

# AMSER Case of the Month

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HPI: 68 year old male with blurry vision

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# Patient Presentation

- HPI: 68-year-old male who presents with blurry vision for approximately 1 year. He recently saw his optometrist who had concern for an intraocular lesion.
- Past Medical History: Multiple malignant melanomas of the skin s/p excision, coronary artery disease, hypertension, and multiple gun shot wounds s/p many abdominal surgeries

# Objective Findings

- Physical Exam:
  - HENT: Normocephalic and atraumatic. Normal bilateral tympanic membranes, ear canals, and external ears. No congestion or rhinorrhea. No oropharyngeal exudate
  - Eyes: No scleral icterus, no discharge. EOMI bilaterally. Conjunctivae normal. Pupils are equal, round, and reactive to light.
  - Neuro: Alert and orientated to person, place, and time. Baseline mental status. No cranial nerve deficits. Strength and sensation overall intact.
- CBC w diff: Normal
- CMP: Normal

What Imaging Should We Order?

# Select the applicable ACR Appropriateness Criteria

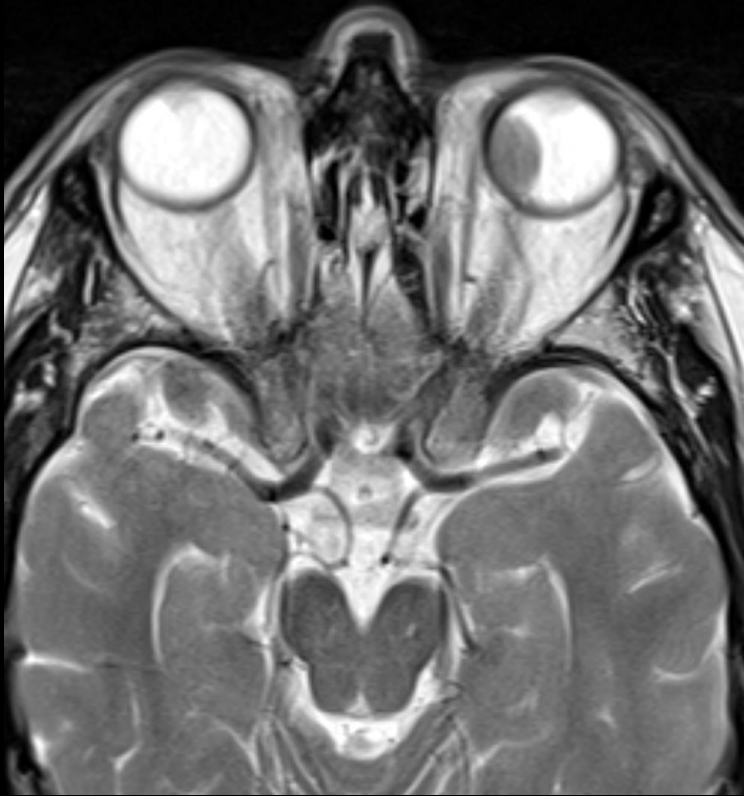
**Variant 6:** Visual loss. Intraocular mass, optic nerve, or pre-chiasm symptoms. Initial imaging.

Procedure	Appropriateness Category	RRL
MRI orbits without and with IV contrast	Usually Appropriate	0
CT orbits with IV contrast	Usually Appropriate	☒☒☒
MRI orbits without IV contrast	Usually Appropriate	0
CT orbits without IV contrast	May Be Appropriate	☒☒☒
MRI head without and with IV contrast	May Be Appropriate	0
CT head with IV contrast	May Be Appropriate	☒☒☒
MRI head without IV contrast	May Be Appropriate	0
CT head without IV contrast	May Be Appropriate	☒☒☒
CTA head and neck with IV contrast	May Be Appropriate	☒☒☒
MRA head and neck without and with IV contrast	May Be Appropriate	0
MRA head and neck without IV contrast	May Be Appropriate	0
Arteriography cervicocerebral	Usually Not Appropriate	☒☒☒
CT head without and with IV contrast	Usually Not Appropriate	☒☒☒
CT orbits without and with IV contrast	Usually Not Appropriate	☒☒☒
X-ray orbit	Usually Not Appropriate	☒

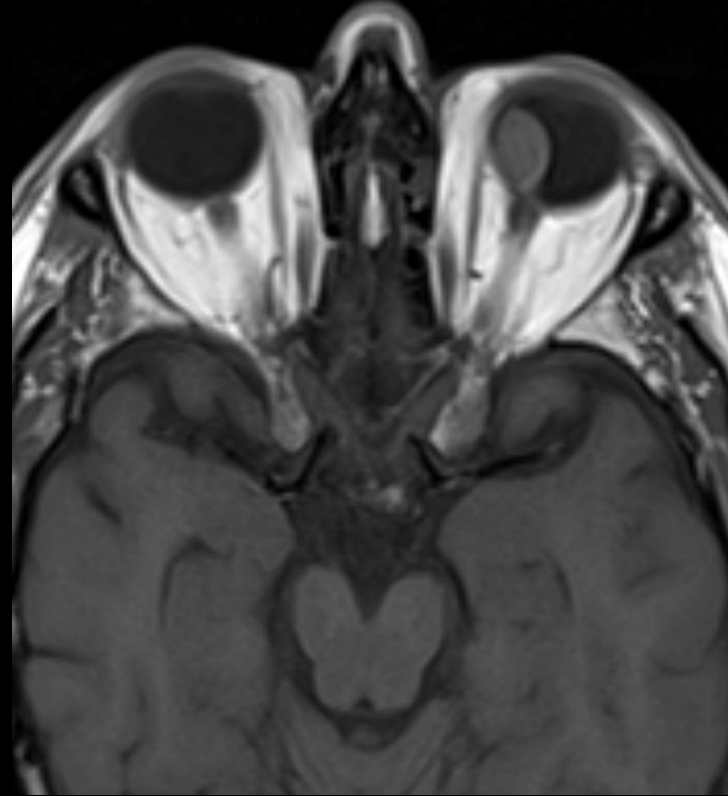


This imaging modality was ordered by the physician

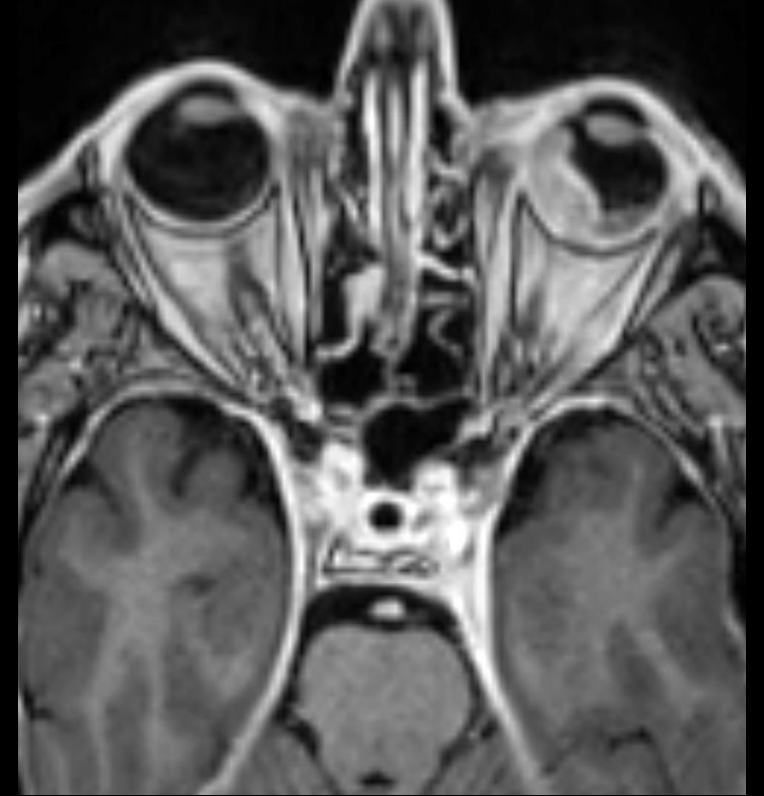
# Findings (unlabeled)



Axial T2



Axial T1 pre-contrast



Axial T1 post-contrast

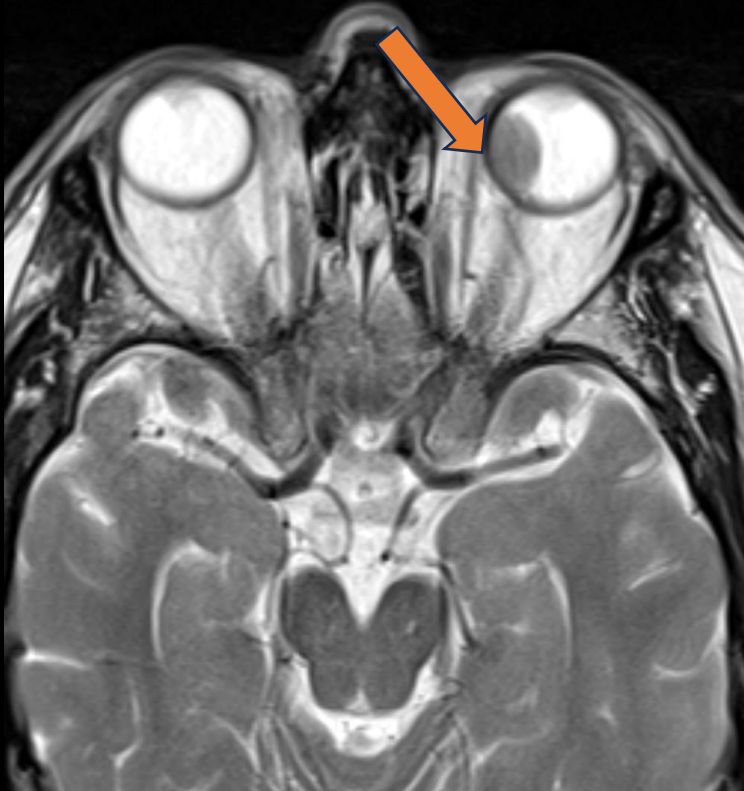
# Findings (labeled)

T2 hypointense mass in the left globe

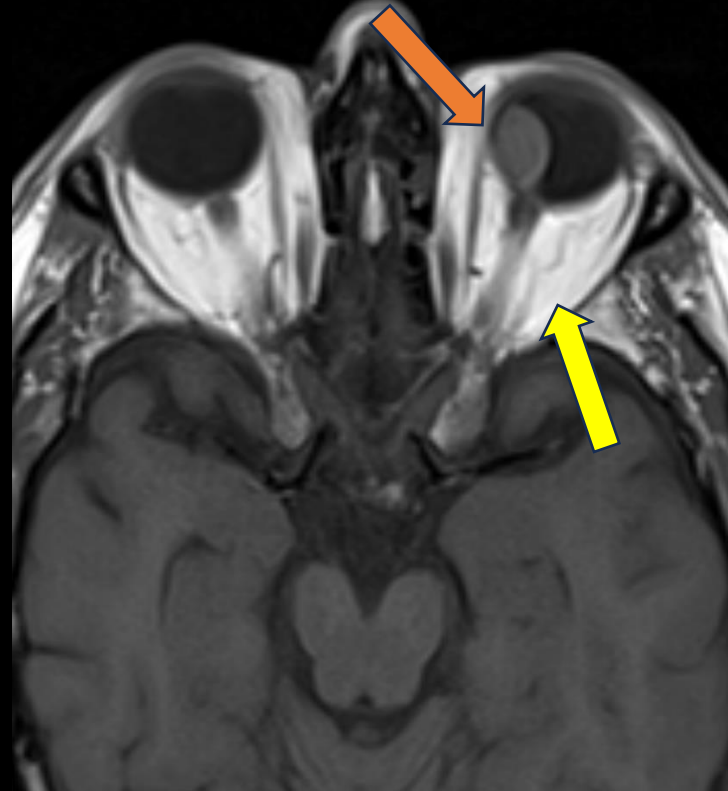
T1 isointense mass in the left globe

No retro-orbital extension. Orbital fat planes are preserved.

Mass solidly enhances



Axial T2



Axial T1 pre-contrast



Axial T1 post-contrast

# Differential Diagnoses

- Metastases, choroidal detachment, uveal neurofibroma, uveal schwannoma, ocular melanoma
- Of Note: Fat, protein, hemorrhage, and **melanin** may be hyperintense on T1 imaging



Final Dx:

Primary Ocular Malignant Melanoma

\*thought to be primary because no additional lesions discovered

# Case Discussion

- **Definition**

- Ocular melanoma is a rare but deadly malignancy that arises from melanocytes within the uveal tract, conjunctiva, eyelid, and orbit.
- Uveal melanoma is the most common type

- **Etiology/Epidemiology**

- Risk factors include sun exposure, tanning, light skin/eye color, atypical cutaneous nevi, iris nevi, and freckles
- Multiple different genetic mutations have been associated with uveal melanoma although no direct causes
- Most common primary intraocular malignancy
- Primarily seen in the white population
- Incidence increases with age

# Case Discussion

- **Clinical Presentation**

- Dependent on location.
  - Choroidal tumors can cause retinal detachment
  - Conjunctival melanomas can present as an elevated brown nodule
  - Ciliary body tumors can cause lens displacement and disturbances in accommodation
  - Iris melanomas can distort the pupil and cause cataracts and glaucoma
- Commonly asymptomatic at diagnosis
- Common symptoms include blurry vision, visual field defect, flashing lights, redness, irritations, pain, and a pressure-like sensation
- Monitoring for metastasis should be performed regularly regardless of stage and treatment

# Case Discussion

- **Pathology**

- Primarily believed to be due to oxidative damage
- Histologically, mixed melanoma containing both spindle and epithelioid cells is the most common subtype.
  - This case was confirmed by pathology to be uveal melanoma, epithelioid type with evidence of extrascleral spread

- **Treatment and Prognosis**

- Treatment options based on tumor size include laser photocoagulation, transpupillary thermotherapy, plaque radiation therapy, particle beam radiotherapy, local surgical resection, and enucleation
- Poor prognosis factors: age > 60 years, larger tumors, anterior location within the globe, epithelioid cells, and extraocular extension
- High risk of distant metastasis: most commonly liver, lung, and bone
- 50% mortality rate despite treatment advances

# References:

- “ACR Appropriateness Criteria®.” ® | American College of Radiology, [www.acr.org/ClinicalResources/ACR-Appropriateness-Criteria](http://www.acr.org/ClinicalResources/ACR-Appropriateness-Criteria). Accessed 22 Mar. 2024.
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