Difficult RNFL assessment

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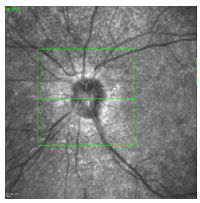
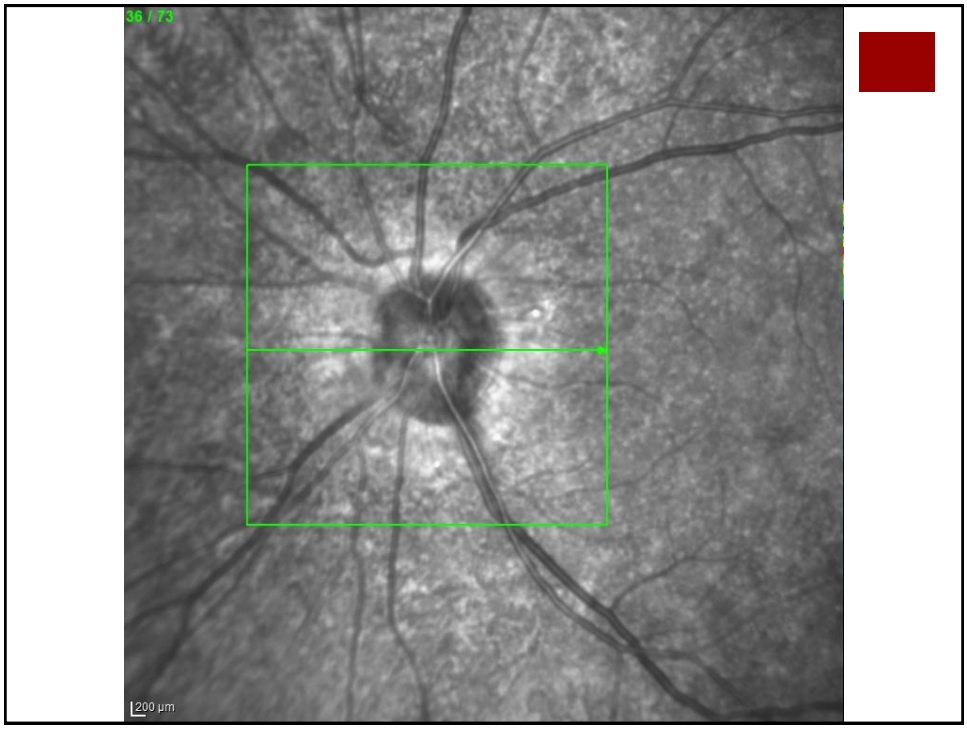
Difficult RNFL assessment

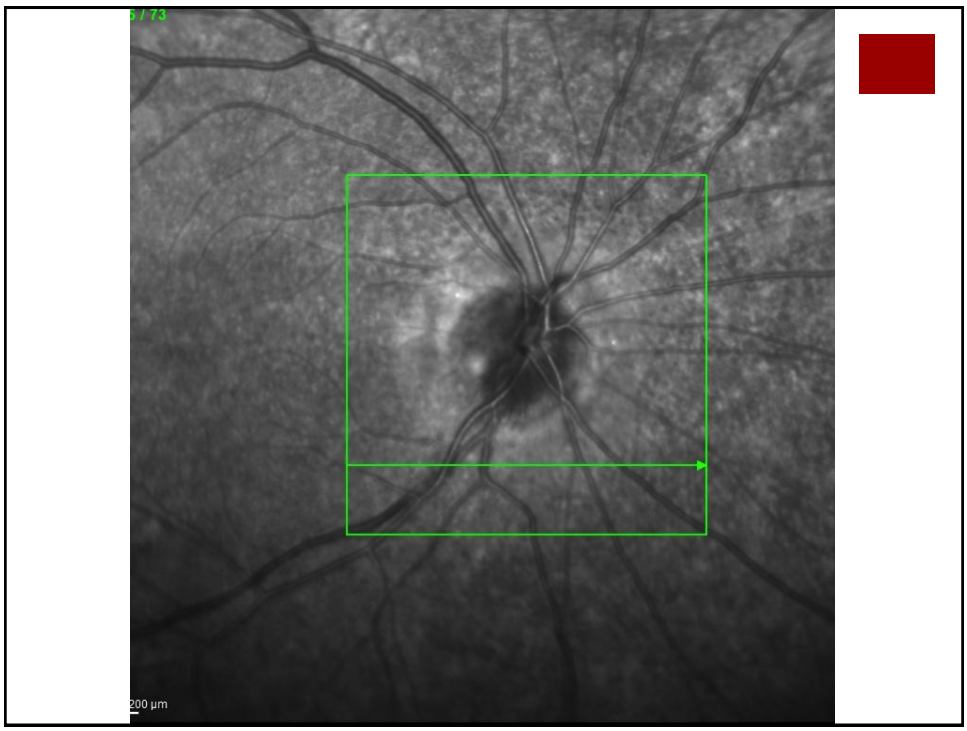


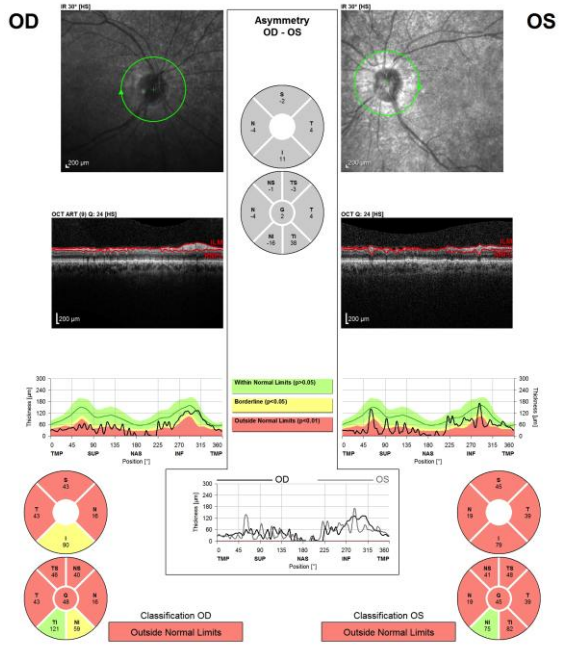
Male 45years old

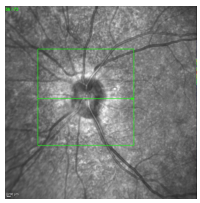
High myope

For OCT optic nerve for follow up for glaucoma


36 / 73
200 µm

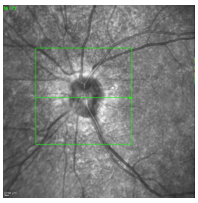

200 µm





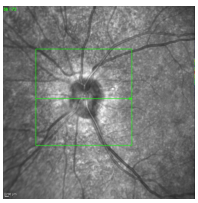
Difficult RNFL assessment

- Optical coherence tomography (OCT) is a useful instrument for the diagnosis and follow-up of glaucoma, owing to its excellent ability to quantitatively assess the thickness of the peri-papillary retinal nerve fiber layer (RNFL)



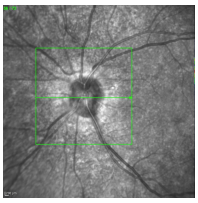
Difficult RNFL assessment

- Myopia can be a confounding factor in the assessment of RNFL thickness attributed to its influence on the RNFL thickness.
- Therefore, careful interpretation of RNFL data, especially those obtained from eyes with moderate-to-high myopiais are highly recommend



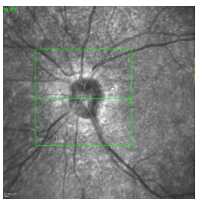
Difficult RNFL assessment

- Myopia is one of the most common ocular abnormalities reported worldwide
- Its association with glaucoma is well recognized
- The prevalence of myopia is high in patients with ocular hypertension, primary open-angle glaucoma, and normal-tension glaucoma
- The risk of developing glaucoma is two to three times higher in myopic individuals than in non-myopic individuals



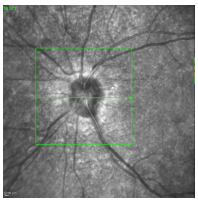
Difficult RNFL assessment

- Myopic individuals often have:
  - enlarged optic discs
  - a more oval configuration
  - larger areas of peripapillary atrophy.
- glaucomatous changes cannot be easily interpreted in myopic discs, possibly leading to a misdiagnosis of glaucoma



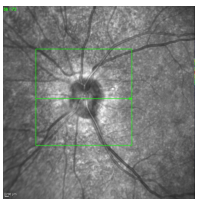
Difficult RNFL assessment

- The relationship between the RNFL thickness and myopia has been extensively investigated
- However, whether the RNFL thickness could vary with the refractive status of the eye remains unclear especially if accompanied with tilted disc



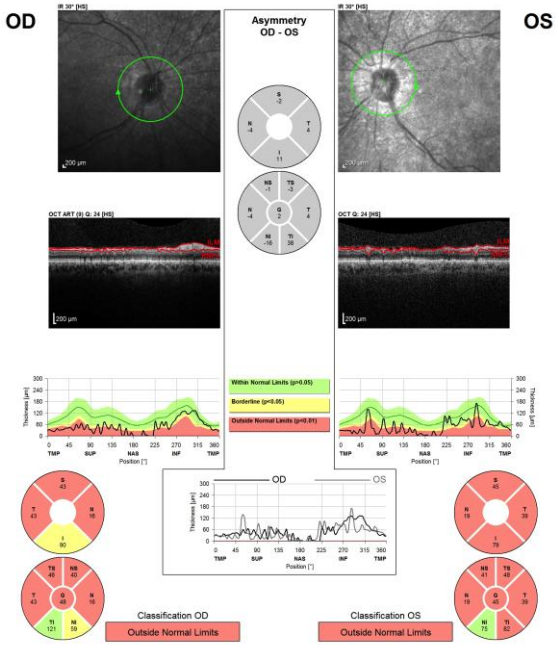
Difficult RNFL assessment

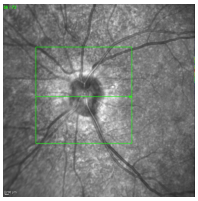
- The presence of a myopic tilted disc can make it difficult to determine the optic disc margin, thus hindering RNFL analysis by OCT
- Nonspecific tilting of the optic discs is a rather frequent anomaly found in 1.6–1.7% of population-based surveys.



Difficult RNFL assessment

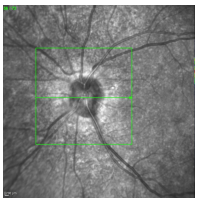
- The tilted disc
  - is a nonhereditary condition
  - in which the supero-temporal optic disc is elevated
  - and the inferonasal disc is posteriorly displaced,
  - resulting in an oval-appearing optic disc, with its long axis obliquely oriented
- This configuration may be accompanied
  - by situs inversus of the retinal vessels,
  - congenital inferonasal conus,
  - thinning of the infero-nasal RPE and choroid





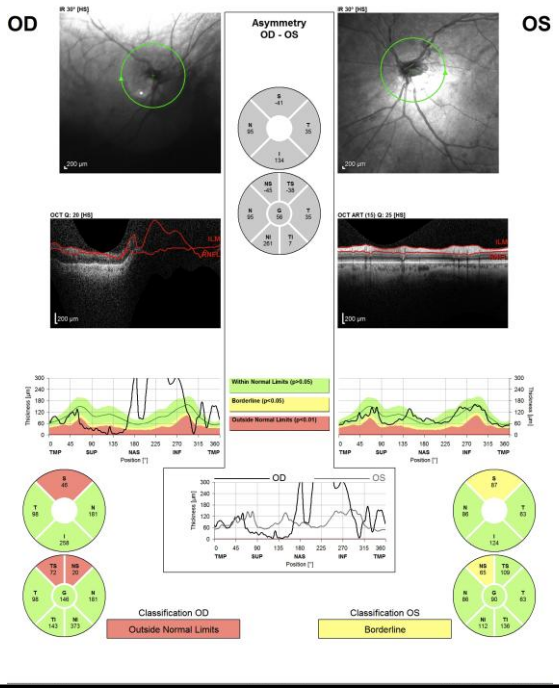
Difficult RNFL assessment

- The axial length affects the average RNFL thickness, and thickness distribution.
- High myopes are more affected.
- Adding to this the axis of the tilted discs

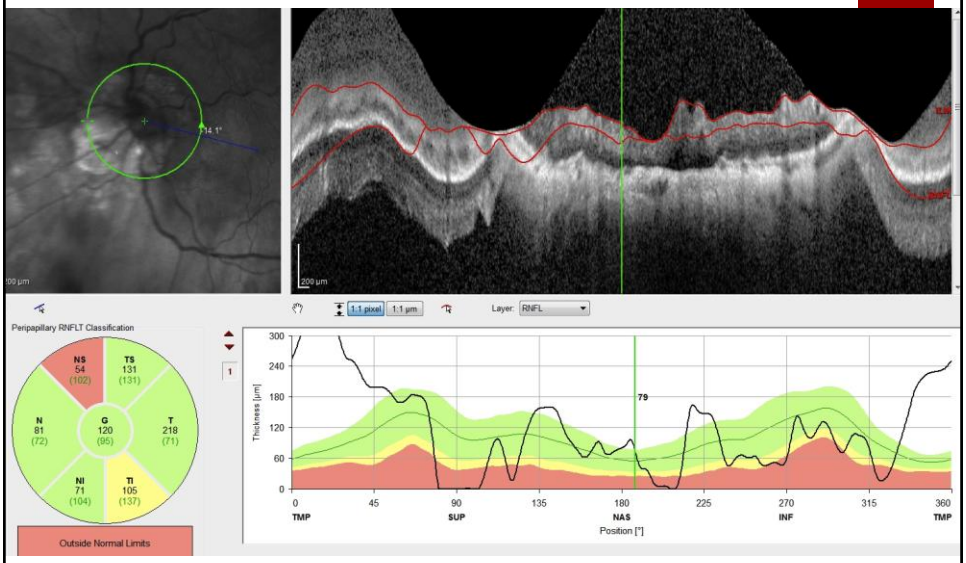


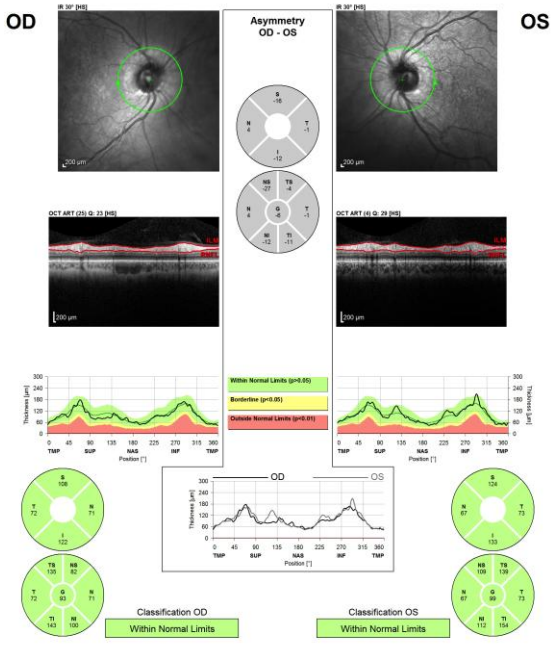
Difficult RNFL assessment

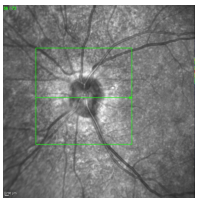
- The characteristics of the peripapillary RNFL thickness were associated with the degree of myopic optic disc tilt, especially in the temporal area.
- The degree of myopic optic disc tilt should be considered when interpreting the RNFL thickness measured by the Cirrus HD OCT.



Case 2

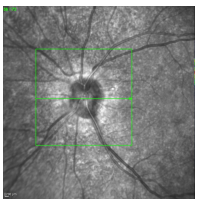

Peripapillary RNFLT Classification
NS 54 (102)
TS 131 (131)
N 81 (72)
G 120 (95)
T 218 (71)
NI 71 (104)
TI 105 (137)
Outside Normal Limits
1:1 pixel
1:1 µm
Layer: RNFL
Thickness [µm]
79
TMP
SUP
NAS
INF
Position [°]


OD
OS
Asymmetry
OD - OS
Within Normal Limits (p>0.05)
Borderline (p=0.05)
Outside Normal Limits (p<0.01)
OD
OS
Classification OD
Within Normal Limits
Classification OS
Within Normal Limits



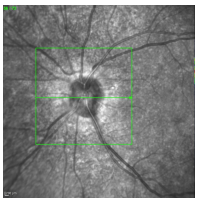
Difficult RNFL assessment

- unreliable RNFL measure- ments in eyes with myopic tilted disc result from false-positive errors and may be related to inappropriate location of the calculation circle from OCT.



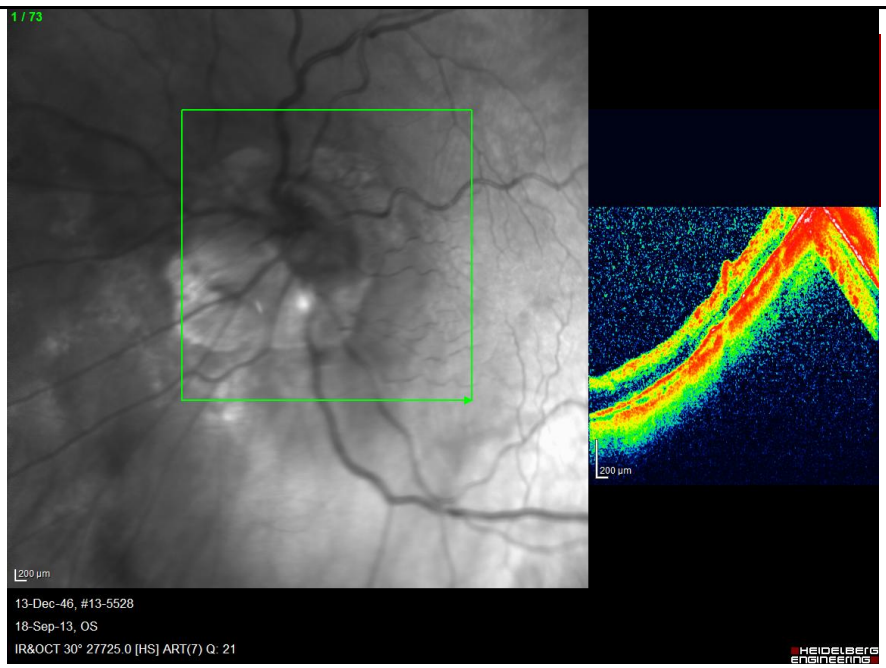
Difficult RNFL assessment

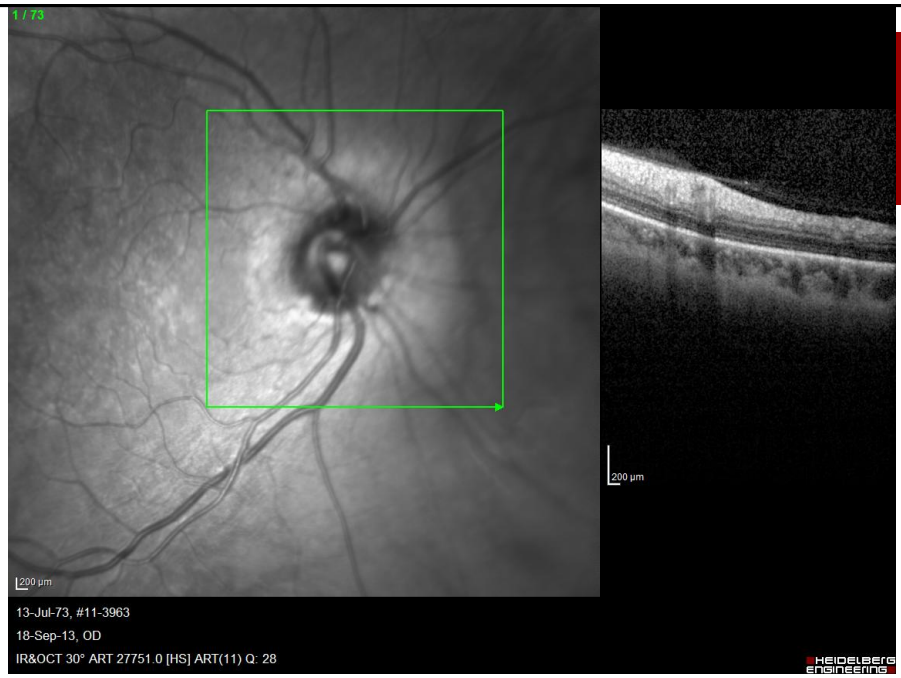
- The eyes with a myopic temporal optic disc tilt and counterclockwise rotation have:
  - a thicker temporal RNFL
  - more temporally positioned superior peak location.

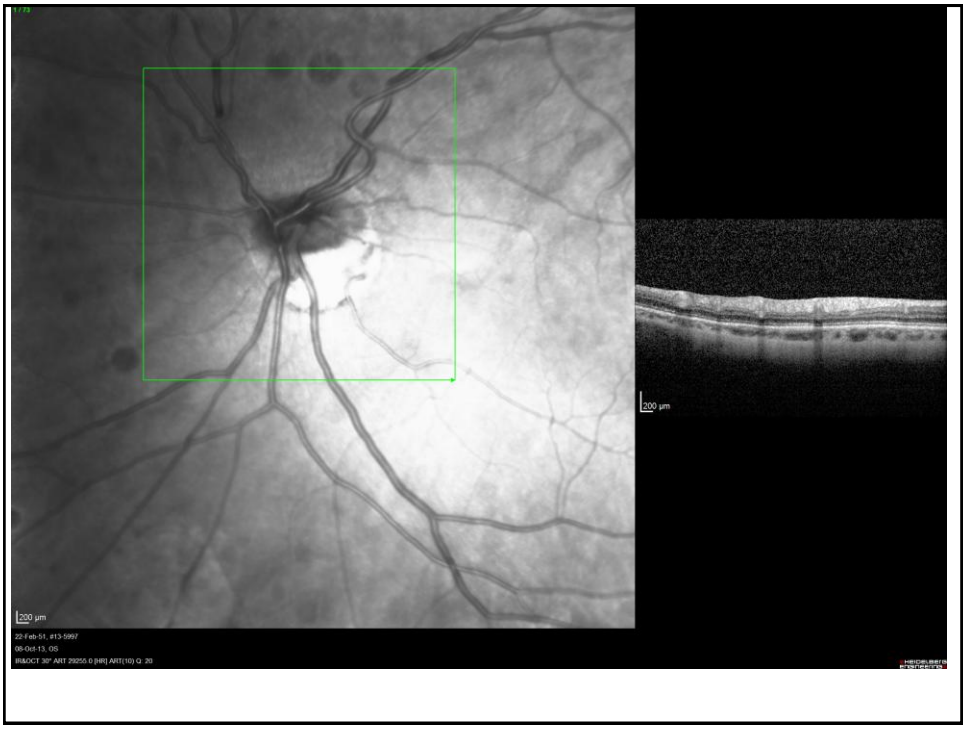


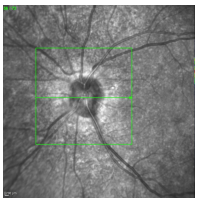
Difficult RNFL assessment

- The characteristics of the RNFL thickness in eyes with myopic optic disc tilt and rotation should be considered when interpreting the RNFL thickness measured by the Cirrus HD OCT.




1 / 73
200 µm
200 µm
13-Jul-73, #11-3963
18-Sep-13, OD
IR&OCT 30° ART 27751.0 [HS] ART(11) Q: 28
HEIDELBERG ENGINEERING


200 µm
200 µm



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Thank You