Navigating the Angle: Gonioscopy

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I. History of Gonioscopy
   a. How to visualize the angle
      i. Direct lens
      1. Koeppe lens
      ii. Indirect
      1. Goldmann Three mirror lens
      2. Zeiss four-mirror lens
      iii. Use in Glaucoma
      1. Distinguish one type of glaucoma from the other – secondary glaucomas
      2. Open angle glaucoma vs closed angle glaucoma
      3. Angle recession
      iv. Preparing the Lens
      1. Three mirror vs four mirror lens
      2. Insertion Techniques
     v. Types of Goniolenses
      1. Three mirror lens
      2. Four mirror lens
      3. Six mirror lens

II. Set-up at the Slit Lamp
   a. Set-up Tips
      i. 12:00 position mirror
      ii. Keep gonioscopy lens oriented straight, not tilted
      iii. Elbow rest if needed
      iv. Put light on mirror before going to ocular

III. Viewing the Angle
   a. Start with Low Mag and Iris Conformation
   b. Illuminate the Angle
      i. Very bright
      ii. Slit narrow and vertical
      iii. Move illumination angle a few degrees to the right or left
   c. Corneal Wedge Technique
      i. The slit lamp is used to create two visible lines that come together at Schwalbe’s line.
ii. Slit must be narrow and vertical
iii. Illumination angle should not be straight ahead
iv. Images
v. Wedge can be viewed in the inferior and superior angle, not lateral angles

IV. Angle Anatomy
a. Iris Insertion
b. Ciliary Body or Ciliary Body Band
   i. Visualize the width
   ii. Pigmentation
   iii. Images
c. Scleral Spur
   i. Images
d. Trabecular Meshwork
   i. Images
e. Schwalbe’s Line
   i. Images
f. Identifying Angle Structures
   i. Posterior to Anterior or Anterior to Posterior

V. Grading Scales and Recording Your Findings
a. Goniogram
b. St. Andrew’s Cross
   i. Record the most posterior anatomical angle seen
   ii. Rating of angle “openness”
   iii. Other findings i.e. pigmentation
c. Shaffer Classification
   i. Image
   ii. Grading Scale – (Closed 0), 1, 2, 3, (4 Open)
d. Spaeth’s Classification’s
   i. Configuration of the Iris
   ii. Angular width of the angle recess
   iii. Insertion Grading
   iv. Pigmentation
      1. None 0, just visible +1, mild +2, marked +3, intense +4
e. Scheie’s Grading of Angle Classification
   i. Image
   ii. Grading Scale – (Wide open, I, II, III, IV (Closed/Narrow)
   iii. Opposite of Shaffer

VI. Angle Presentations - Quiz
a. Neovascularization of the Angle
b. Closed Angle

c. Peripheral Anterior Synechiae

d. Plateau Iris Syndrome vs Plateau Iris Configuration
   i. Flat iris plane
   ii. Deep anterior chamber
   iii. Narrow angle due to anterior insertion of iris root

e. Angle Recession
   i. Key finding – widening of the ciliary body band in presence of elevated IOP and nerve damage
   ii. Important to compare opposite “normal” ciliary body band
   iii. Usually due to trauma

f. Pigment Dispersion Syndrome
   i. Transillumination defects
   ii. Heavily pigmented trabecular meshwork
   iii. Coating of the corneal endothelium with pigment cells

VII. www.gonioscopy.org