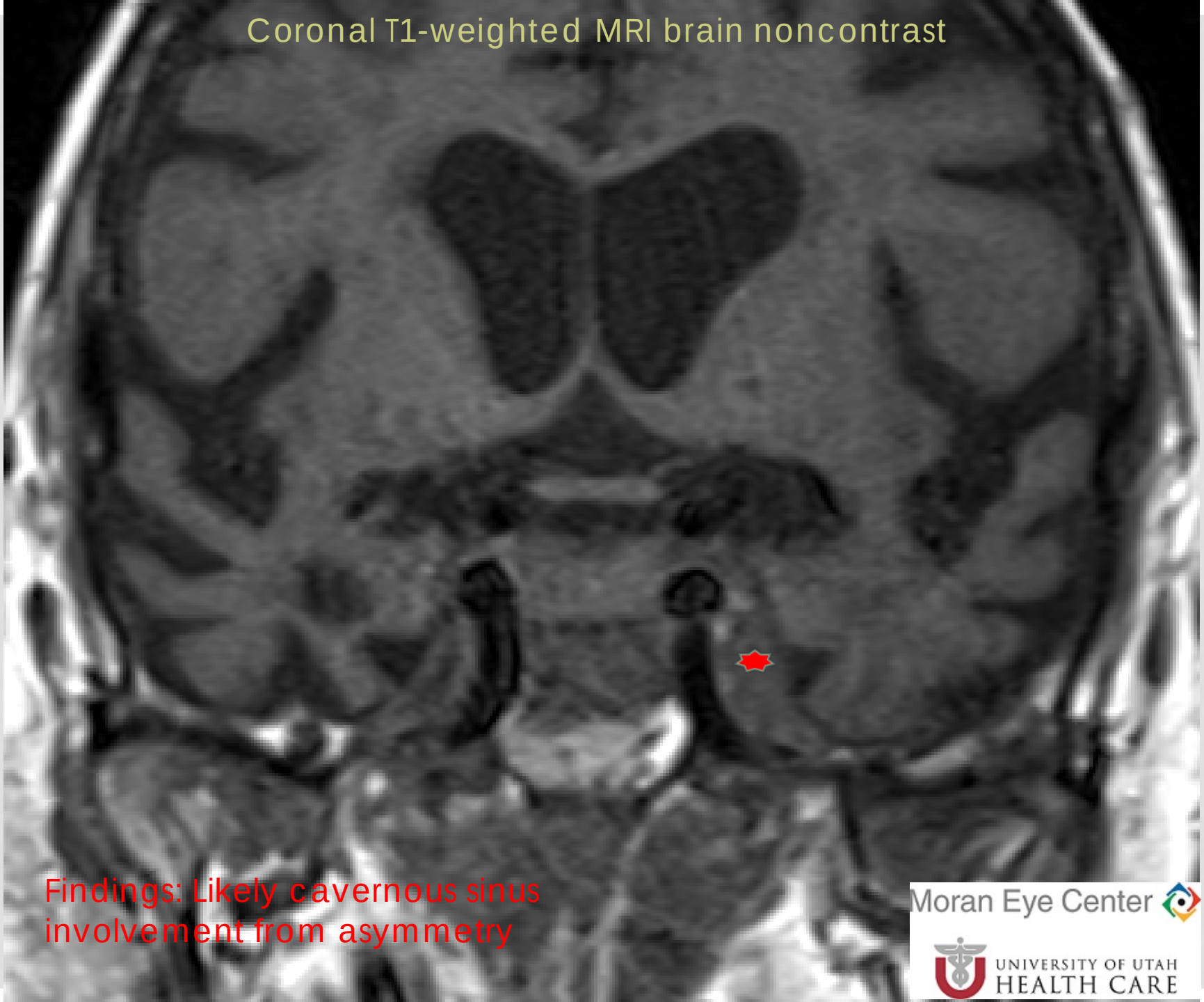
Coronal T1-weighted MRI brain noncontrast
Findings: Likely cavernous sinus involvement from asymmetry
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- Started on anti-coagulation and vancomycin, cefepime, and metronidazole
- ENT and ID consulted
- Attempted MRA/MRI: aborted per patient request
- Attempted a 2nd time: aborted per patient request
- Underwent combined FESS, tooth extraction, oral-sinus fistula closing with ENT and dental services

SINUS PATHOLOGY/MICROBIOLOGY

- Acute and chronic inflammation, submucosal gland hyperplasia, and reactive bone consistent with acute on chronic sinusitis
- Microbiology: 2+ upper respiratory tract organisms

DIAGNOSTIC DILEMMA

- Unable to fully evaluate
- Likely represents a superior ophthalmic vein thrombophlebitis with some extension into the cavernous sinus

SUPERIOR OPHTHALMIC VEIN THROMBOSIS

- Rare entity
- Vessel ends in cavernous sinus
- Clinical findings usually suggest orbital process such as facial or orbital cellulitis
- Typical findings: proptosis, chemosis, ophthalmoplegia, ptosis +/- optic nerve dysfunction
- May progress to cavernous sinus thrombosis and death
- Broad differential: Infectious, inflammation, hypercoag state
- Can be bilateral following trauma, infectious, or SLE
- **Oral contraceptives

DIFFERENTIAL DIAGNOSIS

- Of a patient presenting with **peri-orbital swelling**, **proptosis**, and **conjunctival congestion** with or without ocular motility/visual impairment
  - Orbital cellulitis
  - Cavernous sinus thrombosis
  - Carotico-cavernous fistula
  - Superior ophthalmic thrombosis

TREATMENT

- **IV antibiotics for infection** (course of 3-4 weeks)
- **+/- anticoagulation**
  - To reduce risk of progressing to CST
  - AAO recommends dose-adjusted IV heparin
  - Based off of randomized, placebo-controlled trial of 20 patients
    - Treated group: 2 patients with slight neurological deficits, other 8 with complete recovery
    - Placebo: 3 died, 6 with neurolical deficits,1 with complete recovery
    - Retrospective portion 43 of 102 pts had ICH
- **+/- steroids**
- **+/- surgery** (drain abscess and/or sinuses)

SVT VS. CST

- Check cranial nerves!!!
  - Specifically CNV-2
  - However, can be difficult to similar profile of patient symptoms and clinical signs

THANKS

- Dr. Davidson

CITATIONS

- *Desa V, Green R. J Oral Maxillofac Surg. 2012;70(9):2085-2091.*
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- *Michaelides et al., J. Ophth Scand, 2003. 81:88-90.*
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- *Smith et al., J. Clin NeuroOphtho. 1983. 3: 83.*
- *Syed et al., Proc Univ Med Cent; 2016; 29(1):36-38.*