If and When: Time-Sensitive Retina Referrals

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Time-Sensitive Retina Referrals

- Goals
  - Review the presentation of urgent and emergent retinal diseases
  - Review the management of urgent and emergent retinal diseases
  - Review the reasoning and literature supporting the timing of retina referrals and interventions

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Time-Sensitive Retina Referrals

- Categories
  - Rhegmatogenous disease (PVD/RT/RD)
  - Vascular occlusions
  - Diabetic retinopathy
  - AMD
  - Uveitis

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Time-Sensitive Retina Referrals

- Caveats (Rules Are Meant to be Broken)
  - **Monocular patients**
  - High-stress patients
  - High-demand patients
  - "Something doesn't add up"
    - Trust your clinical instincts!

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Rhegmatogenous Disease

RISK STRATIFICATION

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PVD Triage

- Ranked
  - PVD with dense VH → 1-2 days
  - PVD with mild/moderate VH
    - Poor view of periphery → 1-5 days
    - Good view of periphery → 1 week
  - PVD without VH
    - Poor view of periphery → 1 week
    - Good view of periphery → 2-6 weeks

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PVD Triage

- Rationale for Management
  - Acute PVD symptoms → 8-22% chance of tear
  - If no initial tear → 2-5% chance of tear in following weeks
  - Vitreous pigment and/or hemorrhage increases tear risk
    - 52-fold increase in risk of tear
  - B-scan essential if poor view of periphery
  - Scleral depression is gold-standard for examination (alternatively a contact lens or condensing lens)

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Retinal Break Triage

- Ranked
  - Tear with acute symptoms → 1 day
  - Operculated hole with acute symptoms → 1 day
  - Tear or large hole without symptoms → 1-3 weeks
  - Atrophic/pigmented holes → 2-8 weeks

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Retinal Break Triage

- Rationale for Management
  - Over 50% of symptomatic tears progress to RD without treatment
    - Prompt treatment reduces risk to under 5%
  - Asymptomatic tears progress to RD in 5% of cases
  - Asymptomatic atrophic/operculated holes rarely progress to RD
  - Lattice degeneration with holes rarely progresses to RD
    - Even when fluid present around holes
  - Location matters!
  - Family history matters!
  - The other eye matters!

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Retinal Detachment Triage

- Ranked
  - Macula-on RD
    - Acute presentation → <24 hrs
    - Chronic presentation → <1 week
  - Macula-off RD
    - Acute presentation → <24 hrs
    - Subacute presentation → <48 hrs
    - Chronic presentation → 1-2 weeks

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Retinal Detachment Triage

- Rationale for Management
  - Macula-on detachments
    - Better visual outcomes
    - 10% risk of progression to macula-off within 2 days
    - Bullous detachments more likely to progress
  - Macula-off detachments
    - Are outcomes similar to macula-on detachments if repaired <3 days?
    - Or are outcomes similar as long as repaired within 7-10 days?
    - Chronic detachments (with PVR) not urgent
  - Asymptomatic detachments
    - Several case series documenting stability without treatment

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Diabetic Retinopathy Complications

WHO GOES FIRST?

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Diabetic Retinopathy Complications

- Ranked
  - Anterior segment neovascularization
    - NVA/NVG → ASAP (To Retina *before* Glaucoma)
    - NVI → <1 week
  - Posterior segment neovascularization
    - TRD → 1-3 weeks
    - VH → 1-3 weeks
    - NVE → 1-3 weeks
  - Macular edema
    - Central or new symptoms → 2-4 weeks
    - Extrafoveal or chronic → 4-8 weeks

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Diabetic Retinopathy Complications

- Rationale for Management
  - NVA/NVG goes to the front of the line
    - Stop irreversible damage to trabecular meshwork
    - Prevent the need for glaucoma surgery
  - Every TRD is different
    - Extramacular TRDs can often avoid surgery (15% progress)
    - Macular TRD outcomes may be limited by ischemia and chronicity
  - VH can often clear without surgery
  - Edema is not an emergency
    - Protocol V (DRCR)

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Vascular Occlusions

THE THOUSAND-DOLLAR WORK-UP

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Vascular Occlusion Triage

- Ranked
  - Acute BRAO or CRAO → Emergency Department!
  - Chronic BRAO or CRAO → 1-4 weeks
  - BRVO or CRVO
    - <55 yo, no known risk factors → <1 week
    - >55 yo, risk factors → 1-4 weeks
  - Neovascular complications
    - NVG/NVA → <24 hrs
    - NVI → <1 wk
    - NVD/NVE/VH → 1-3 weeks

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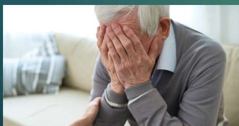
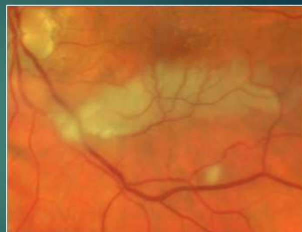
Retinal Artery Occlusions (BRAO, CRAO)

- Management
  - Emergent embolic work-up

"It's been a long day I just want to go home..."





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Retinal Artery Occlusions (BRAO, CRAO)

- Management
  - Where to? Emergency department
  - When? Immediately
    - Stroke center > Emergency department > Cardiology clinic
    - Imaging/Labs
      - Cardiac ultrasound (TTE, +/- bubble study)
      - Carotid imaging (Doppler ultrasound, CTA/MRA neck)
      - Neuro-imaging
      - GCA labs
    - Can establish care in retina clinic after work-up, or before if diagnosis is in question

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Retinal Artery Occlusions (BRAO, CRAO)

- Rationale for Management
  - Why an emergent work-up?
    - Increased risk of ischemic stroke after acute RAO
      - 44-fold increase in first week
      - 14-fold increase in first month
    - Increased risk of hemorrhagic stroke and myocardial infarction
    - Detection of silent cerebral ischemia (up to 24%)
    - Detection of undiagnosed vascular risk factors (over 75%)
      - Carotid stenosis most common
    - Rule out Giant Cell Arteritis (if no embolus visualized)

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AMD Complications

WHO GOES FIRST?

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AMD Triage

- Ranked
  - Acute symptoms
    - Hemorrhage → 1-3 days
      - Large submacular hemorrhage
    - Subretinal/intraretinal fluid → <1 week
  - Chronic symptoms
    - Hemorrhage → <1 week
    - Subretinal/intraretinal fluid → 1-2 weeks
    - Disciform scarring/fibrosis → 1-4 weeks

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AMD Triage

- Rationale for Management
  - Subretinal blood → fibrosis/scarring
    - Large submacular hemorrhages may benefit from surgery (subretinal tPA)
    - Be wary of patients on anticoagulation
  - Early anti-VEGF treatment improves prognosis
    - Lessons from COVID

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Uveitis Complications

STORM BREWING

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Posterior Uveitis Triage

- Ranked
  - Severe, acute presentations
    - Macular retinal whitening → <24 hrs
    - Peripheral retinal whitening → <24 hrs
    - Severe, sudden vision loss → <24 hrs
  - Intermediate uveitis → <1 week
    - Including CME, disc edema, suspected vasculitis

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Posterior Uveitis Triage

- Rationale for Management
  - Inflammation = tissue destruction
  - Identify etiology ASAP in order to…
    - Begin targeted antibiotic/antiviral therapy
    - Begin anti-inflammatory therapy
    - Detect/prevent extra-ocular disease
  - Monitor retina in cases of anterior uveitis

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