Ophthalmology

Disease Diagnosis and Investigations

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Glaucoma

- Tonometry → measurement of IOP
  - Schiotz indentation Tonometry
  - Applanation Tonometry
- Gonioscopy → evaluation of anterior chamber angle
- Fundoscopy → examination of fundus for evaluation of optic nerve head changes
- Perimetry → evaluation of visual field defects

Diabetic Retinopathy

- Fundus Examination
  - -Direct ophthalmoscope
  - - Indirect Ophthalmoscope
  - - slit Lamp biomicroscopy
- Fundus Fluorescein Angiography (FFA)
- OCT → to assess structural changes in retina in diabetic maculopathy

Retinal Vein Occlusion

- FFA
- OCT

CRVO

- OCT
- OCT Angiography
- ERG

CRAO

- OCT → may show embolic plaque at optic nerve head
- FFA → shows delay in arterial filling and masking of choroidal fluorescence due to retinal edema
- ERG → diminished b wave

Rhegmatogenous Retinal Detachment

- Direct ophthalmoscope → but peripheral retinal detachment cannot be diagnosed

- Indirect ophthalmoscope with indentation
  ↳ best method to assess whole retina upto ora serrata
  . used to find Retinal break

- Goldmann three mirrors → give visibility of whole interior of eye, including angle of anterior chamber

- Ultrasonography (B-scan) → confirms diagnosis in cases when retina cannot be visualized e.g cataract, vitreous haze, corneal opacity

Retinitis Pigmentosa

- Fundus Findings
- Perimetry → Classic Ring Scotoma
- Dark Adaptation Time → Prolonged
- ERG → Subnormal due to photoreceptor dysfunction
- EOG → Subnormal due to photoreceptor and RPE dysfunction
- OCT → identifies maculopathy

Retinoblastoma

- Tonometry
- Measurement of Corneal diameter
- Anterior Chamber examination
- Indirect Ophthalmoscopy with scleral indentation
  ↳ for diagnosis

* For Confirmation
  - Plain X-Ray Orbit → calcification
  - Ultrasonography (A and B scan) → Tumor size and calcification
  - CT Scan → detect calcification and gross involvement of optic nerve
  - MRI → optic nerve involvement and extraocular extension
    ↳ Standard modality to rule out extraocular extension

Argyl Robertson pupil

- Cocaine 4-10% → pupil does not dilate

Adie's Tonic Pupil

- Pilocarpine 0.1% → Constriction of pupil

Horner Syndrome

- Apraclonidine 0.5-1% → Horner pupil dilate
  ↳ Normal pupil Not affecte

- Cocaine 4-10% → Horner pupil does not dilate
  ↳ Normal pupil Dilate

To Differentiate B.w Preganglionic and Postganglionic Lesion in Horner Syndrome

- Phenylephrine 1% → Postganglionic dilate
  OR
  Adrenaline
  ↳ Preganglionic do not dilate

- Hydroxy amphetamine → Postganglionic donot dilate
  ↳ Preganglionic and Normal pupil dilate

Heterophoria (Latent Squint)

Assessment

- Visual Acuity
- Extraocular Movements
- Binocular Single Vision
- Cycloplegic Refraction
- AC/A Ratio → Normal is 3:1

Diagnosis

- Cover uncover Test → presence of phoria
- Maddox Rod Test → phoria for distance
- Maddox Wing Test → phoria for near