

Diagnosis and characterization of Primary angle closure disease

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Financial disclosure

- Alcon C
- Allergan C
- Novartis C
- Santen C
- Pfizer C
- Sun C

What is angle closure ?

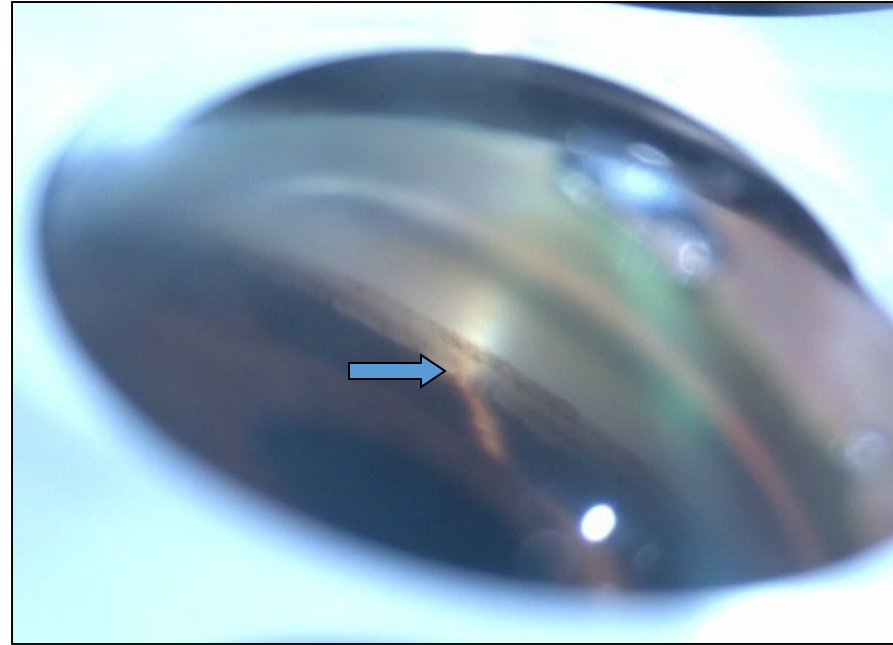
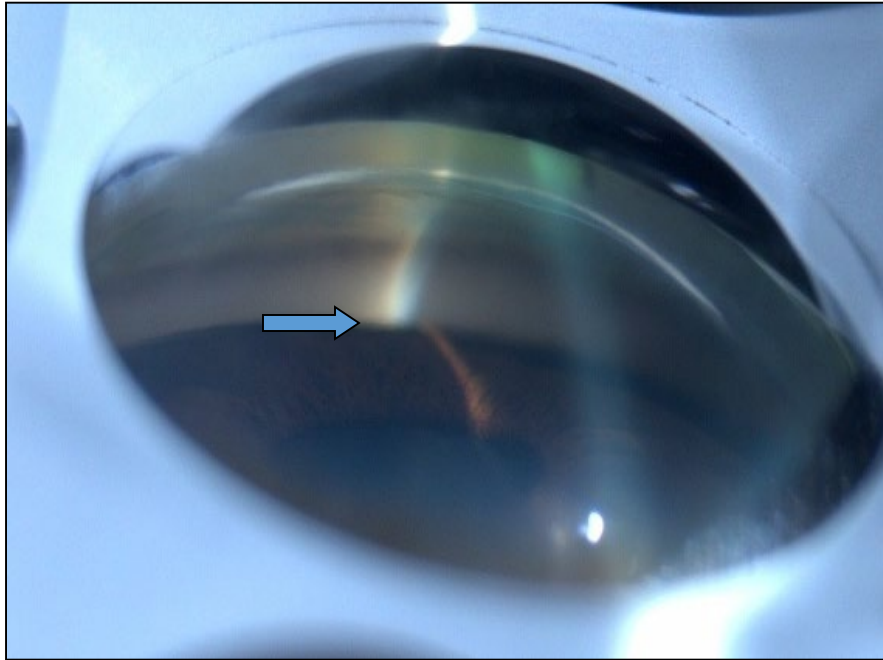
Mechanical occlusion of the filtering portion of the trabecular meshwork by the peripheral iris

Clinically

Non visibility of the pigmented trabecular meshwork on gonioscopy

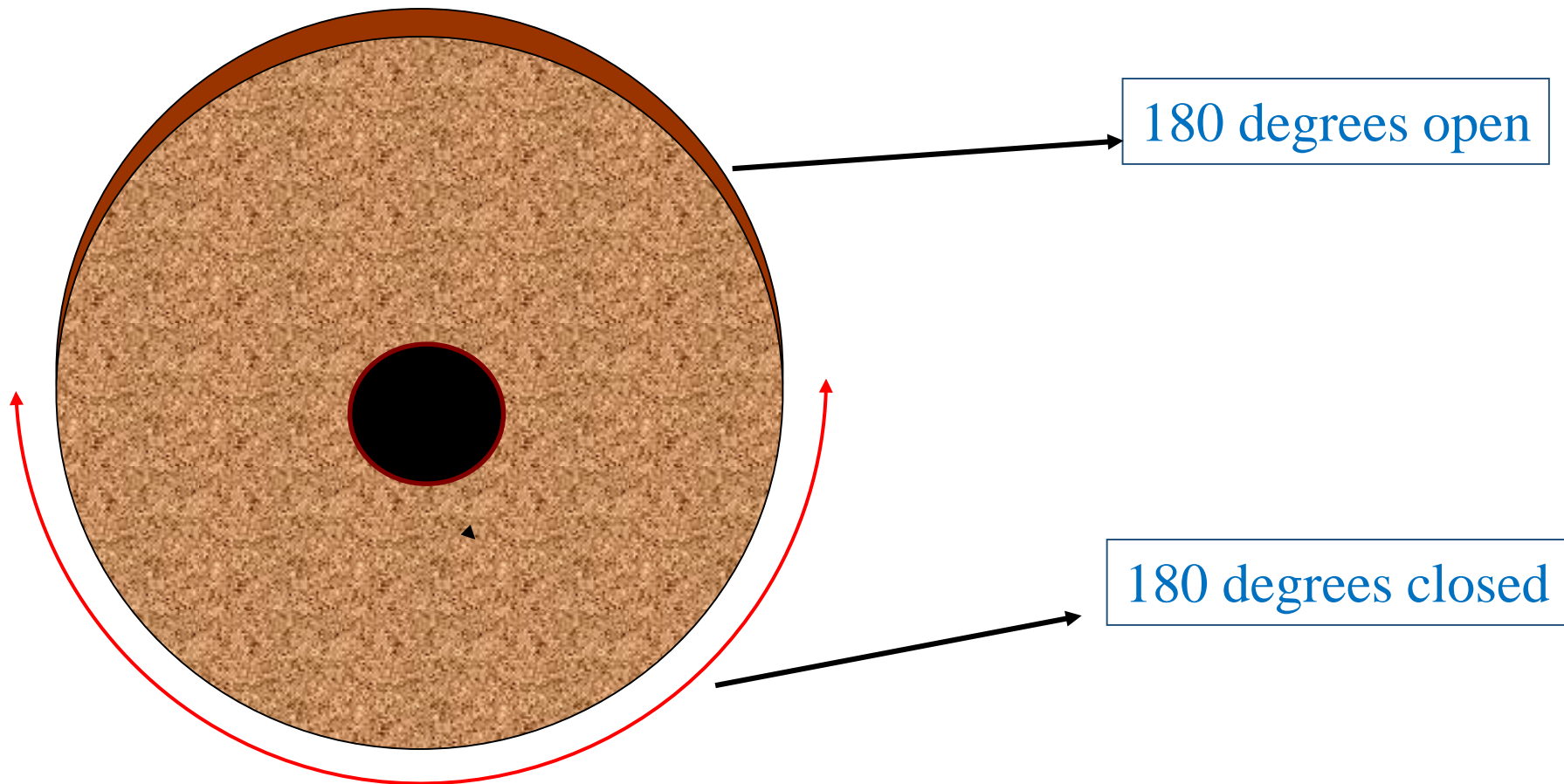
How do you diagnose PACD ?

- Gonioscopy
- Features suggestive of acute angle closure
- IOP
- Disc / Visual fields



Primary angle closure suspect

> 180 degrees closed



Primary angle closure suspects (PACS)

- “Normal” IOP
- No PAS
- No disc/ field changes
- Previously – *Narrow / occludable angles*

Features s/o intermittent angle closure

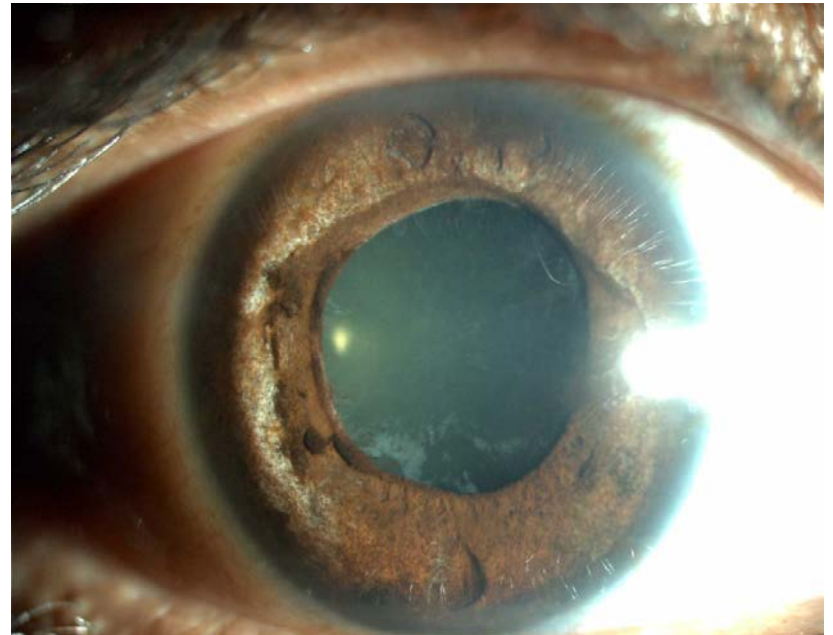
- Symptoms

Symptoms s/o intermittent closure

	Yes	No
Beijing (1989)	34(80%)	9
Taiwan	6(35%)	11
Mongolia	3(21%)	11
Singapore	6(42%)	8
APEDS	2(15%)	10
CGS	1(1.5%)	68

Features s/o intermittent angle closure

- Symptoms
- Pupillary ruff atrophy
- Glaucomflecken
- Patchy TM pigment on gonioscopy
- Typical iris atrophy



Primary angle closure (PAC)

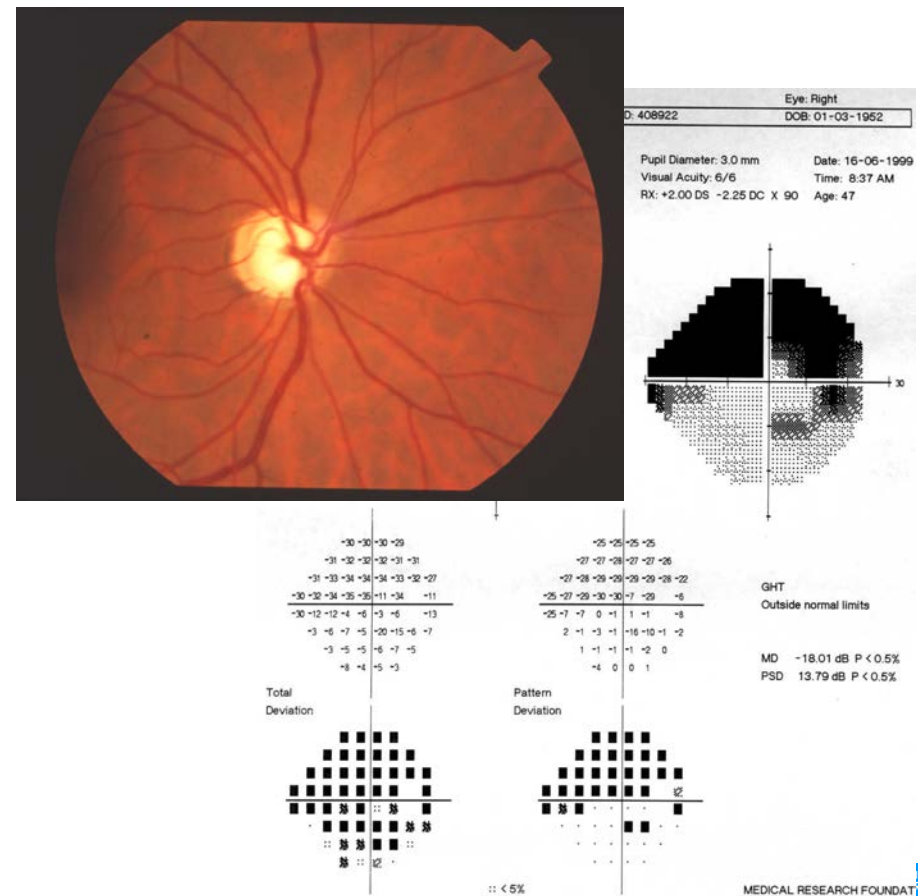
PACS with

- Elevated IOP (appositional) and/or PAS*(synechial and/or features suggestive of intermittent angle closure (iris atrophy, glaucomflecken, distortion of radial iris pattern)
- No disc/ field changes
- Previously – *Angle closure glaucoma*



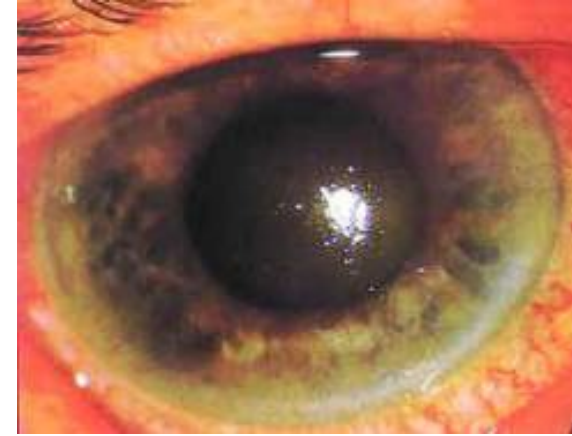
Primary angle closure glaucoma (PACG)

- Primary angle closure suspect with evidence of **structural (disc) and functional (field) damage**
- Raised IOP or PAS not mandatory



	PACS	PAC	PACG
Raised IOP	-	+/-	+/-
PAS	-	+/-	+/-
Features s/I intermittent closure	-	+/-	+/-
Glaucomatous disc damage	-	-	+
Visual field damage	-	-	+

Terminology



*Classification as glaucoma requires the presence of **structural (disc) or functional (field) damage***

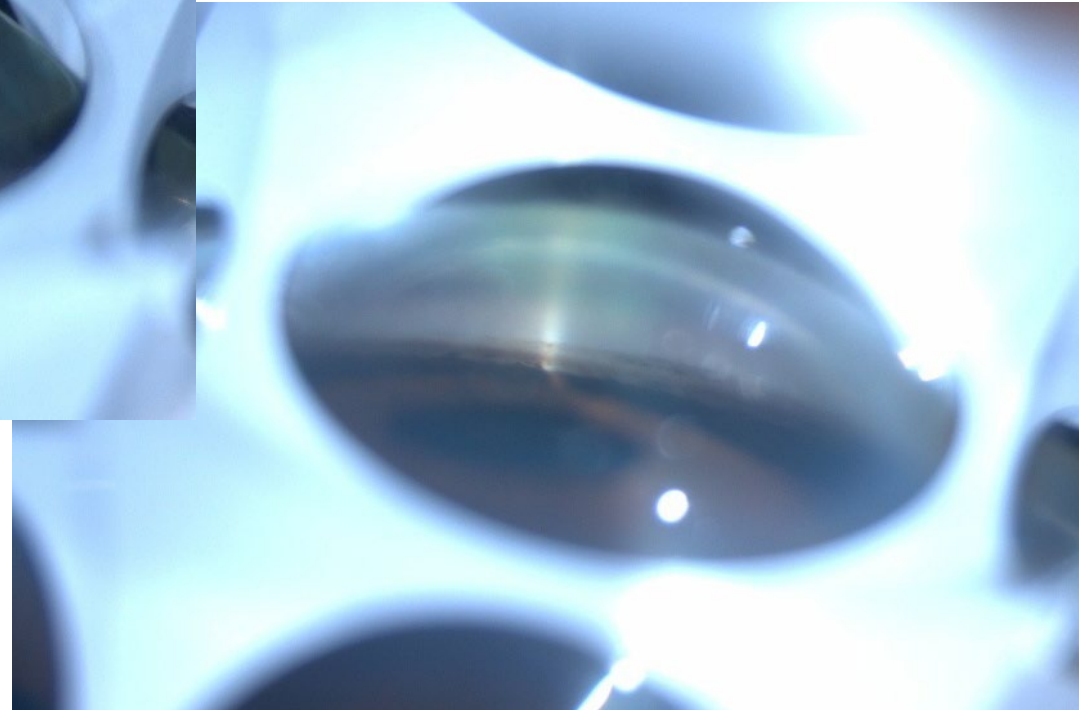
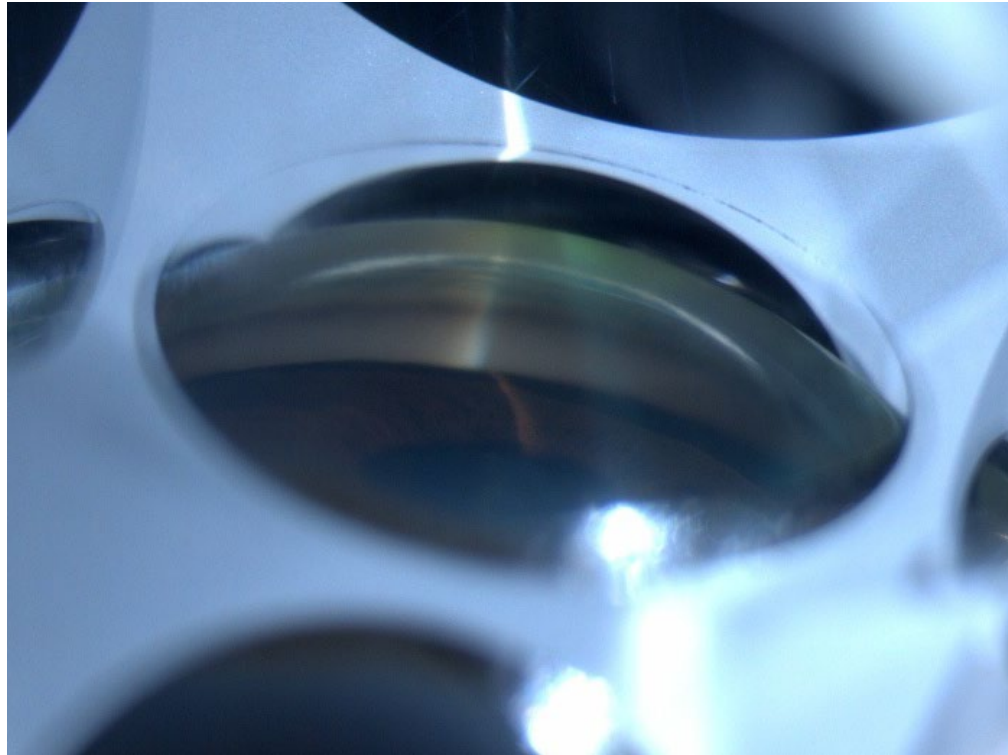
~~Acute primary angle closure glaucoma~~

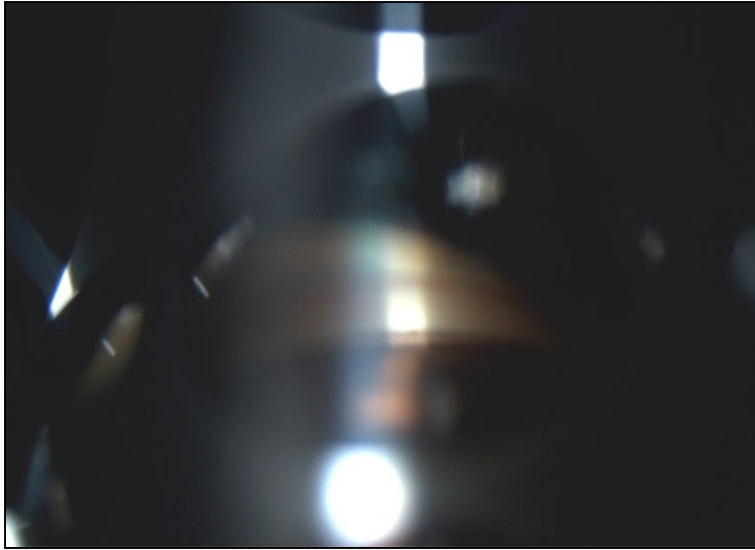
APAC : Acute primary angle closure

What I would like to know after gonioscopy

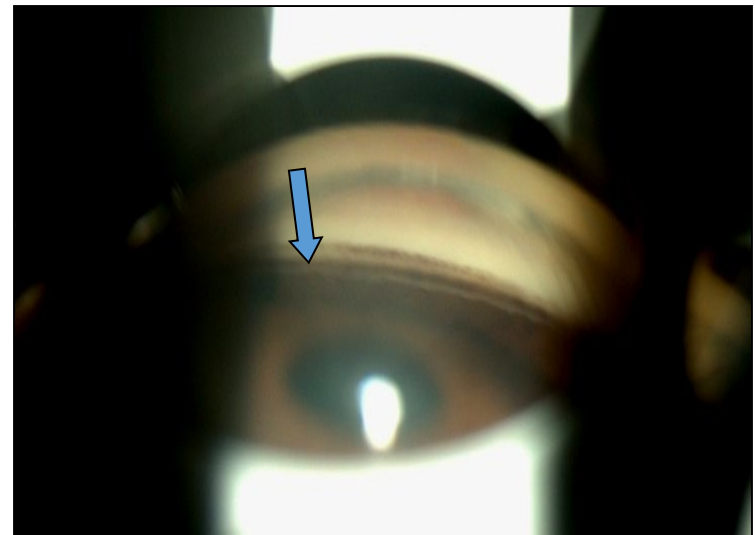
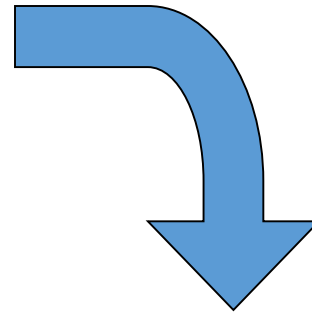
- How easy is it to open ?
- If narrow – How easy is it to indent open
- Any pigment - distribution
- Any PAS ?
- Convexity of the iris
- Is there a plateau iris configuration ?

Light and dark changes

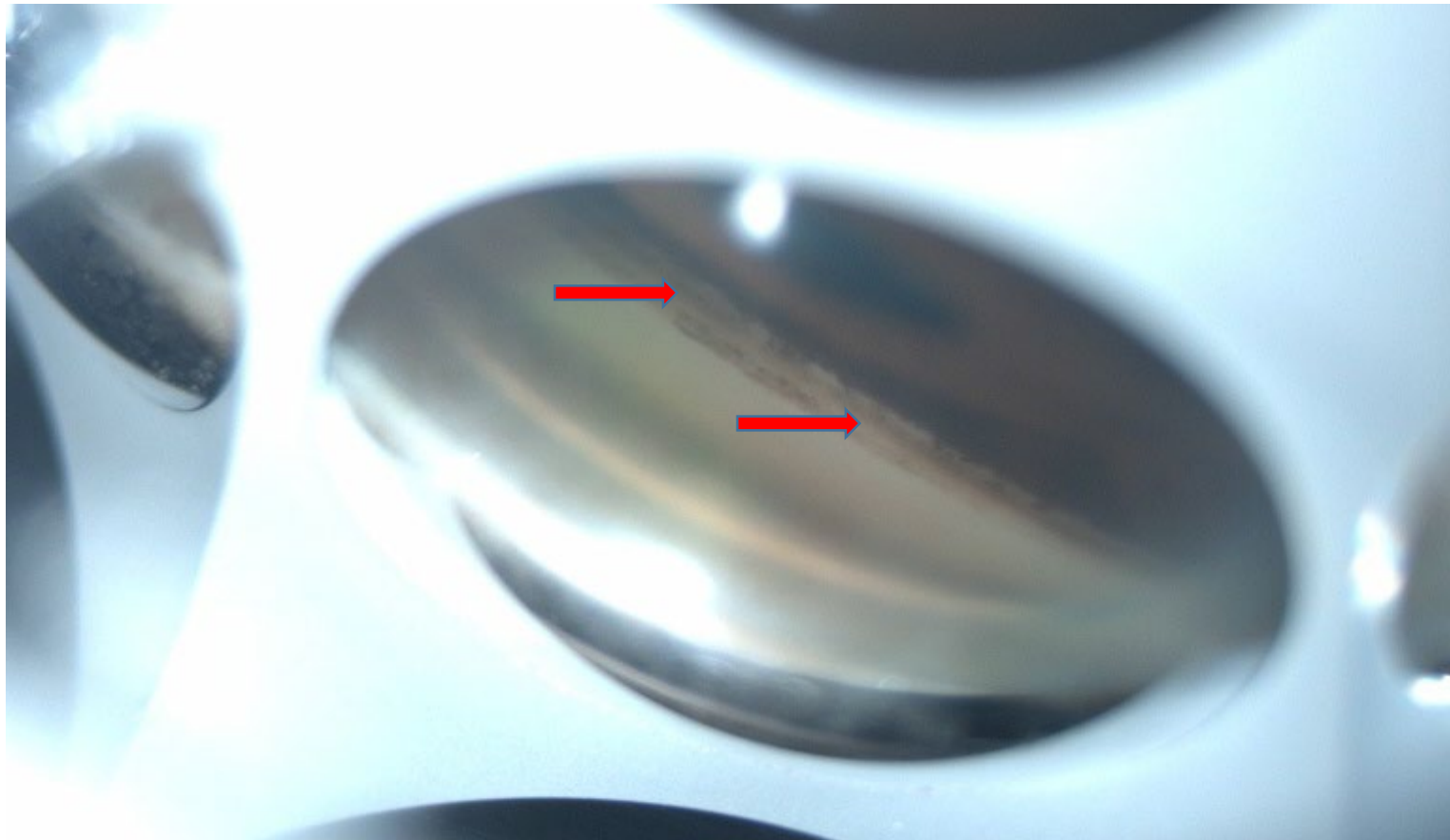




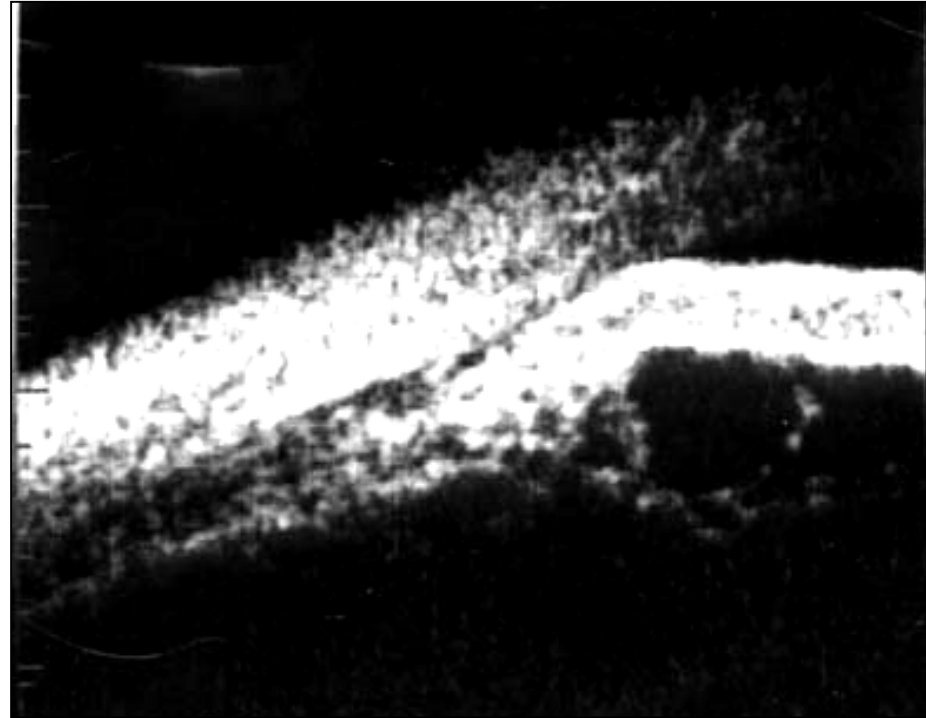
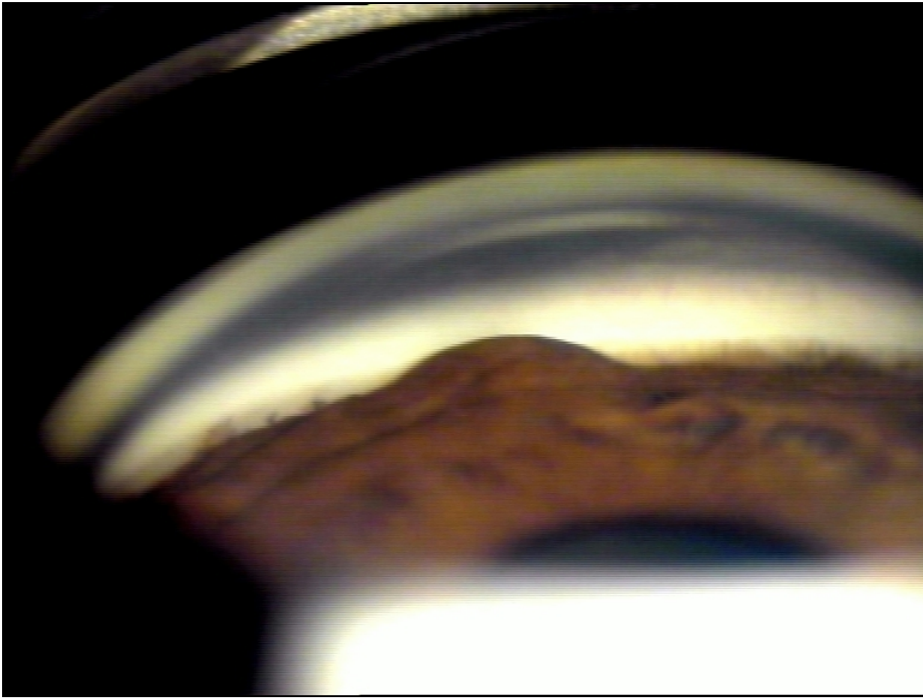
On compression



Patchy TM pigment



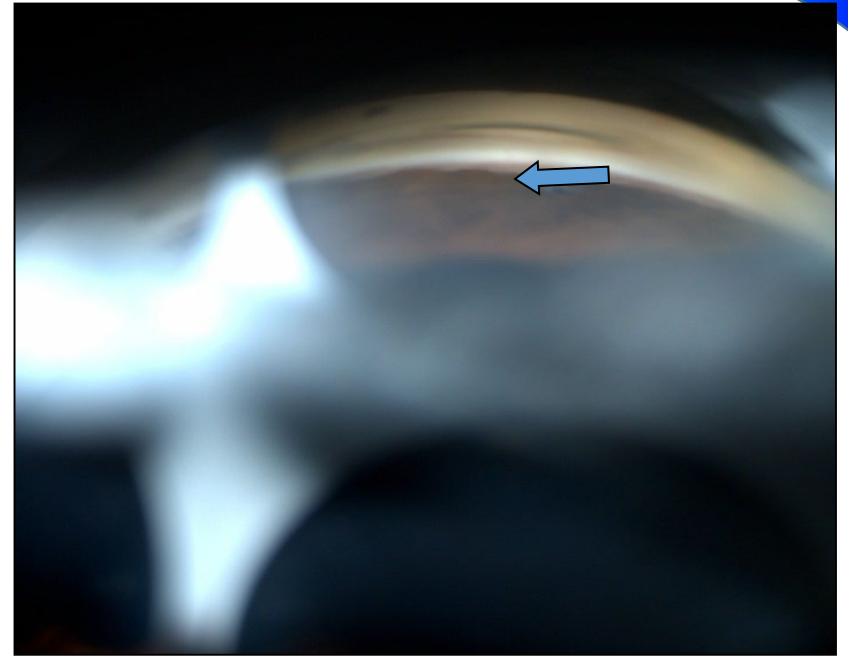
Localized narrowing



Gonioscopy post PI

- As important in characterising disease as pre-procedure gonio
 - Did the angle open ?
 - Are there PAS ?
 - Is the angle still closed ?
 - Is there a plateau iris configuration ?
 - How convex is this iris?

Primary Angle closure— Post PI



Plateau iris

- 25 – 30% of eyes with angle closure

Pupillary block vs non pupillary block

Plateau iris configuration



What else would I like to know

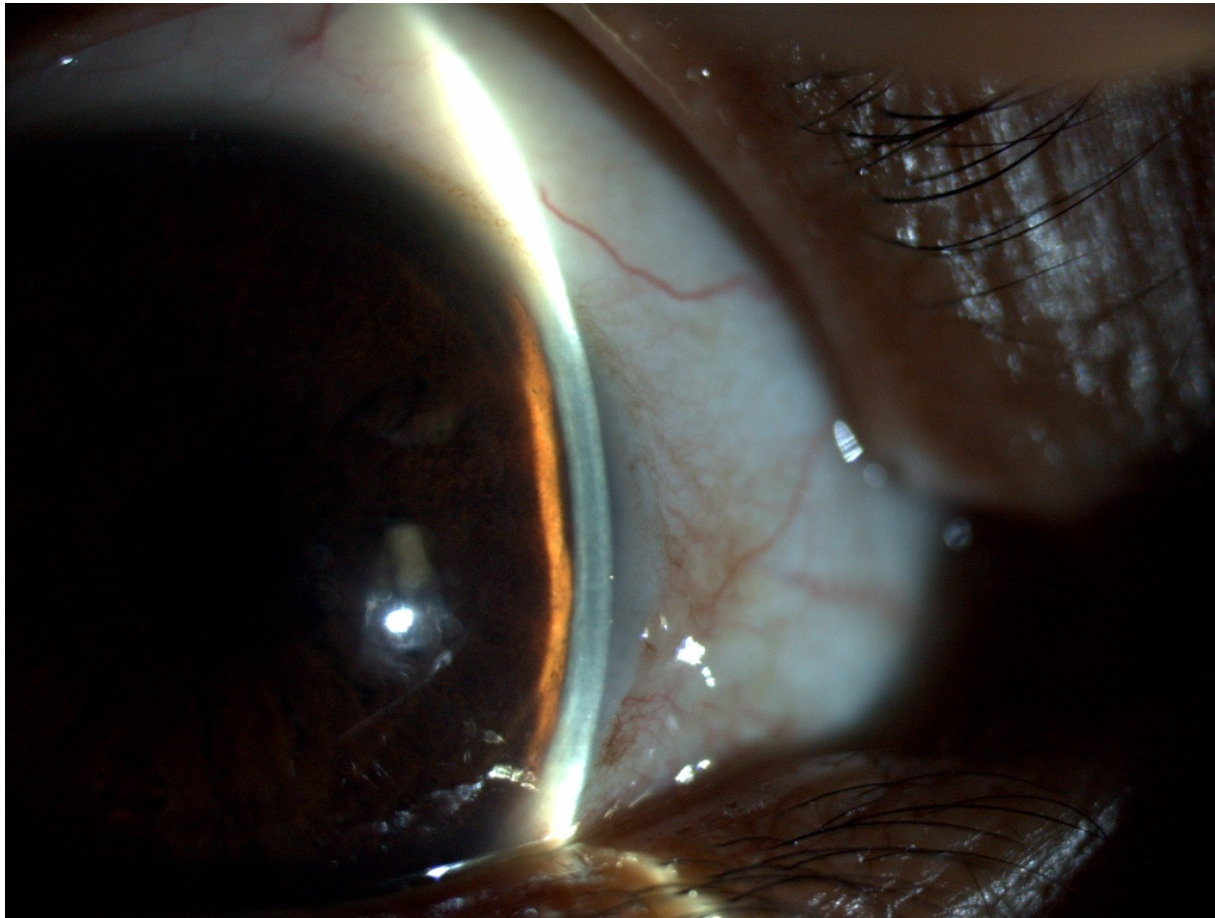
- Refraction
 - Consider Biometry in high hyperopes
 - Large lens
 - r/o nanophthalmos
 - In high myopes
 - Look for a lens component

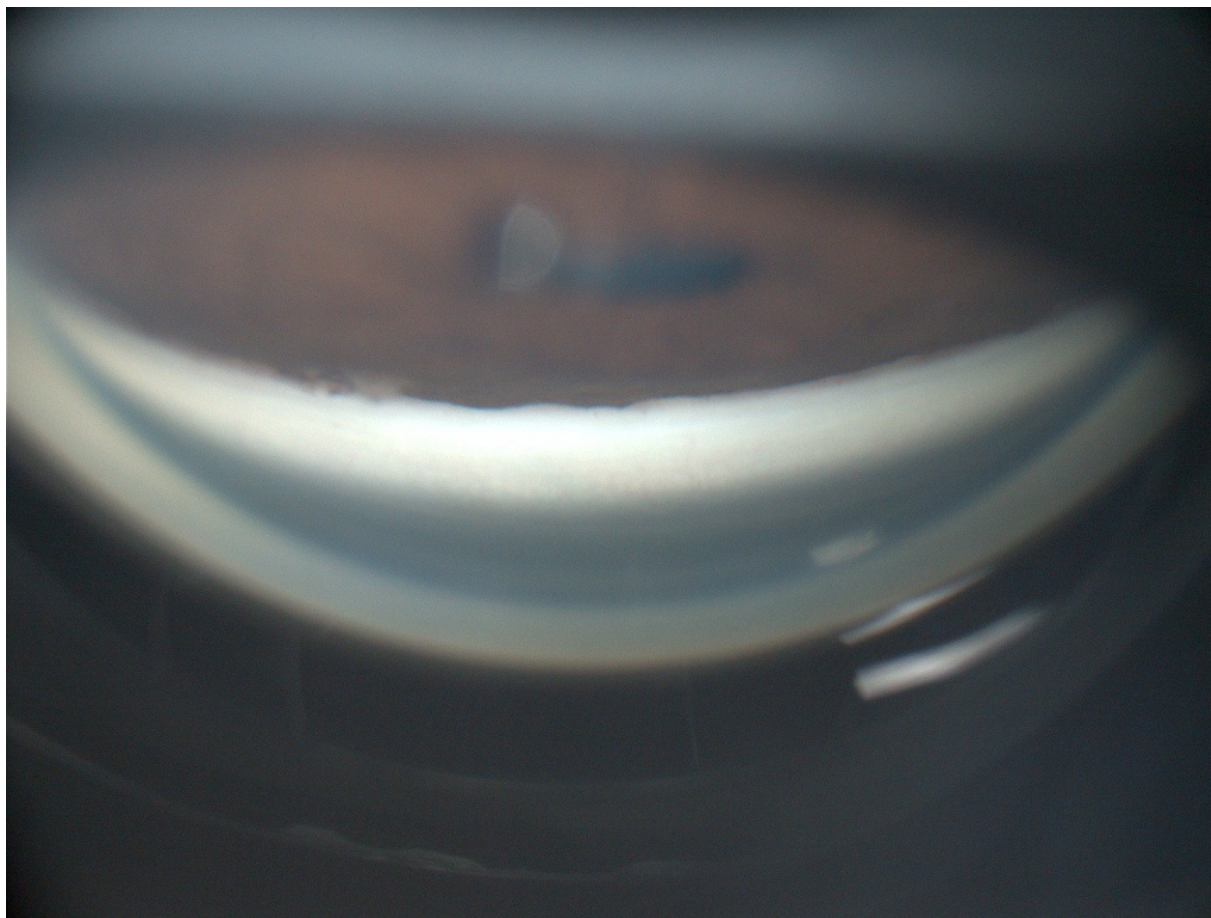
Angle Closure Disease

- Clinical diagnosis
- Investigations
 - Support clinical suspicion
 - UBM
 - AS OCT

Pseudo plateau iris

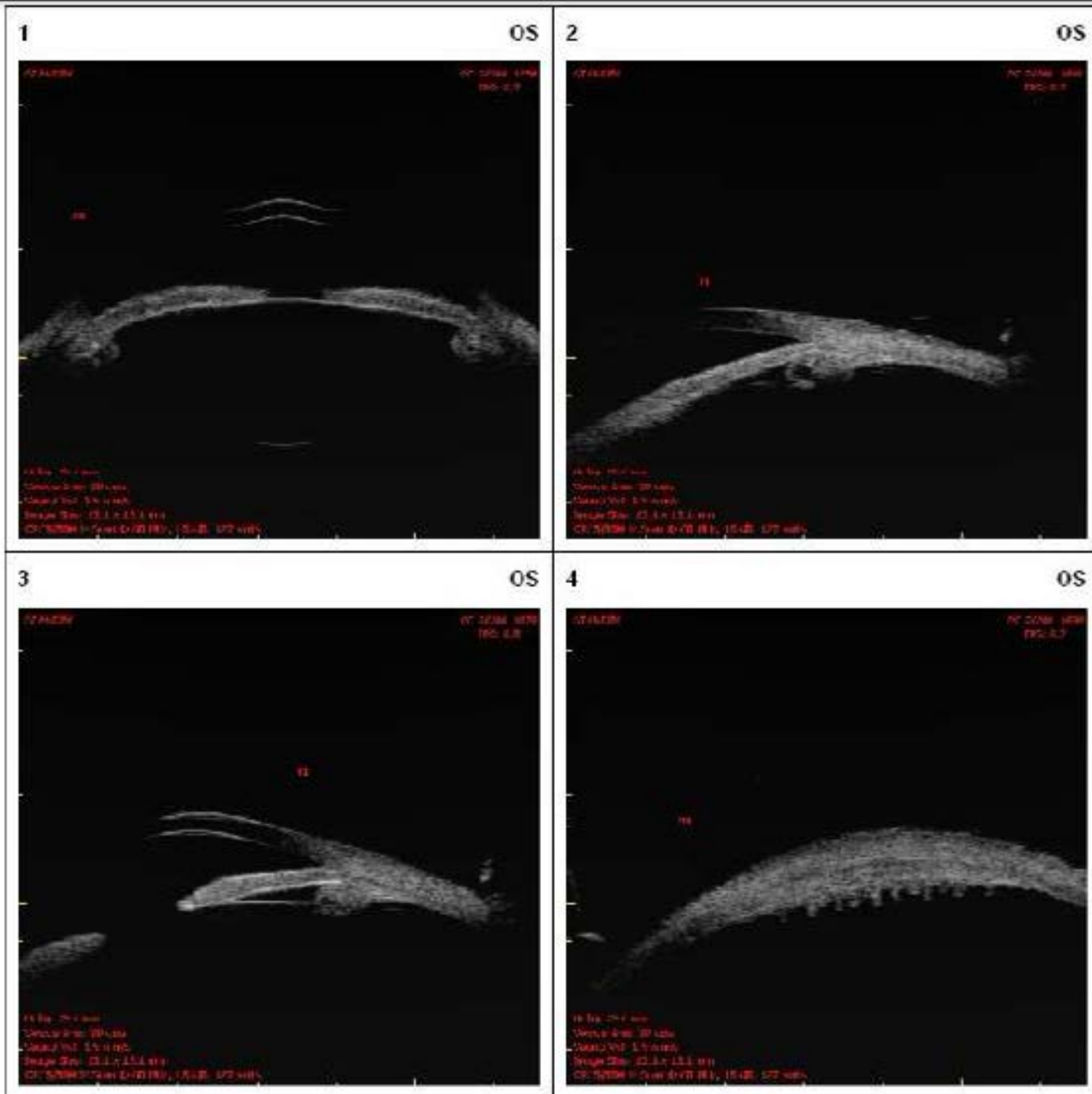
38 year old male myope (-3 D)







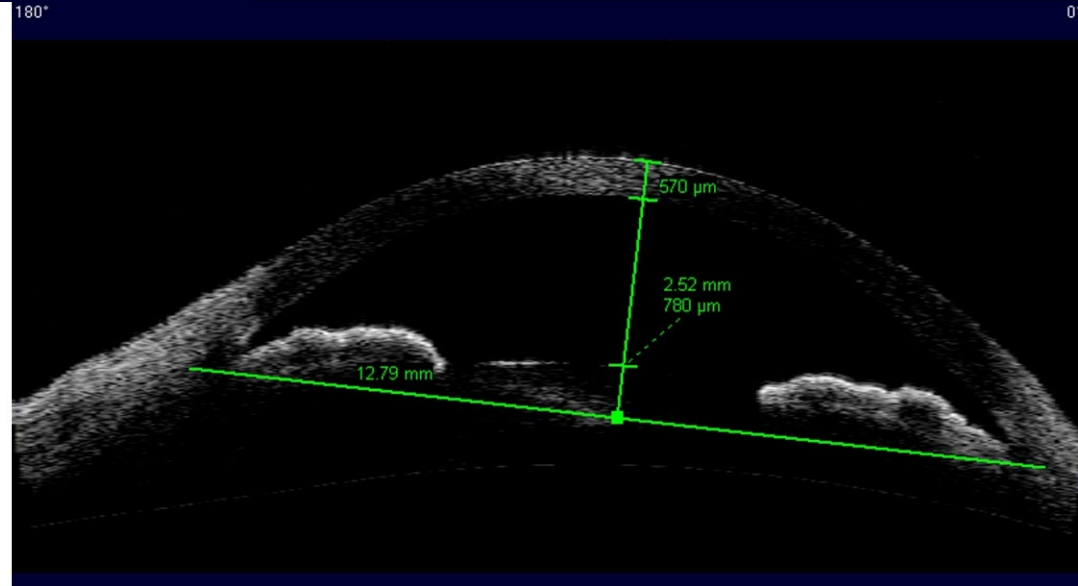
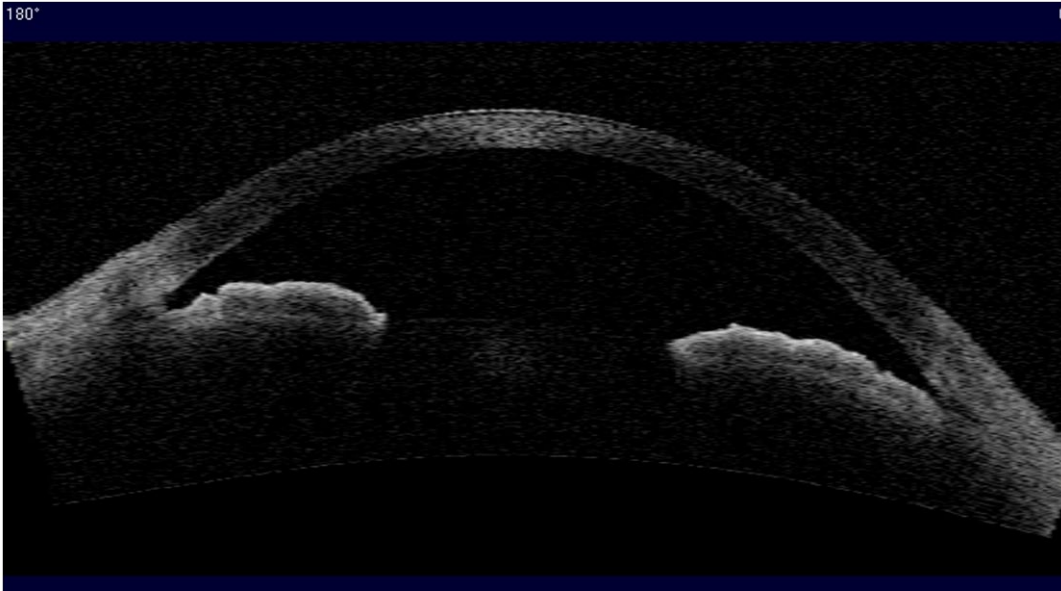
OS

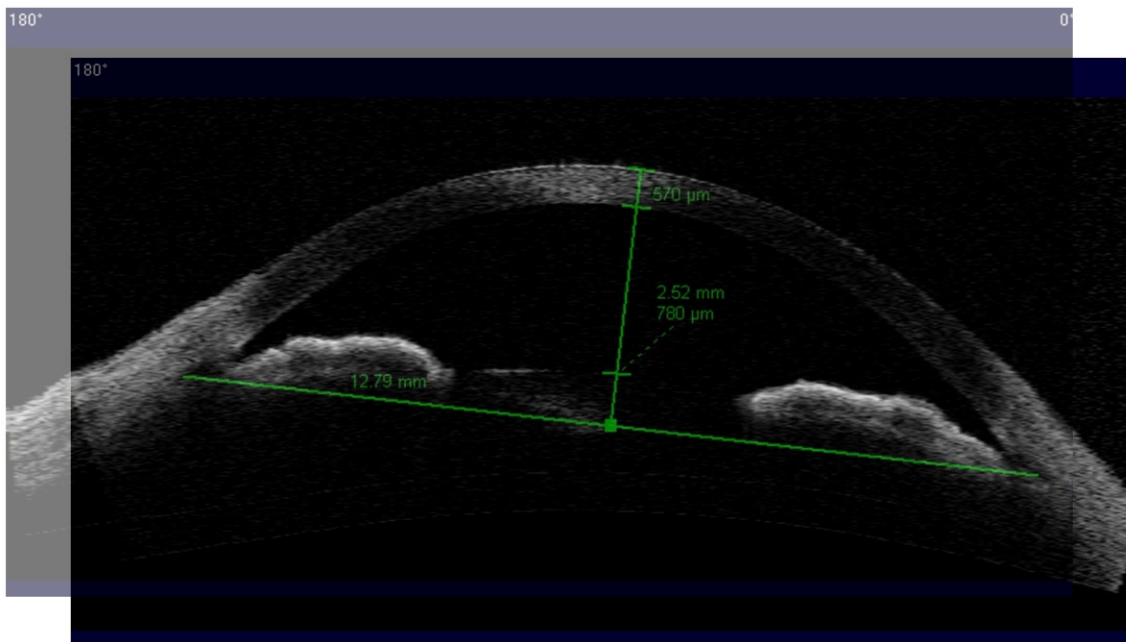


ASOCT

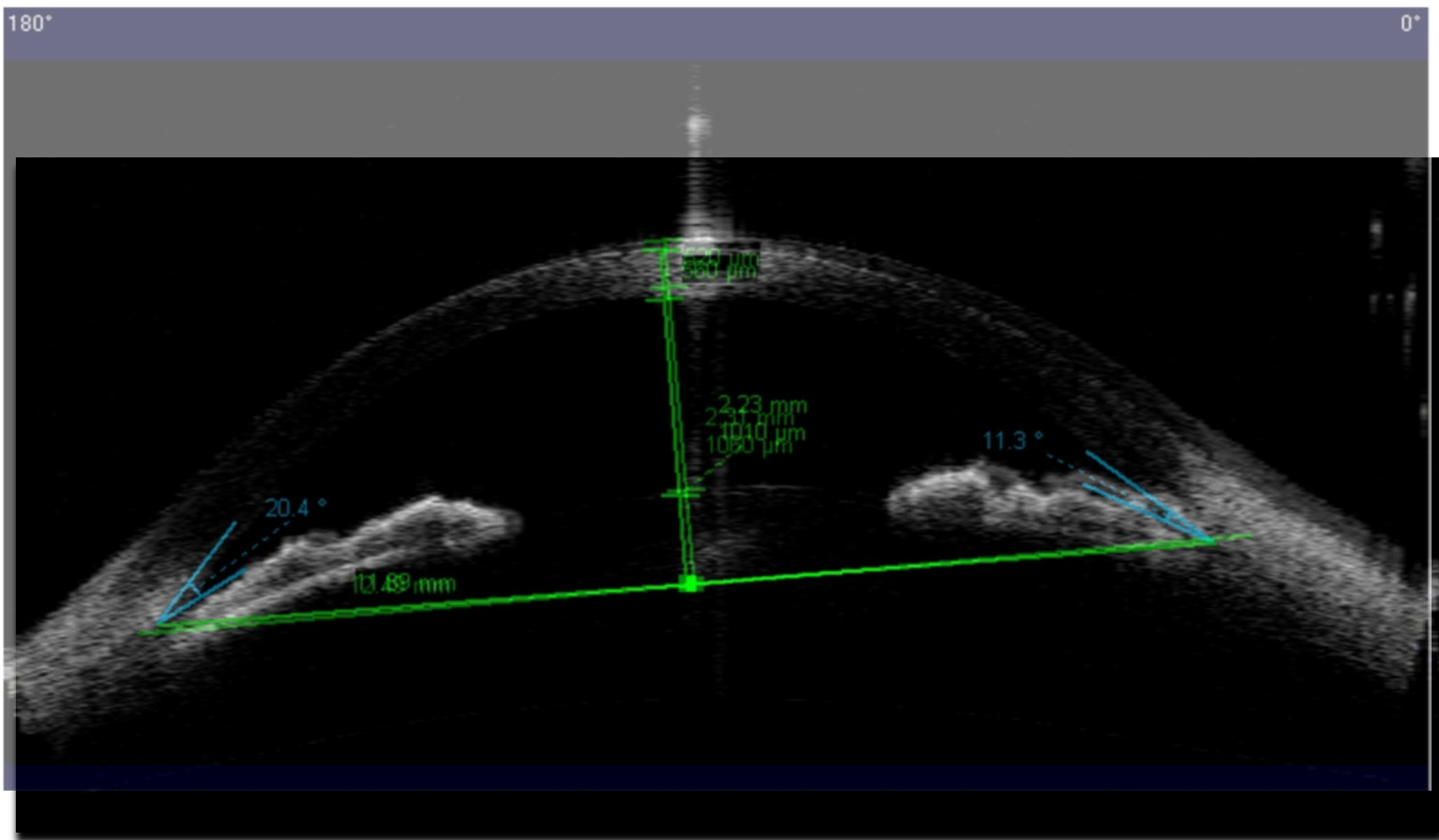
- Angle width changes over time
 - Scan may not overlap the same part of the angle
- Lens vault

ASOCT done 6 years apart



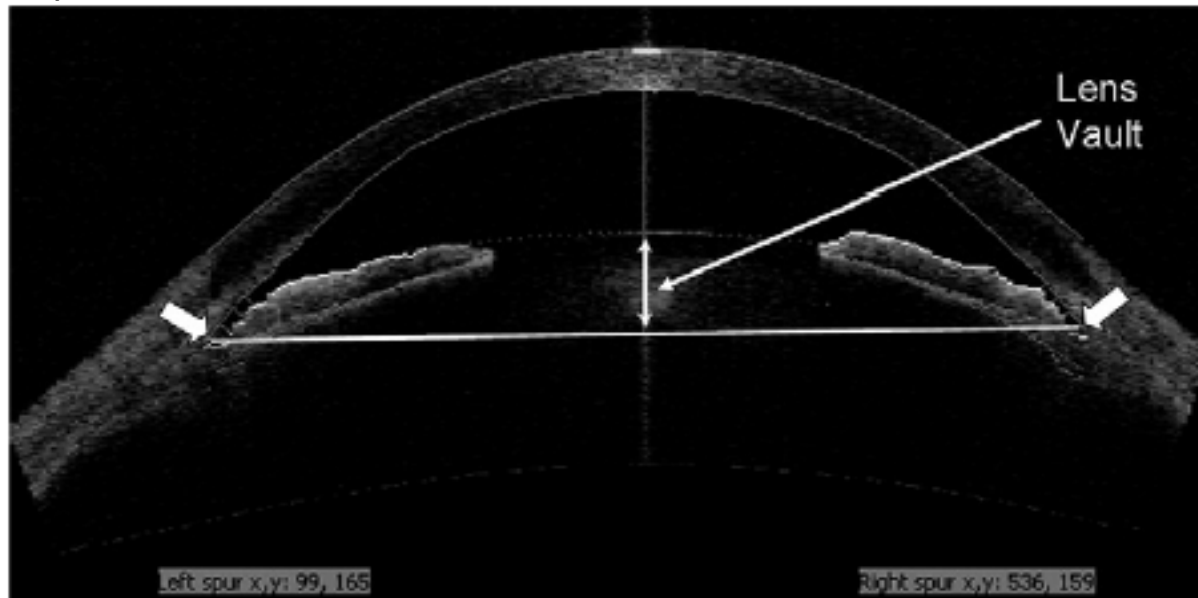


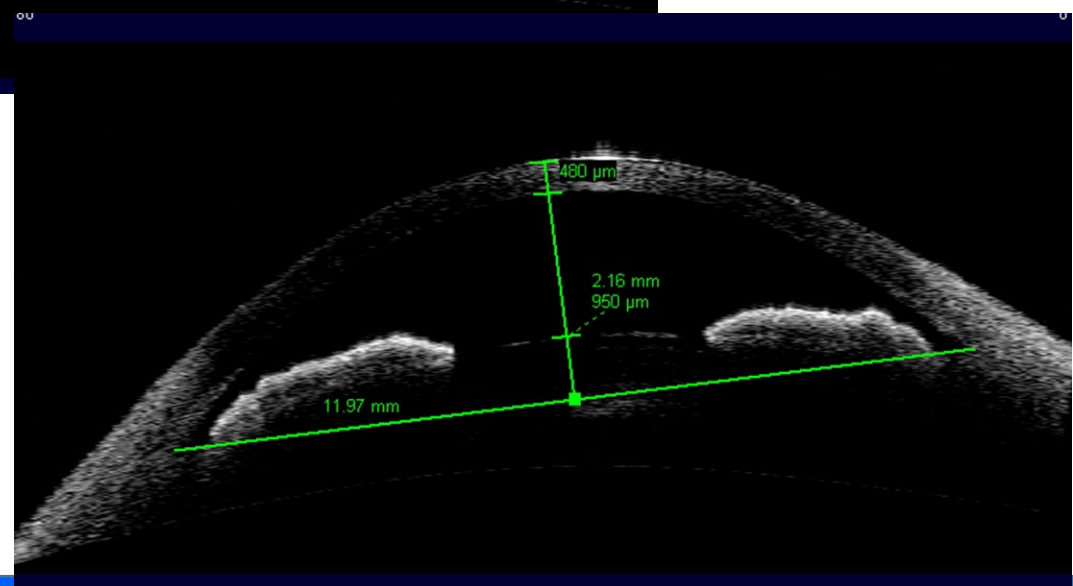
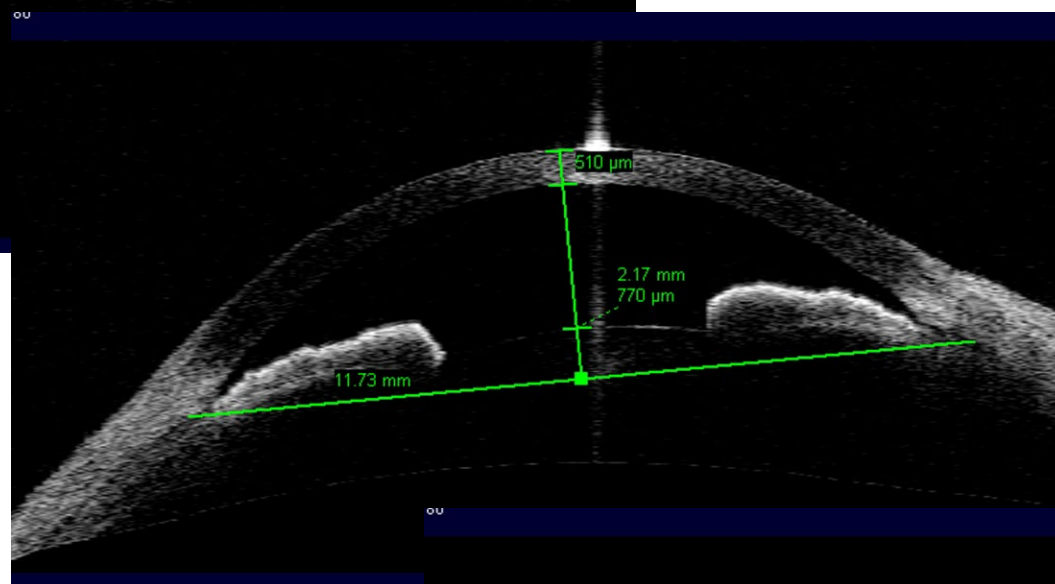
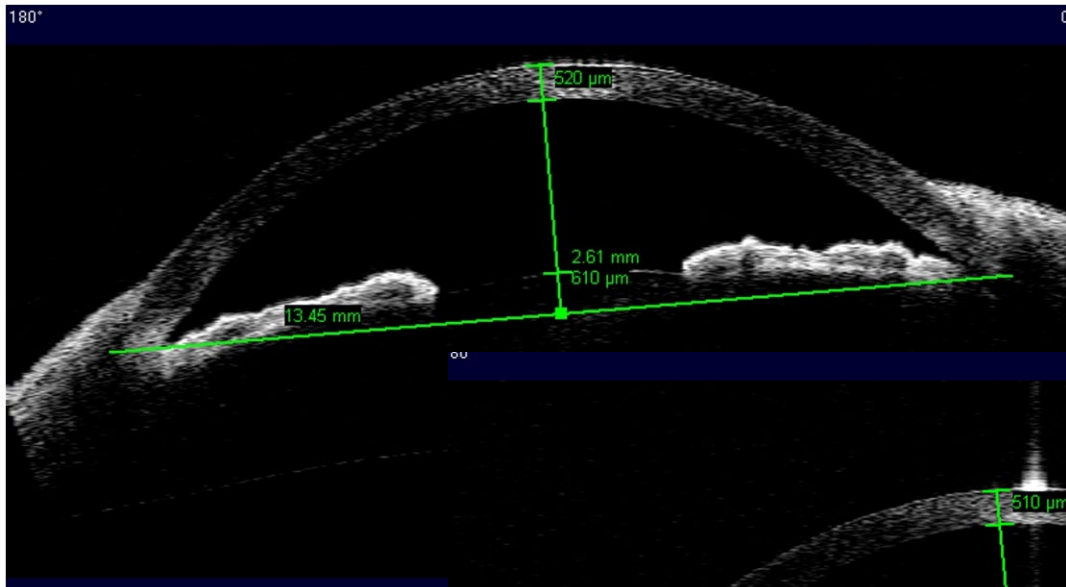
Narrow angles ASOCT



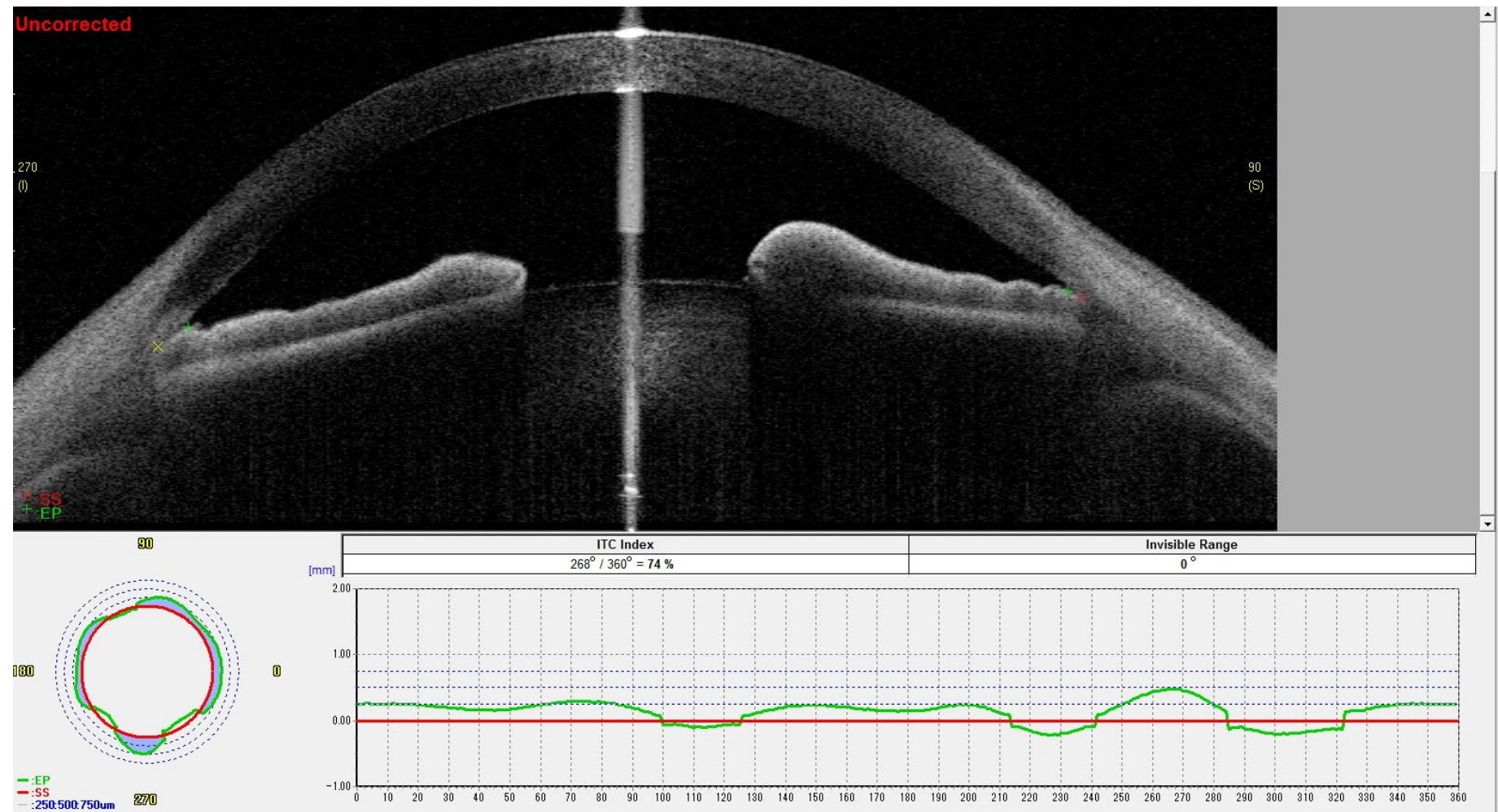
Lens vault

- Significantly greater in angle closure V (901microns vs. 316 microns , $p = 0.001$)

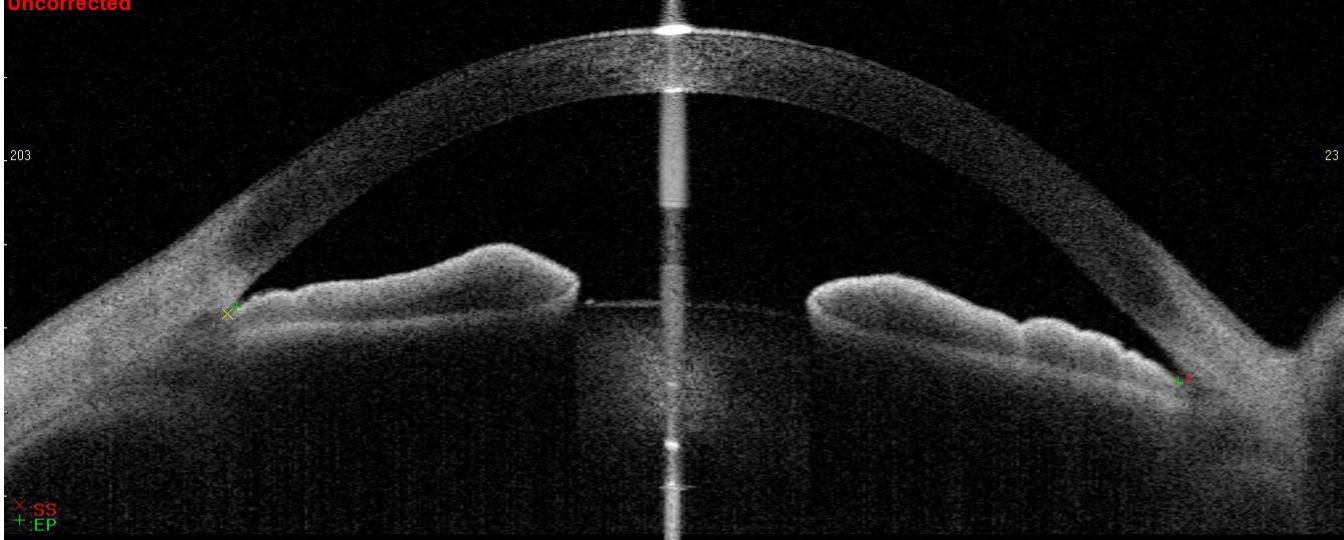




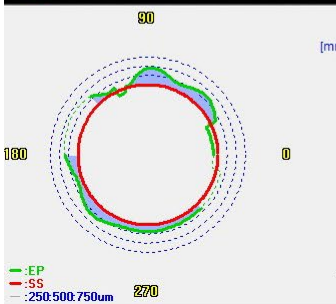
360 degree angle



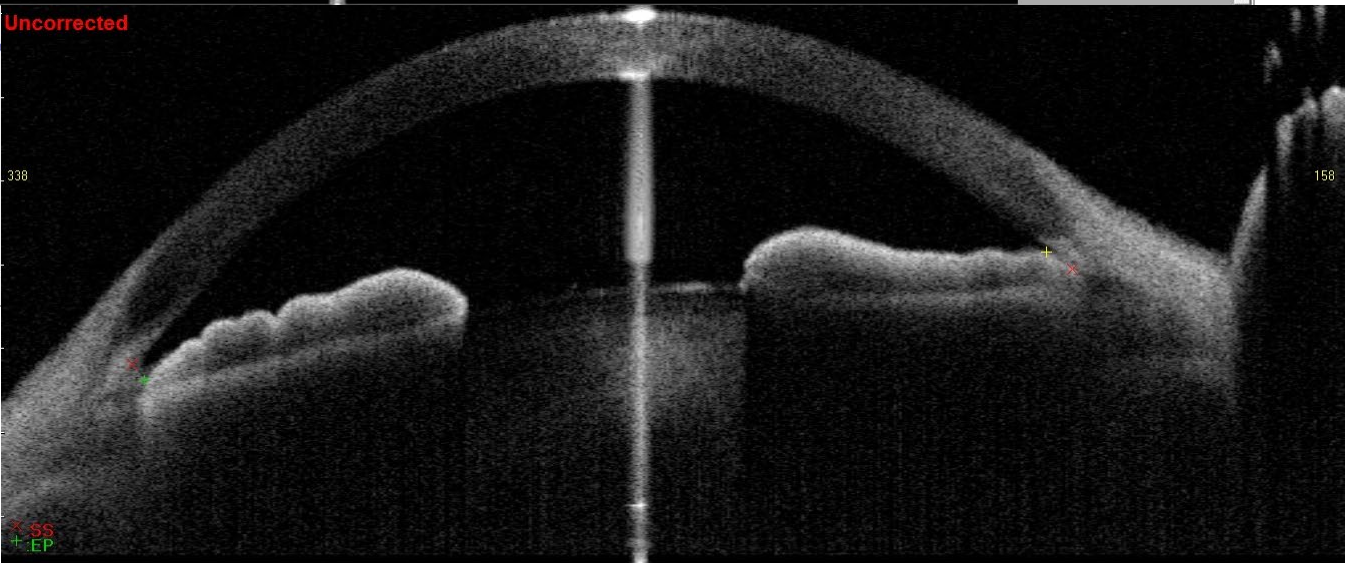
Uncorrected



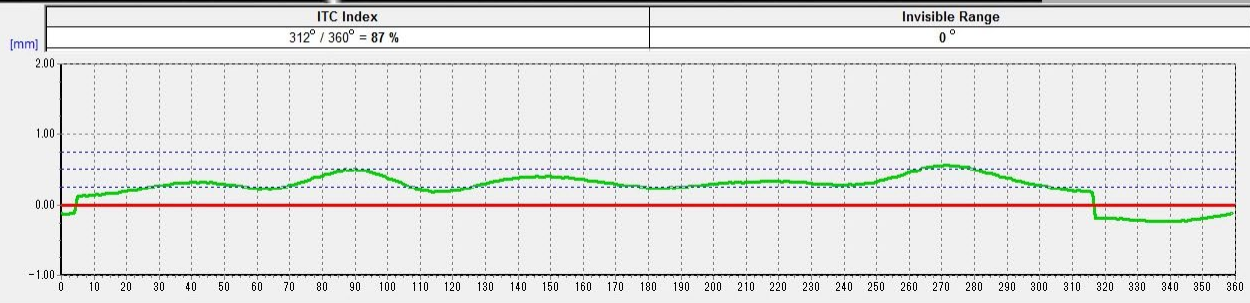
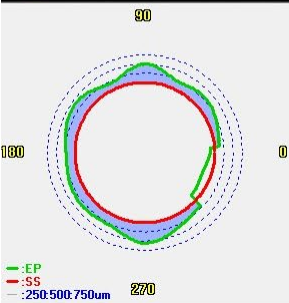
x:SS
+:EP



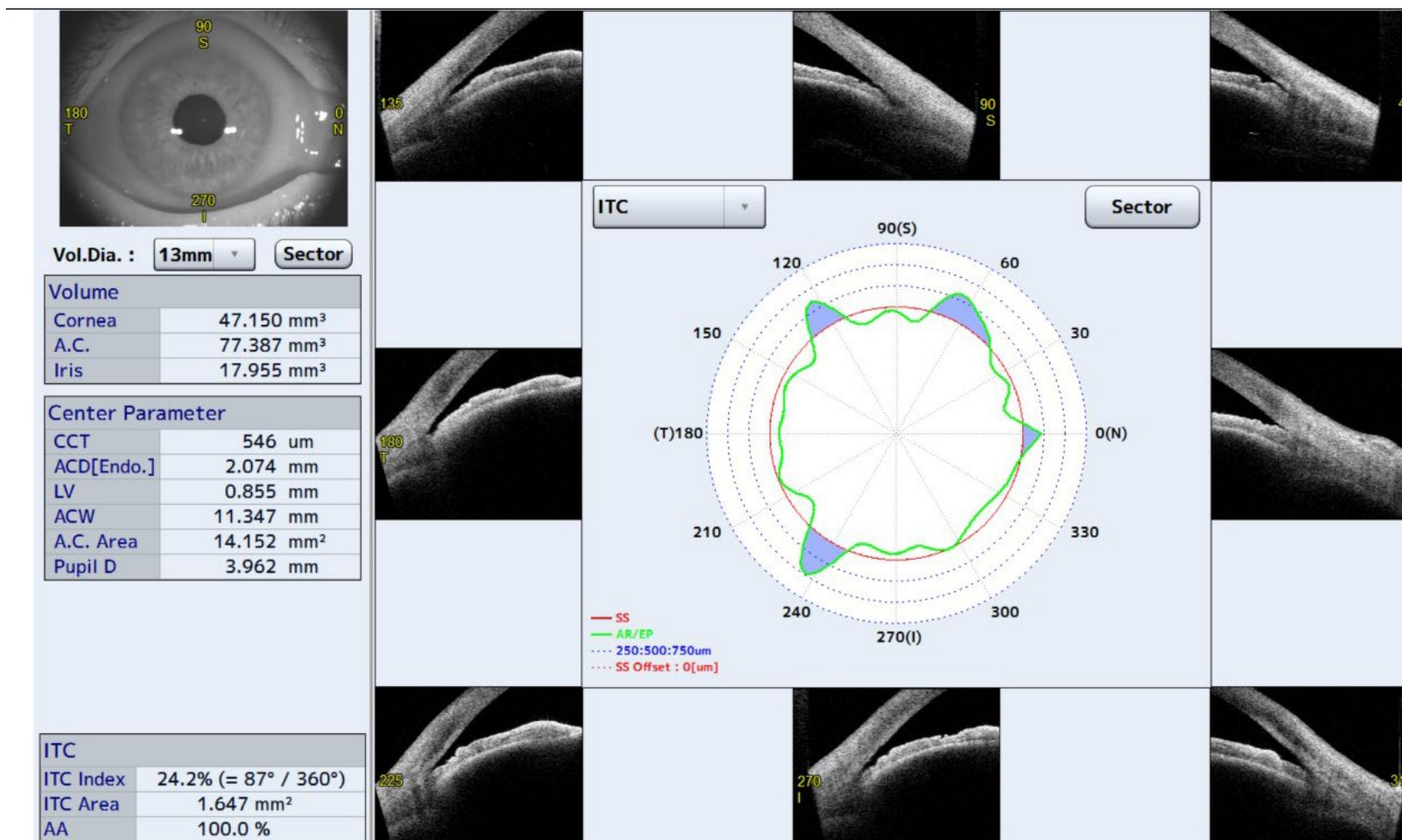
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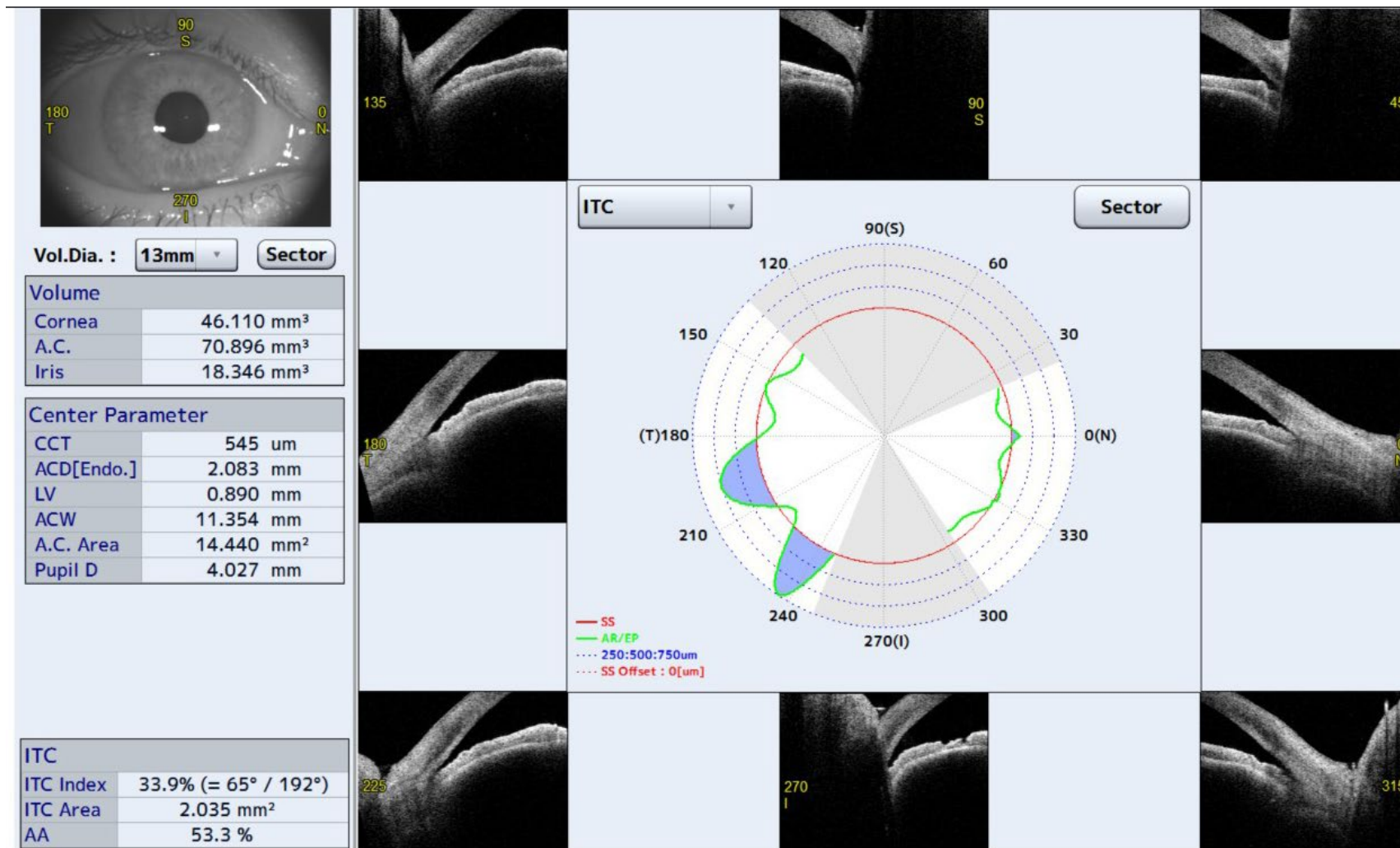
x:SS
+:EP



Bright



Dark



Summary

- A careful assessment of the angle gonioscopically is central to characterising angle closure disease
 - Testing conditions
 - Indentation
- ASOCT and UBM have a limited role in assisting diagnosis
 - Pseudo plateau iris
 - Lens Vault

Thank you