We Should Be Doing More Gonioscopy and Iridoplasty: Why and How

Brent Bond, MD
Associate Professor
Wake Forest University
Department of Ophthalmology

GONIOSCOPY

<table>
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<tr>
<th>Why: detect occludable angles</th>
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<td>diagnose secondary glaucomas</td>
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<tr>
<td>select glaucoma treatment</td>
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<tr>
<td>evaluate effect of treatment</td>
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Nomenclature:

- PACS – primary angle closure suspect (180 degrees of irido-trabecular contact)
- PAC – primary angle closure (PACS plus either increased IOP or PAS)
- PACG – primary angle closure glaucoma (PAC plus VF / nerve damage)

PACG is estimated to cause 26% of all glaucoma, ... and is responsible for “50% of glaucoma-related blindness.”

Of the 15 M people world-wide estimated to have PACG, “50% are Chinese.”

Caucasians have a prevalence of “0.1% PACG...” (ratio of POAG:CACG ~ 10:1)

Asians (Chinese) and Indians “~2% PACG...” (ratio of POAG:CACG ~ 1:1)

Untreated PACS (narrow angles) estimated rate of progression to PAC and/or PACG varies from 10-35%
"We Should Be Doing More Gonioscopy and Iridoplasty: Why and How?"

The prevalence of PACG is higher in Asian populations (0.1–2.5%) than in white populations (0.09–0.6%) or African populations (0.2–0.5%).

"Study from India found progression from PACS to PAC ~11% over 5 years."
"Other studies showed progression to PAC or PACG 17–35% over 10 years."

Gonioscopy
- Gonia = Greek, angle
- Skopein = Greek, to examine
- Why: detect occludable angles, diagnose secondary glaucomas, select glaucoma treatment, evaluate effect of treatment
GONIOSCOPY

- Gonia = Greek, angle
- Skopein = Greek, to examine
- Why: detect occludable angles
diagnose secondary glaucomas
select/perform glaucoma treatment
evaluate effect of treatment

Cyclodialysis cleft

GONIOSCOPY

- Gonia = Greek, angle
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- Why: detect occludable angles
diagnose secondary glaucomas
select glaucoma treatment
evaluate effect of treatment
Patterns of Care for Open-angle Glaucoma in Managed Care

Objectives: To describe patterns of care for primary open-angle glaucoma (POAG) and their consequences. The American Academy of Ophthalmology Task Force on Practice Parameters for POAG in Managed Care, 1999.

Methods: We surveyed retina specialists, corneal specialists, and primary care physicians to determine the frequency of gonioscopy and iridoplasty in POAG patients.

Results: Only 47% of glaucoma patients had gonioscopy done at initial visit specifically for glaucoma evaluation.

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Comparing Gonioscopy With Visante and Cirrus Optical Coherence Tomography for Anterior Chamber Angle Assessment in Glaucoma Patients

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Visante and Cirrus OCT imaging may have limited ability to identify angle closure because of difficulty identifying angle structures. Gonioscopy by well-trained clinicians has remarkably consistent agreement for identifying angle closure risk.
Goniolenses

- Zeiss / Posner
- Advantages:
  - Indentation gonioscopy
  - Fast, really fast (46 sec – 1min 16 sec)
  - No solution required
  - No lens rotation
  - WRVU – 0.37 / MC fasc fee 20.52
- Disadvantages:
  - Initially difficult to master

PAS

- Superiorly = primary angle closure
- Inferiorly = previous iritis
- ICE syndrome
- Angle dysgenesis
- Previous ALT / previous surgery
Iris Processes

- Normal variant
- Lacy tissue diffusely onto TM
- Do not confuse with PAS

Pigmentation

- PDS = solid brown pigment line in TM
- PSXF = discontinuous black pigment
  "granular"
- Sampaolesi line = pigment on Schwalbe's line inferiorly
- Some angles, either pathologic or normal, may have no pigment at all

NVI

- R/O in diabetes or other retinal vascular disease
- Small, arborizing vessels crossing the scleral spur
- Large vessels are not NVI
- May be visible in angle only – 13% of patients developing NVG had neovascularization identified initially in angle only
Iridoplasty

Why?
- not all angle closure is pupillary block
- incidence of non-pupillary block angle closure may increase
- plateau iris may be underdiagnosed

Prevalence of Plateau Iris in Primary Angle Closure Suspects

An Ultrasound Biomicroscopy Study

Younger patients were 40 years old or less. 67 of 2864 patients diagnosed with angle closure at age 40 or less were identified. ~50% of those had plateau iris. ~10% had ROP. "Iridoplasty might be beneficial in these patients."
Take home points

- Gonioscopy is required for taking care of any patient with any pressure-related issues...and more
- Not all angle closure is pure pupillary block – remember plateau iris
- Inquire about ROP history in any younger high myope with angle closure – may need PI or iridoplasty or both
- Iridoplasty will not work if angle long-term synechially closed, or if application not as peripheral as possible

Take home points

- Instead of watching The Kardashians, watch...
  - www.gonioscopy.org
  - www.curriculum.iowaglaucoma.org
Good luck Tar Heels!!