

Interpretation Guide

OCT Angiography and
integrated diagnostic imaging

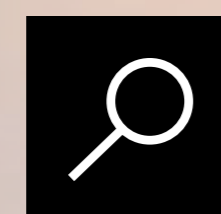


Helpful Hints

[More »](#) Click to advance.



Click on the number icons to reveal more information.

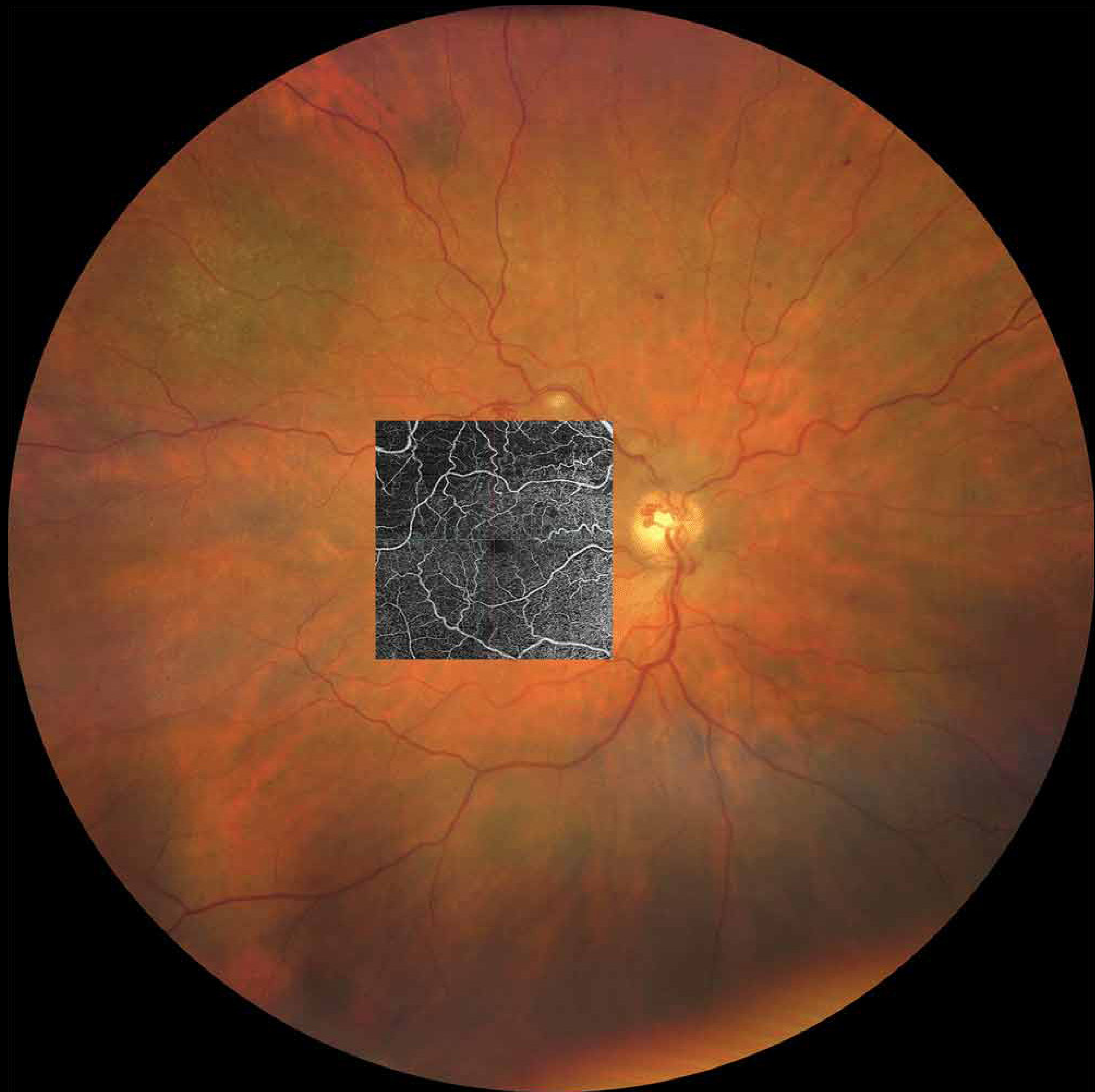


Click on the magnifying glass symbol to see an enlarged version of the image.



Click to close.





Multi-modality retinal imaging with OCT Angiography (OCTA) enables you to capture ultra-clear images of retinal and choroidal microvasculature in seconds.

As a clinician, this allows you to have a new level of confidence when suggesting a treatment regimen that is customized to your patient's individual needs.

In eye clinics worldwide, multi-modality in diagnostics and imaging is fast becoming the standard of care.



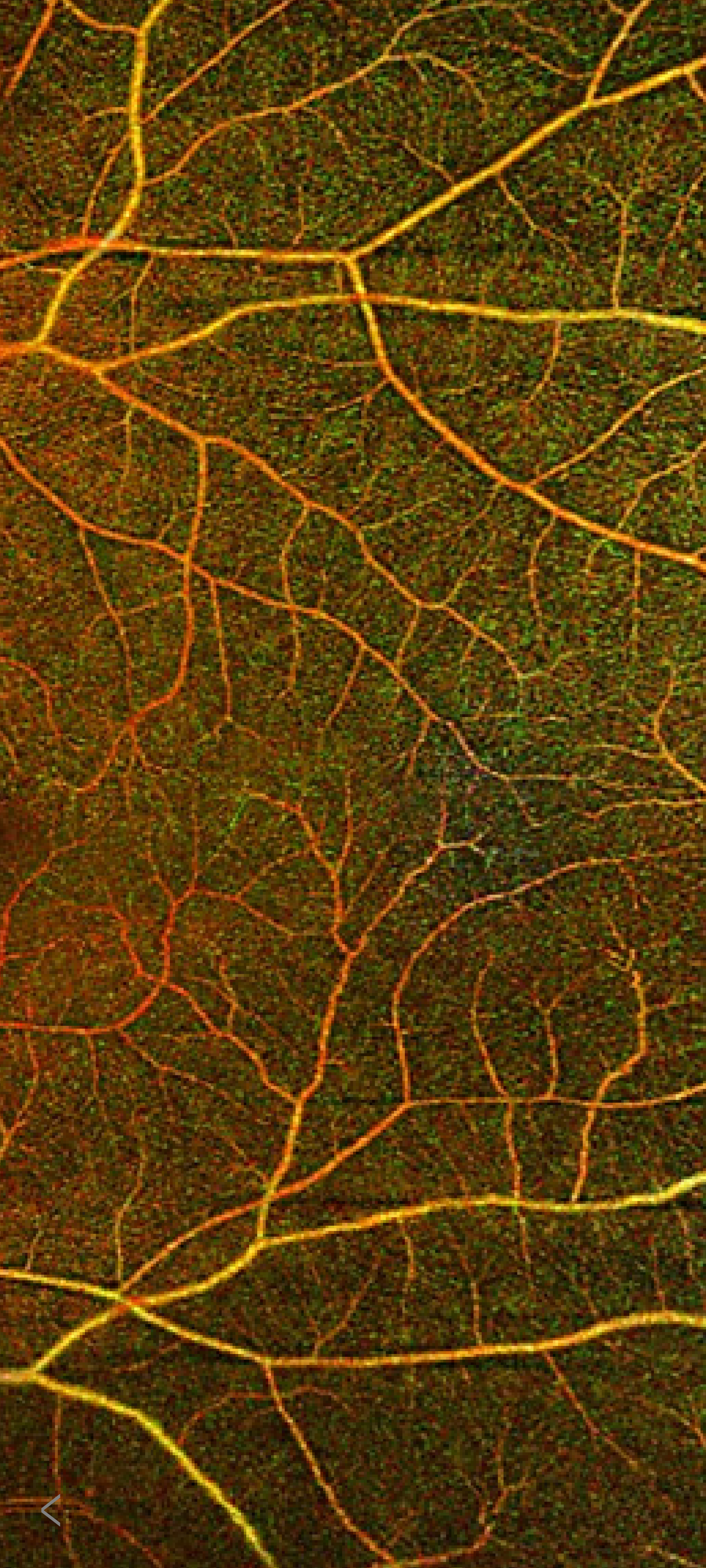


Table of Contents

Branch Retinal Vein Occlusion (BRVO)	5
Neovascular AMD	6-9
Central Serous Chorioretinopathy (CSC)	10-12
Ischemic diabetic maculopathy	13-14
Non-proliferative DR	15-16
Exudative CNV	17-18

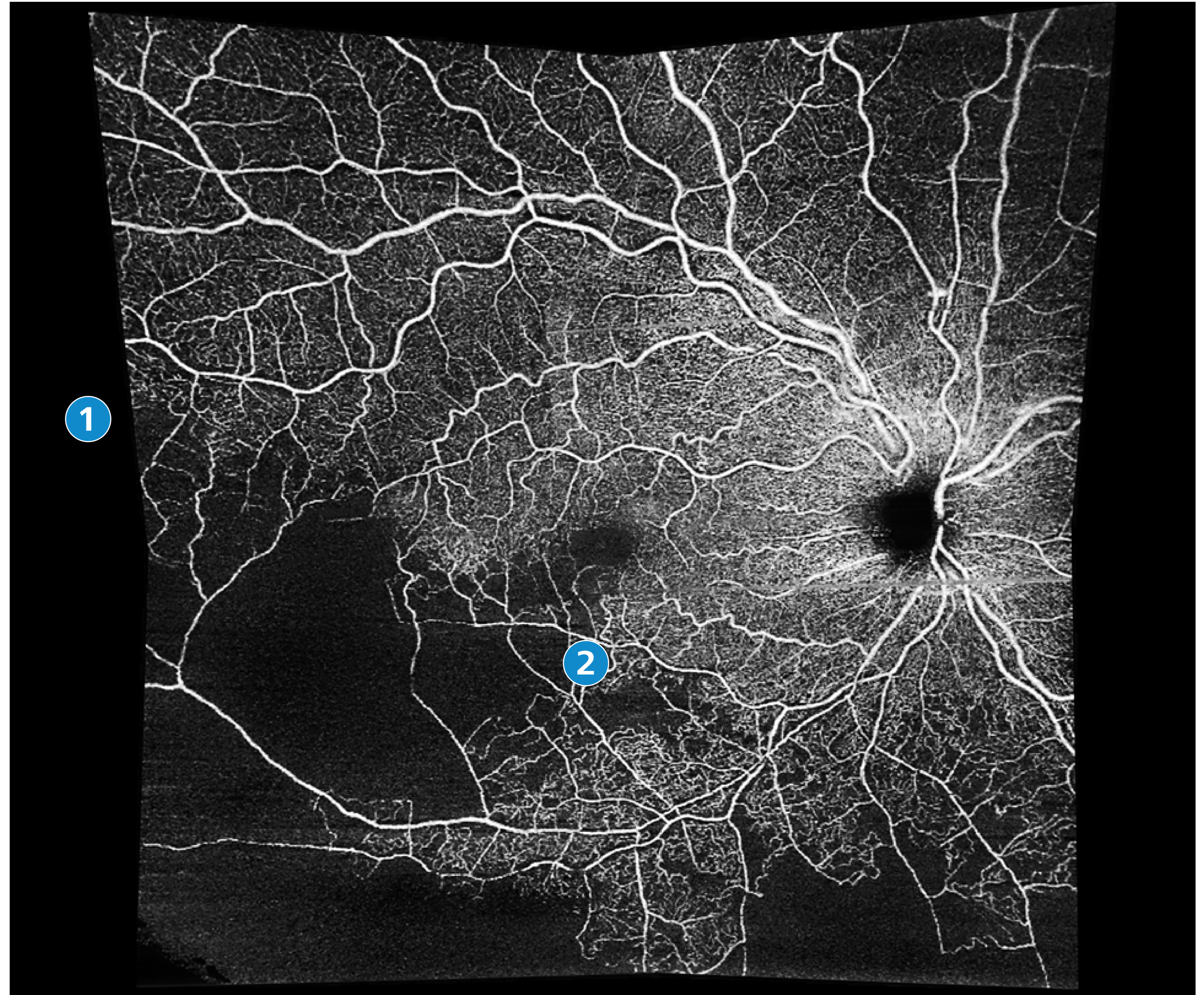
Branch Retinal Vein Occlusion (BRVO)

Patient History

53-year-old female

Summary

In contrast to a single 6x6 mm or 8x8 mm scan, the AngioPlex[®] Montage—with up to a 50-degree field of view—is able to reveal the extent of ischemia, providing a more complete clinical picture.



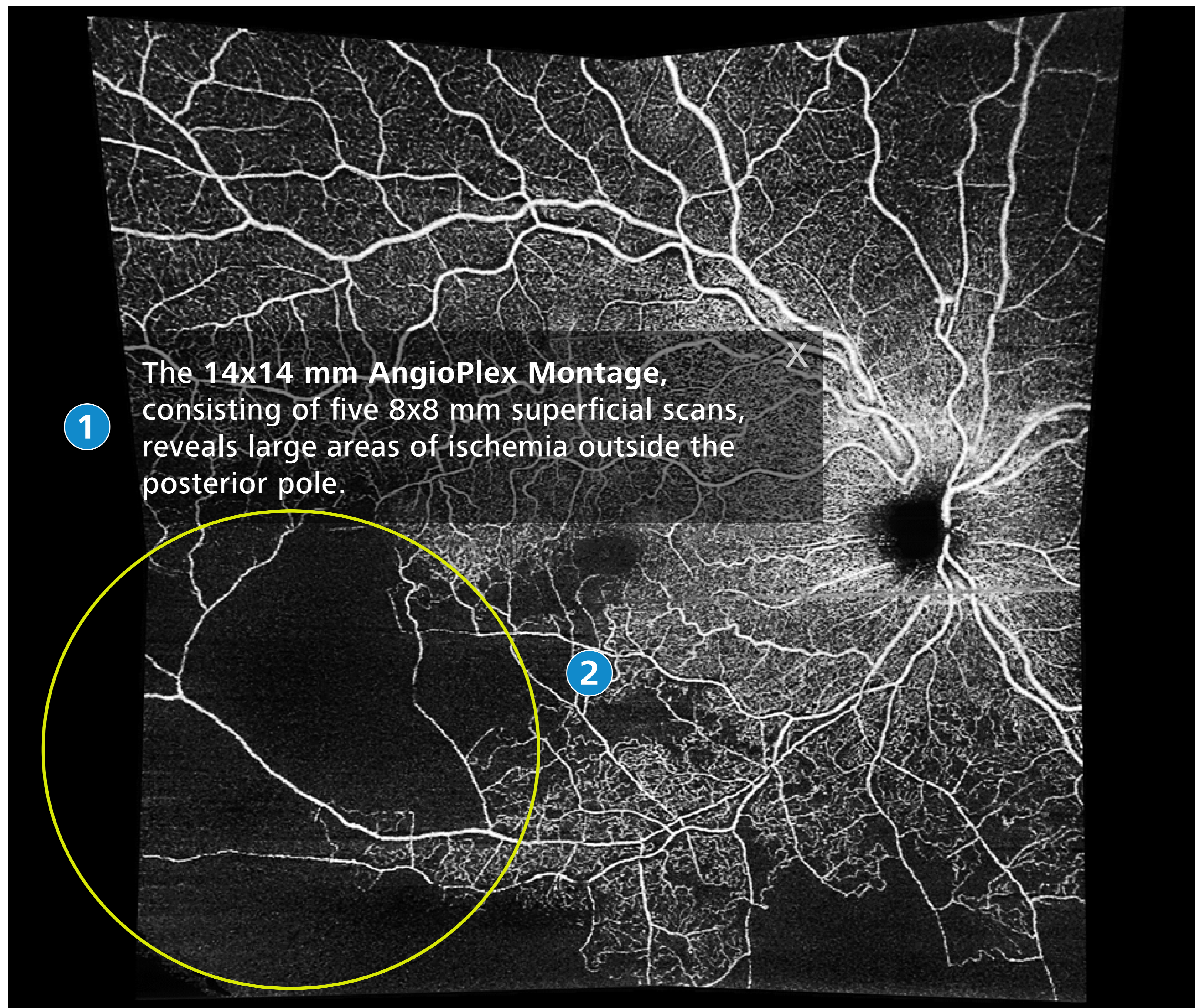
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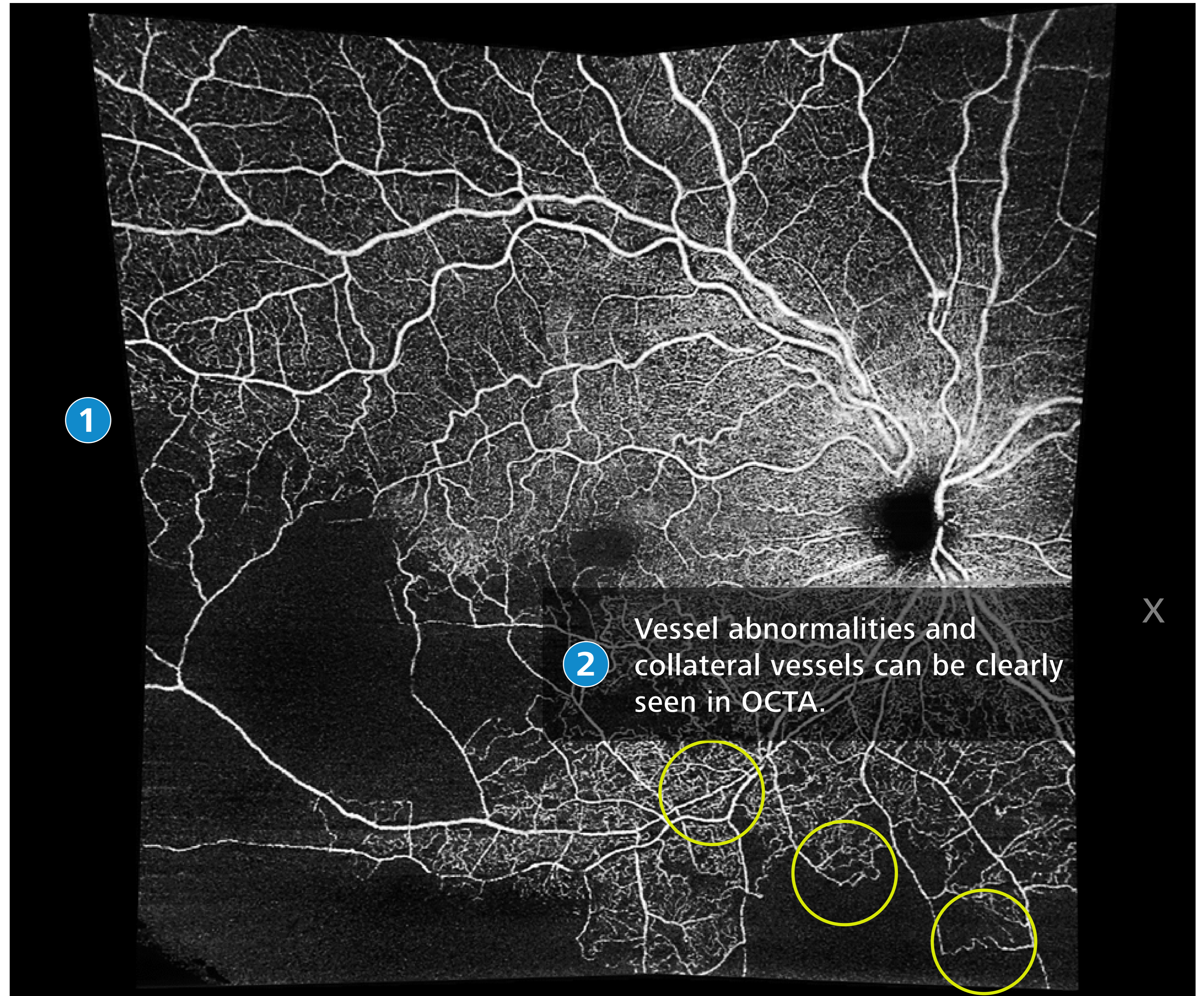
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Neovascular Age-related Macular Degeneration (AMD)

Patient History

Patient presented with a history of neovascular AMD in the right eye, which has been treated with anti-VEGF.

[More »](#)

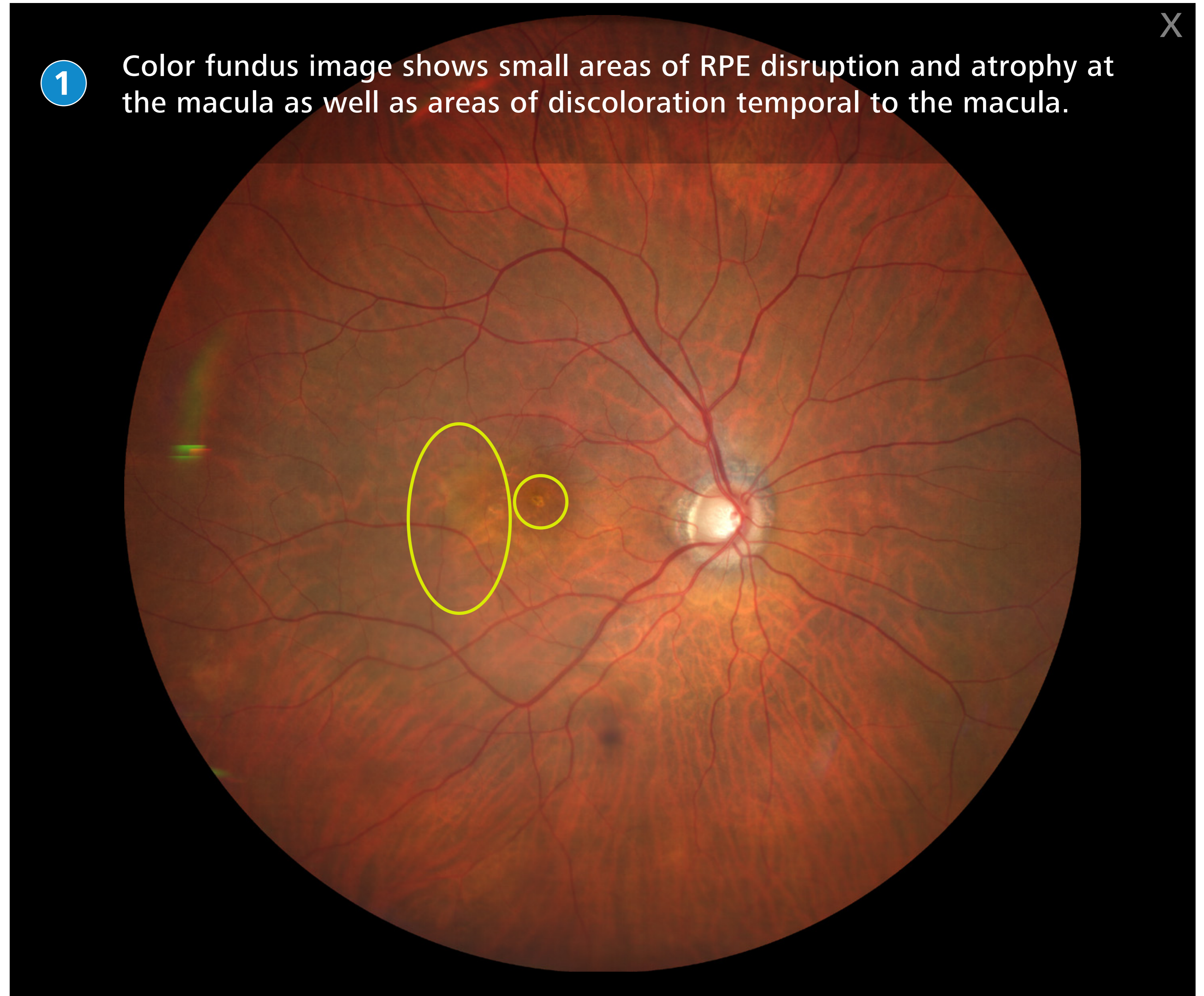


Neovascular Age-related Macular Degeneration (AMD)

Patient History

Patient presented with a history of neovascular AMD in the right eye, which has been treated with anti-VEGF.

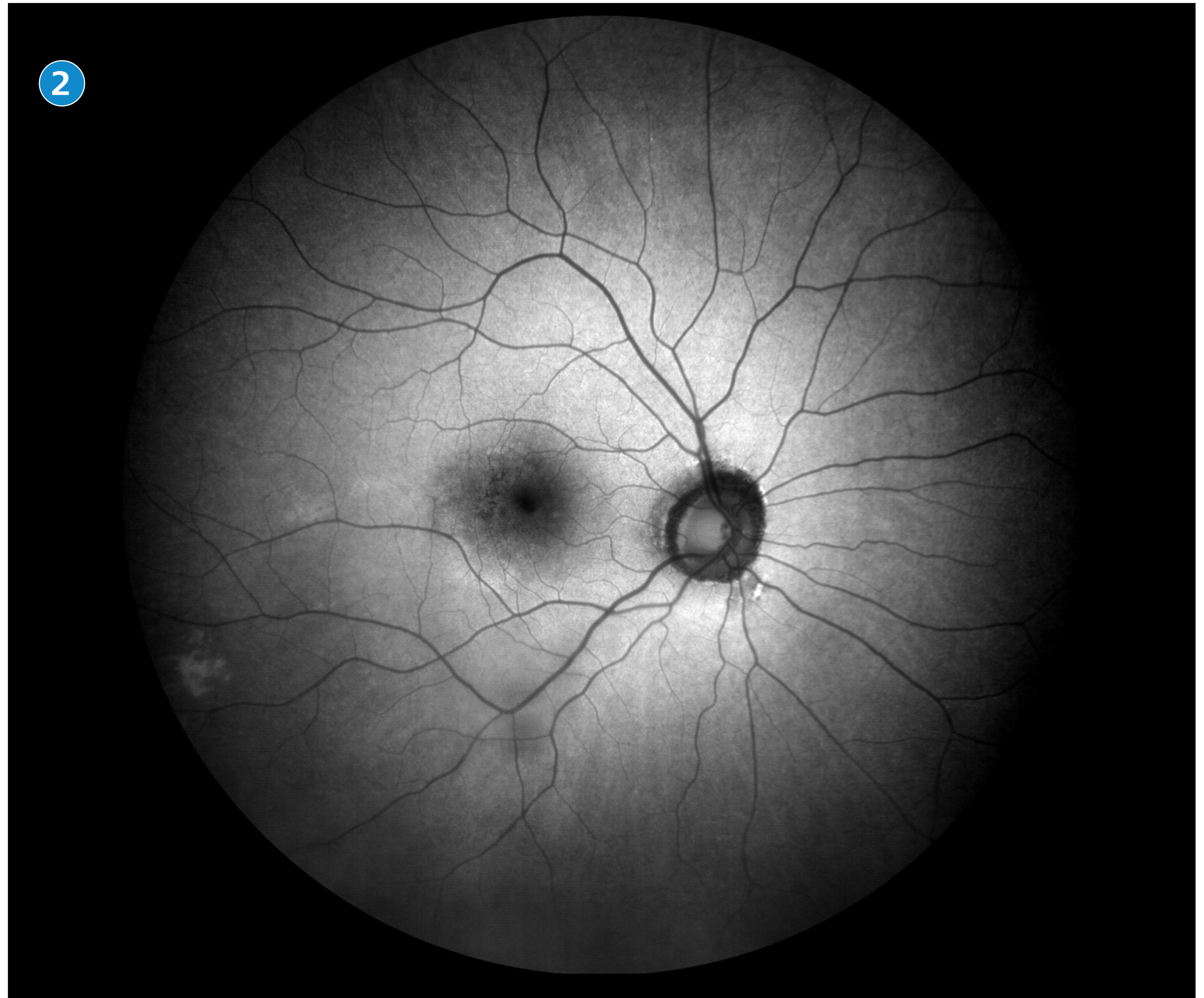
[More »](#)



Neovascular AMD

Fundus autofluorescence imaging (FAF) is indicated in geographic atrophy to document the location and size of disease.

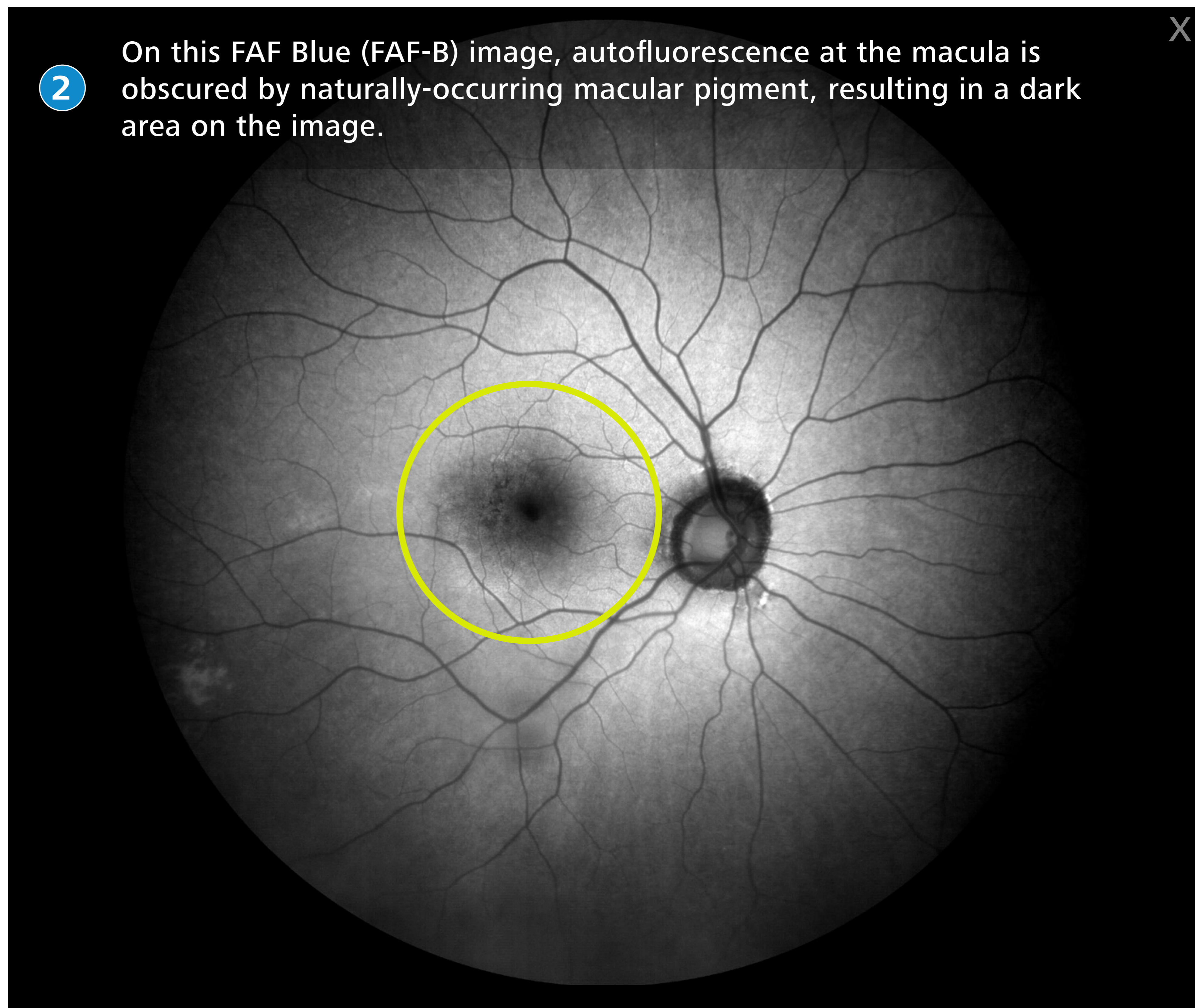
[More »](#)



Neovascular AMD

Fundus autofluorescence imaging (FAF) is indicated in geographic atrophy to document the location and size of disease.

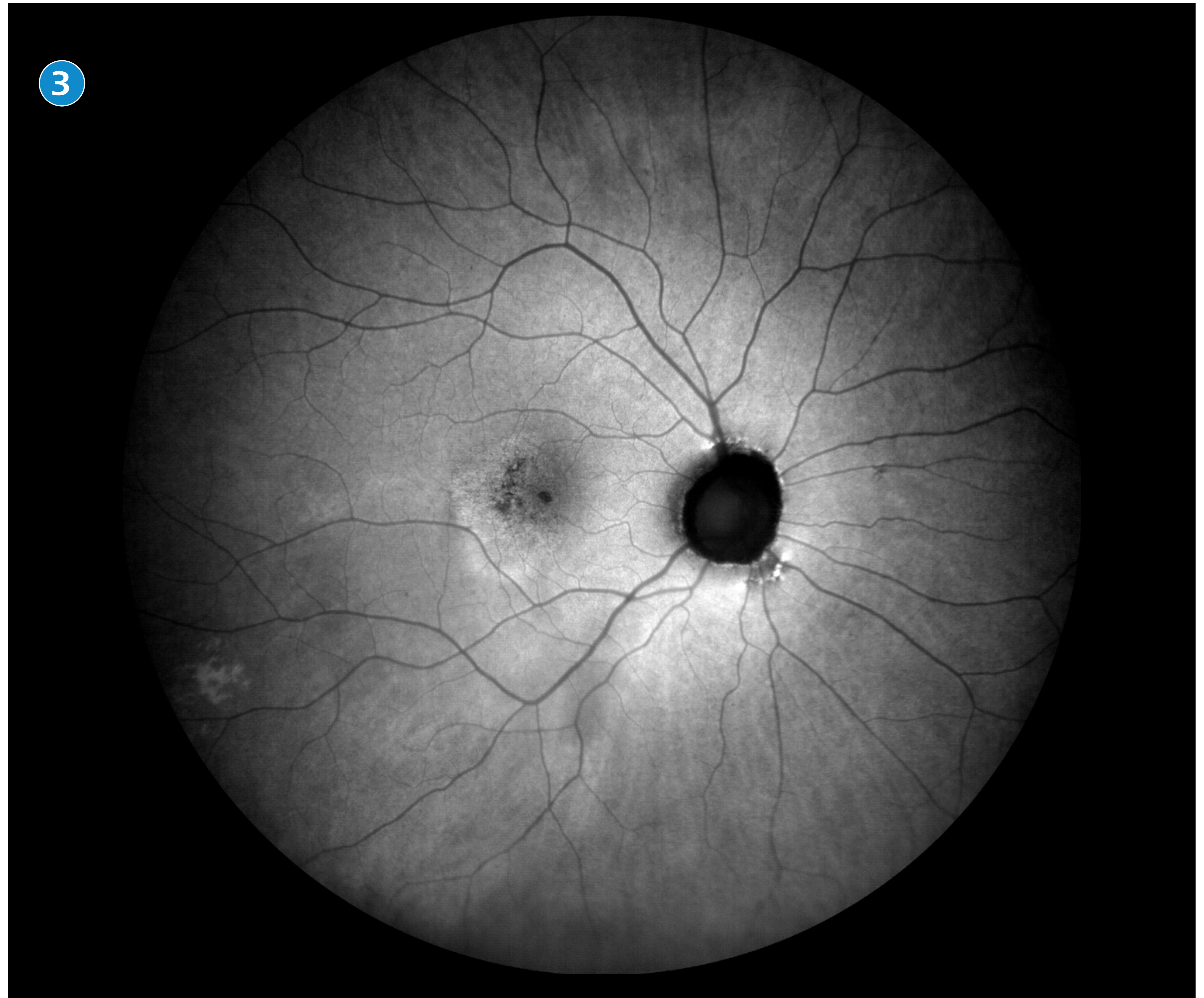
[More »](#)



Neovascular AMD

FAF Green (FAF-G) is better at visualizing the macular area, since it is not affected by macular pigment.

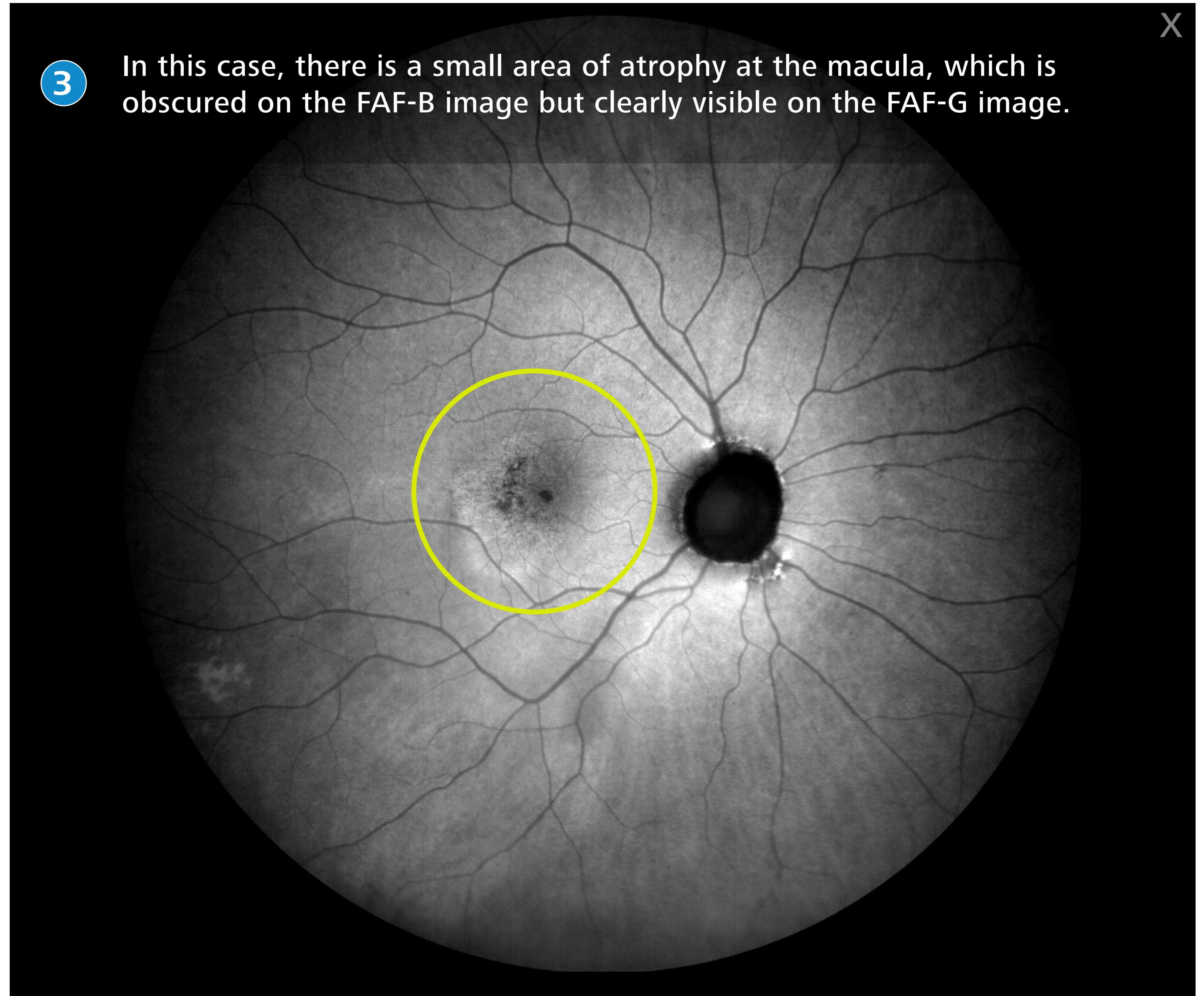
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Neovascular AMD

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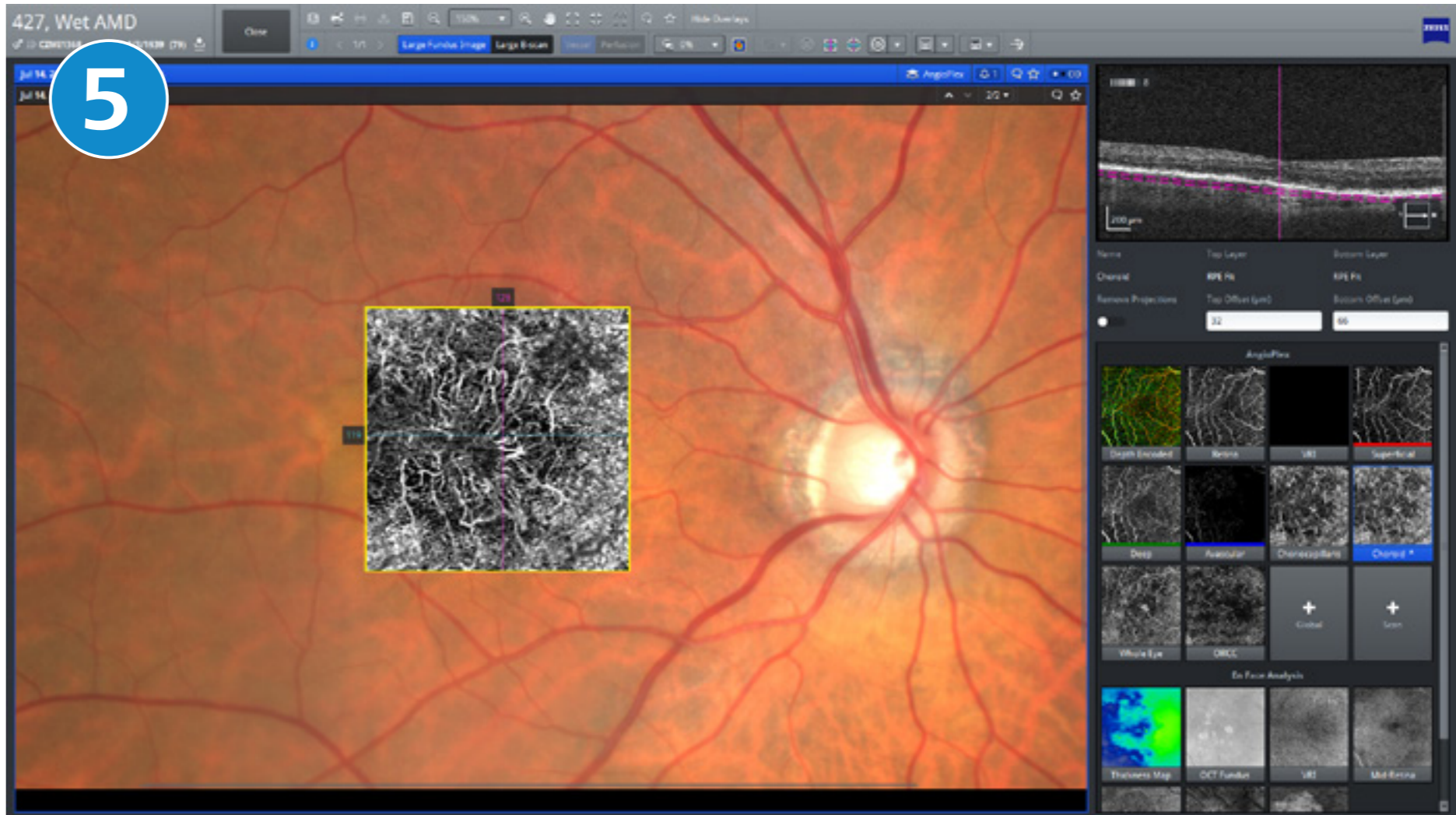
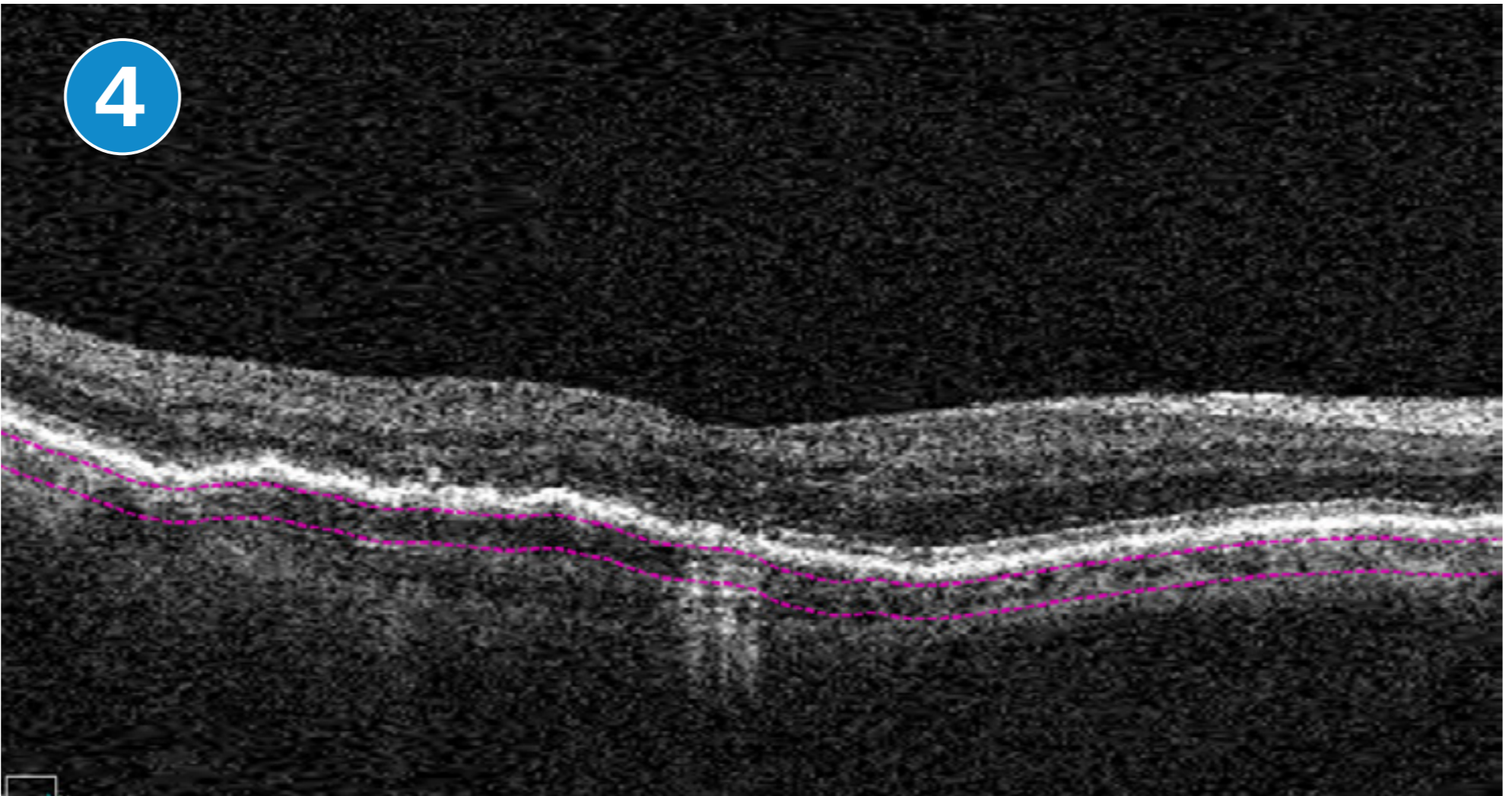
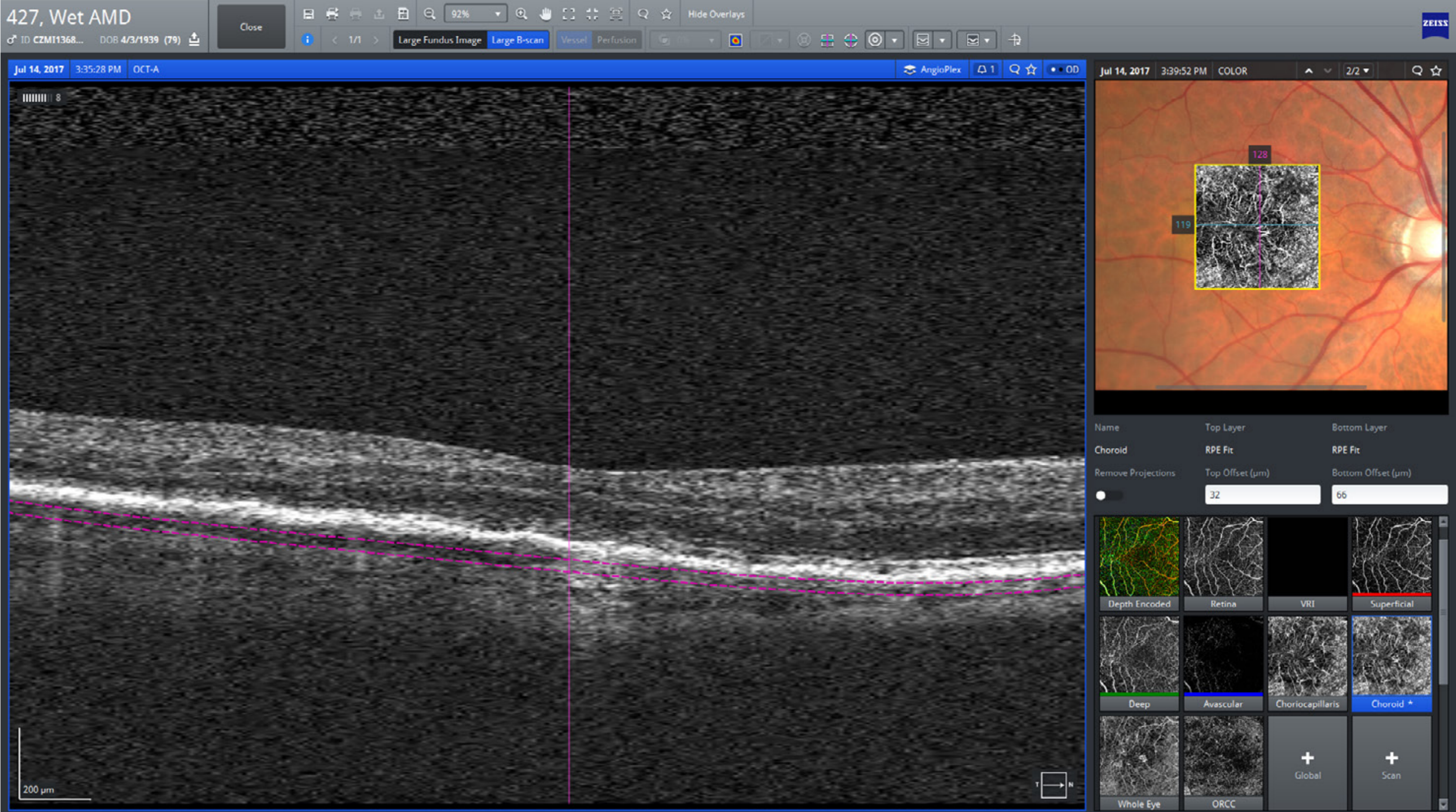


Neovascular AMD

Summary

Integrated diagnostic imaging allows the clinician to quickly monitor all aspects of the disease, from accurately documenting the location and the extent of geographic atrophy using color and FAF images, to monitoring for subretinal fluid with OCT.

With the addition of non-invasive OCTA, clinicians can monitor CNV with more frequent follow ups and appropriate, timely referrals when needed.

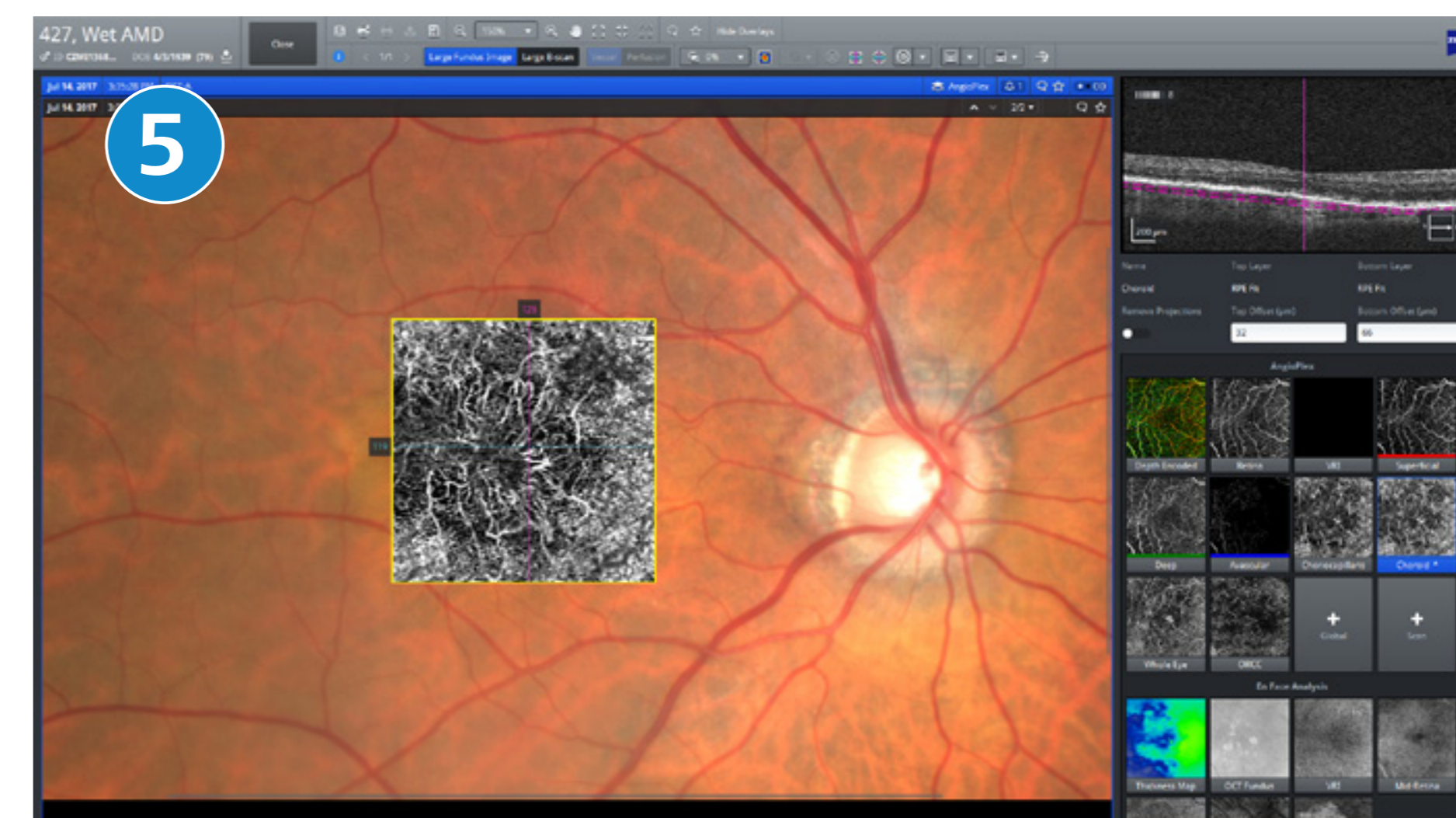
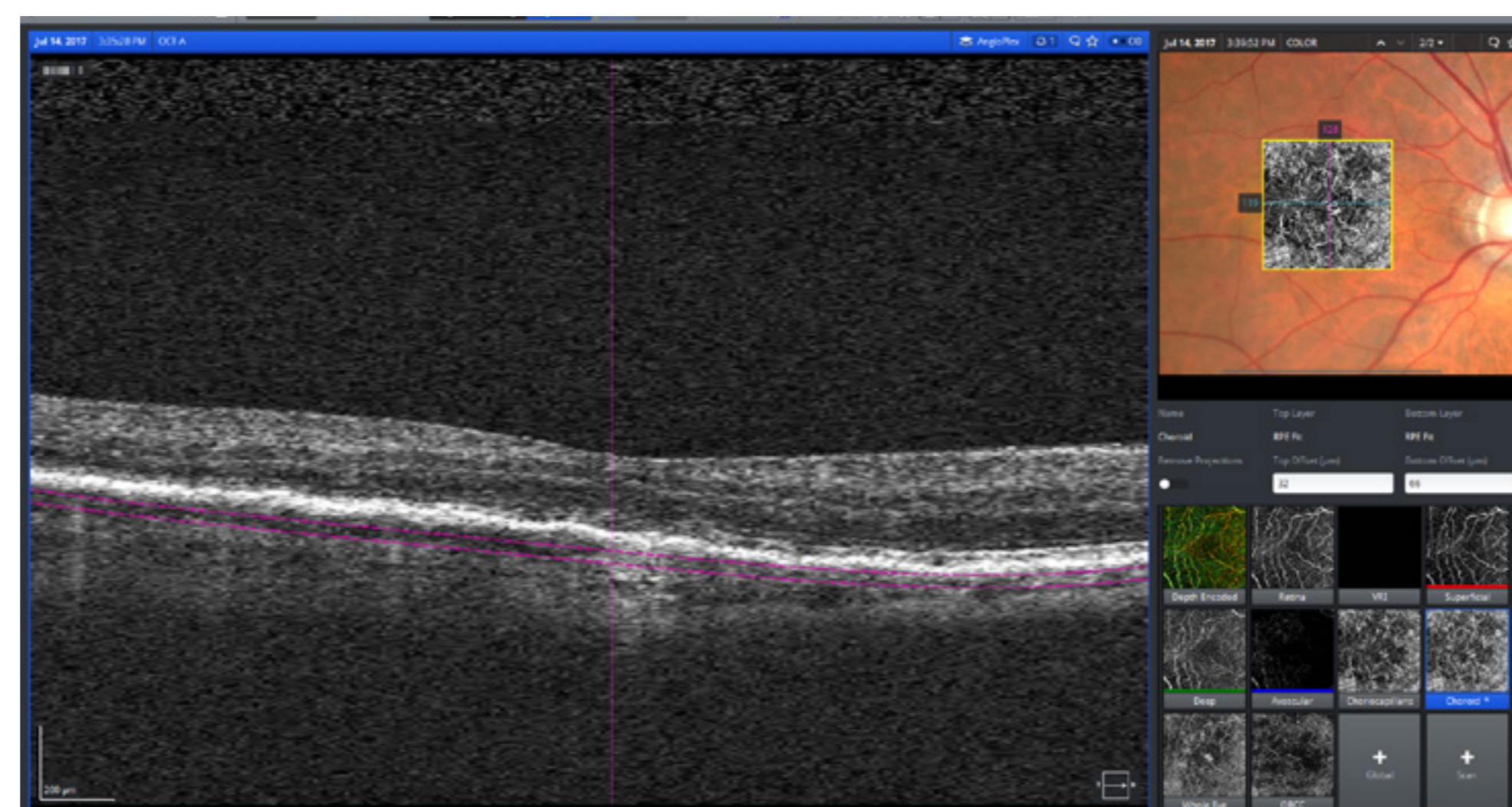
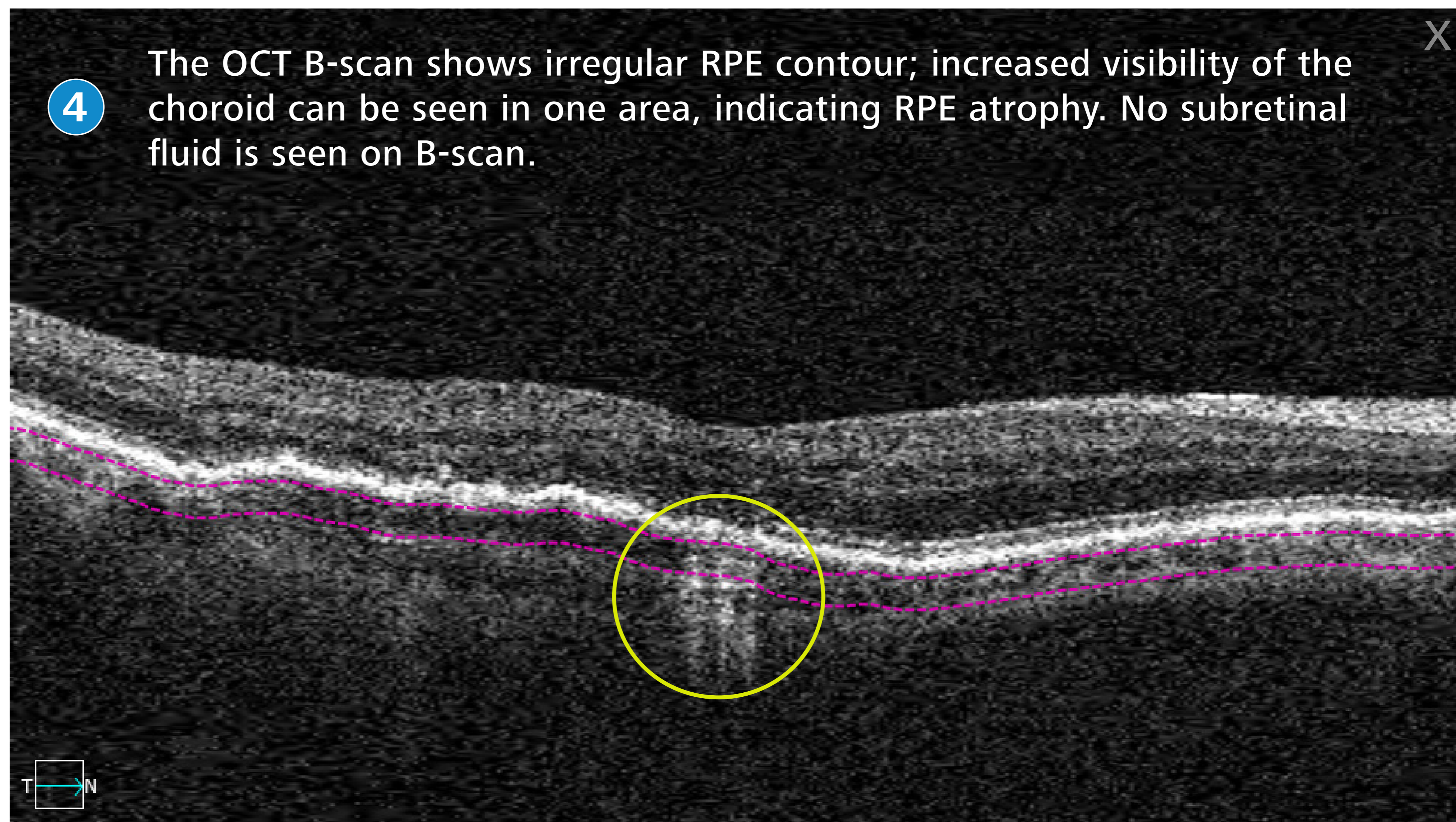


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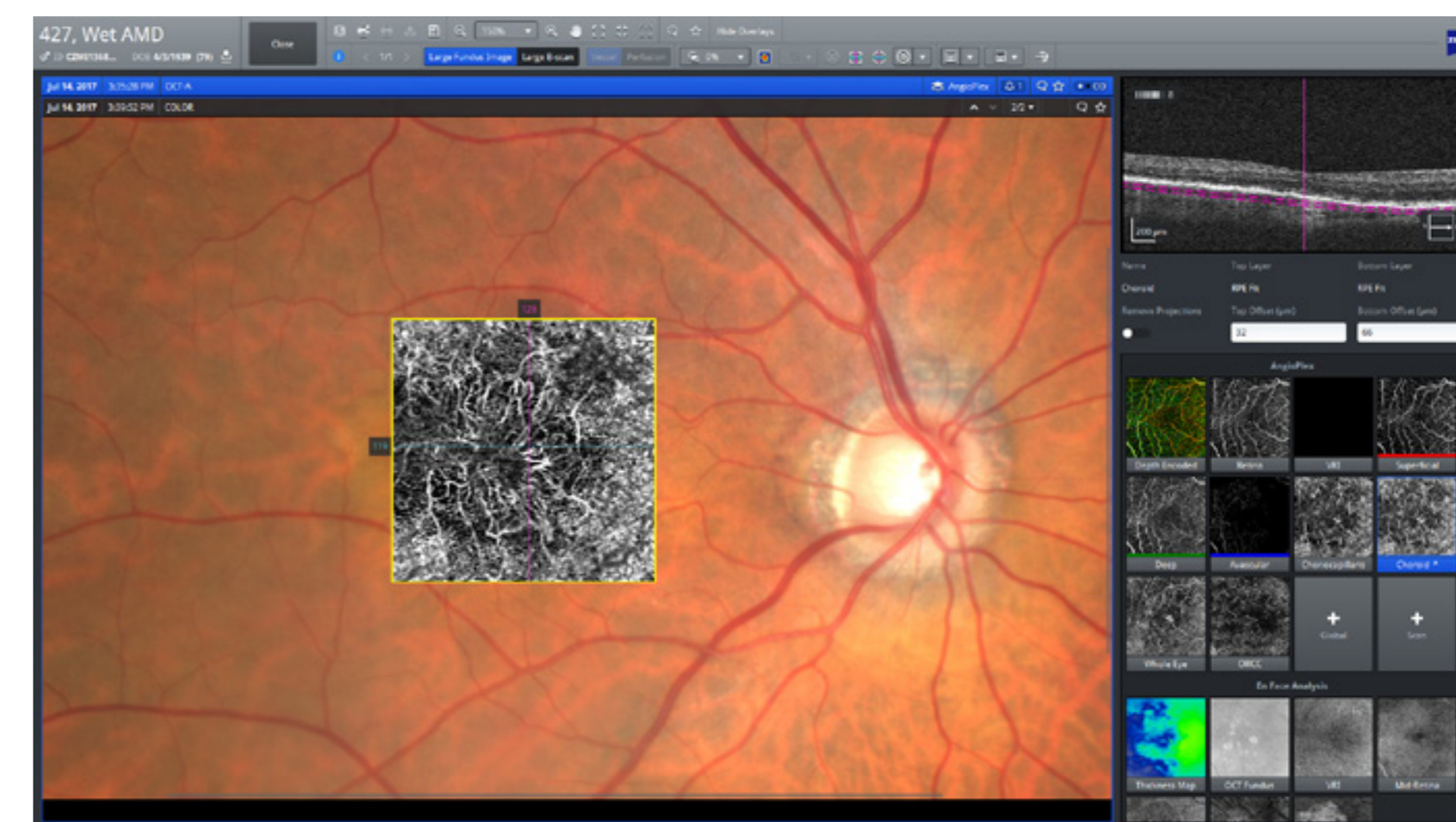
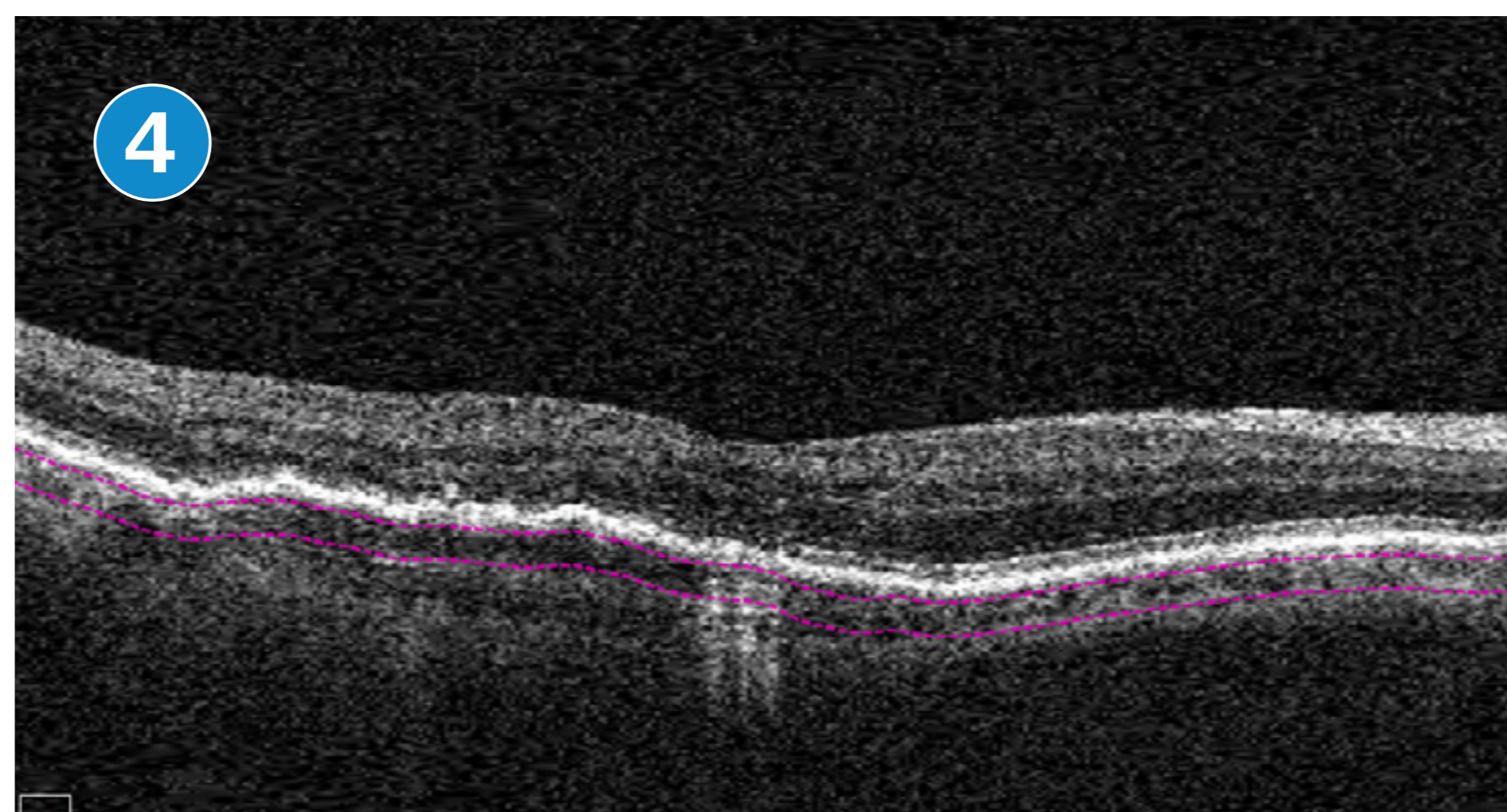
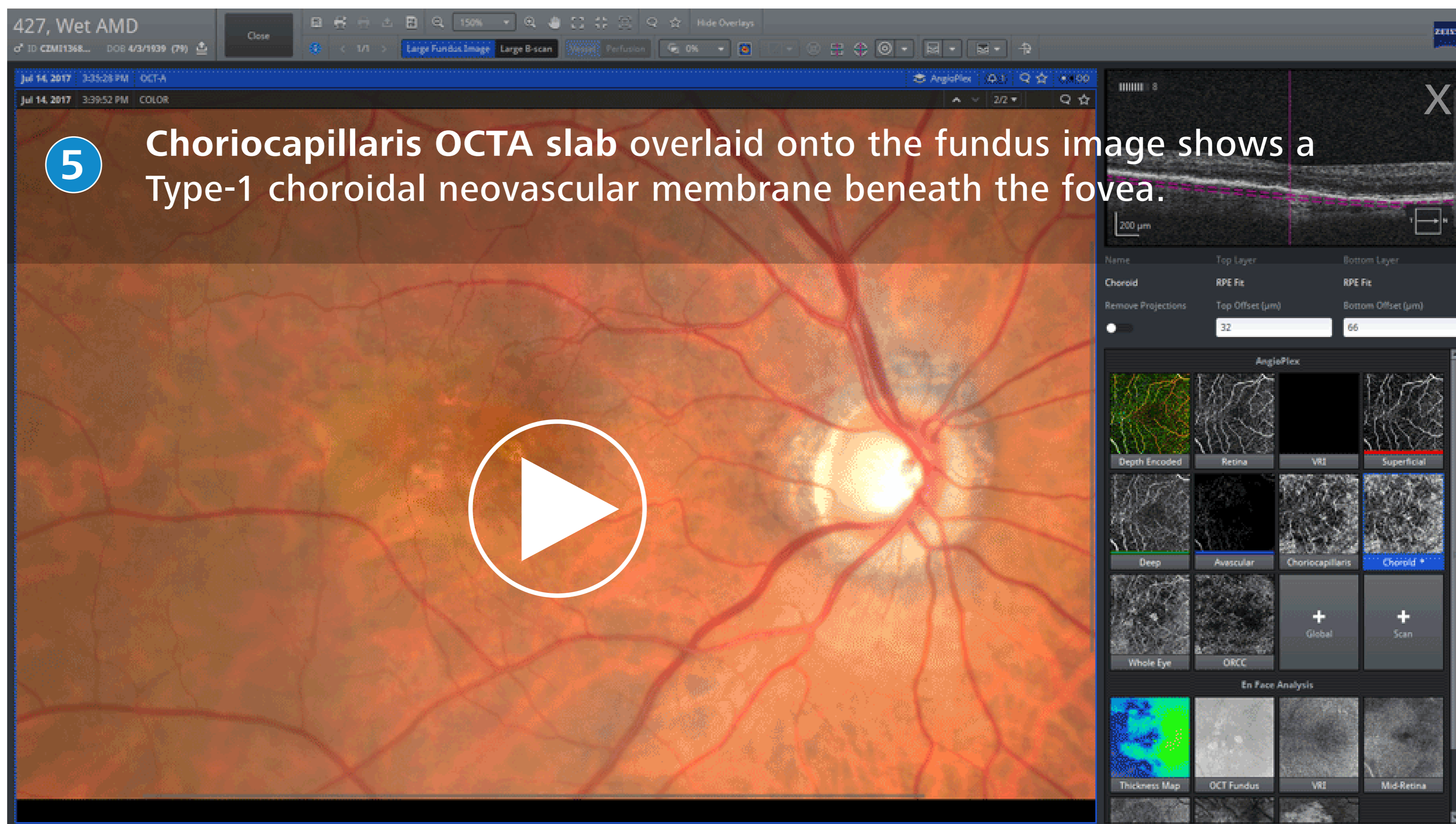


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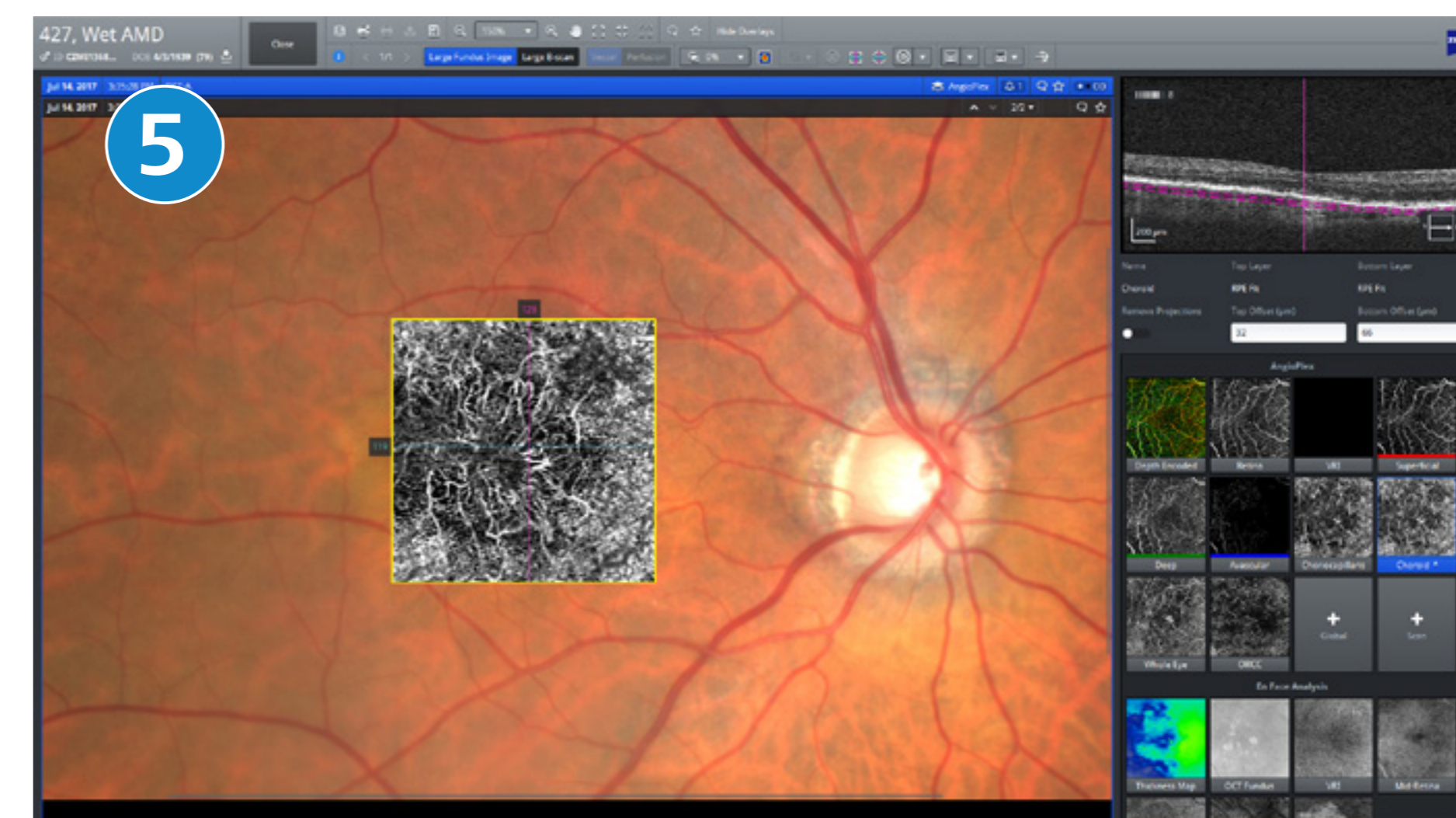
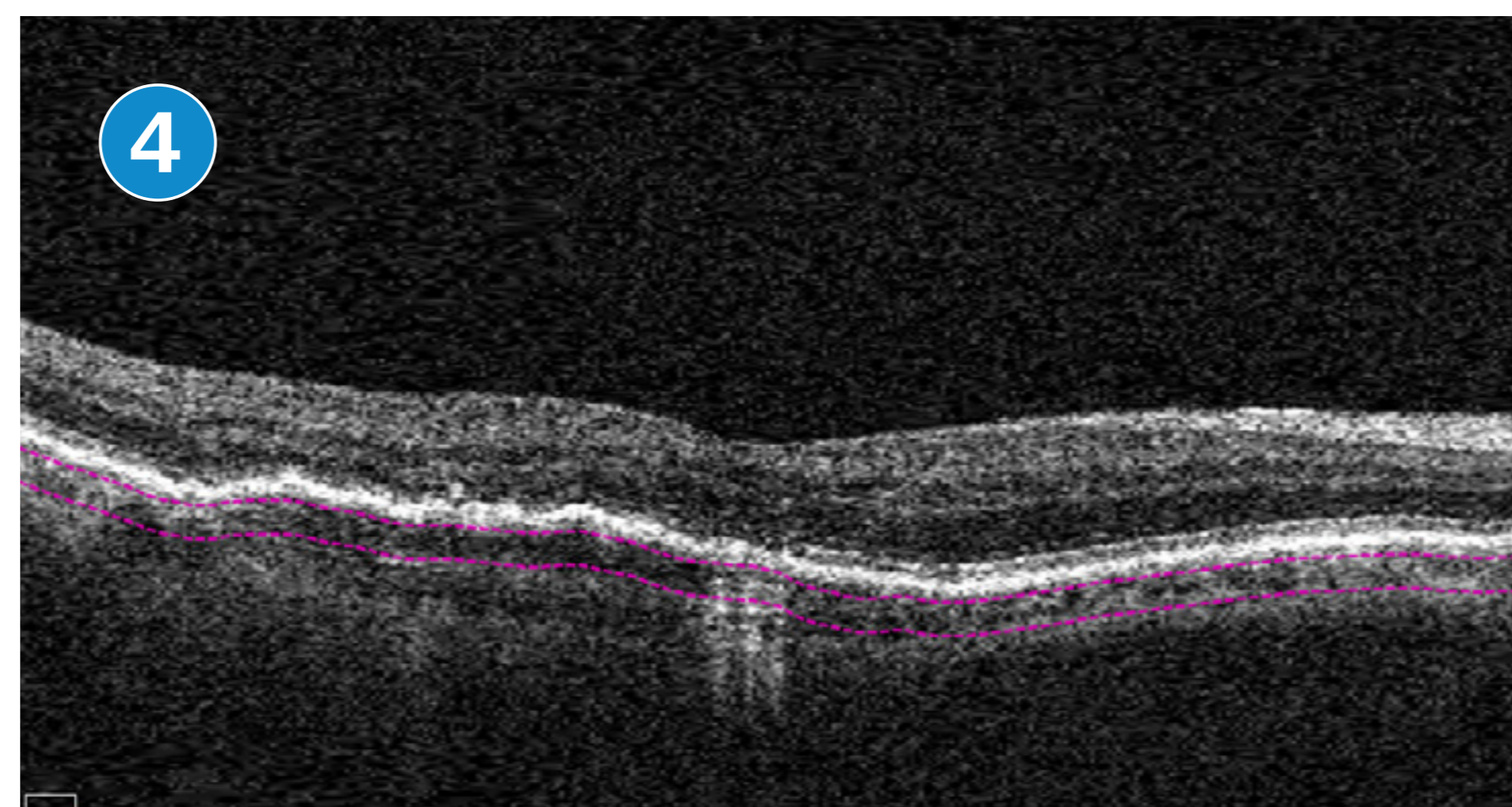
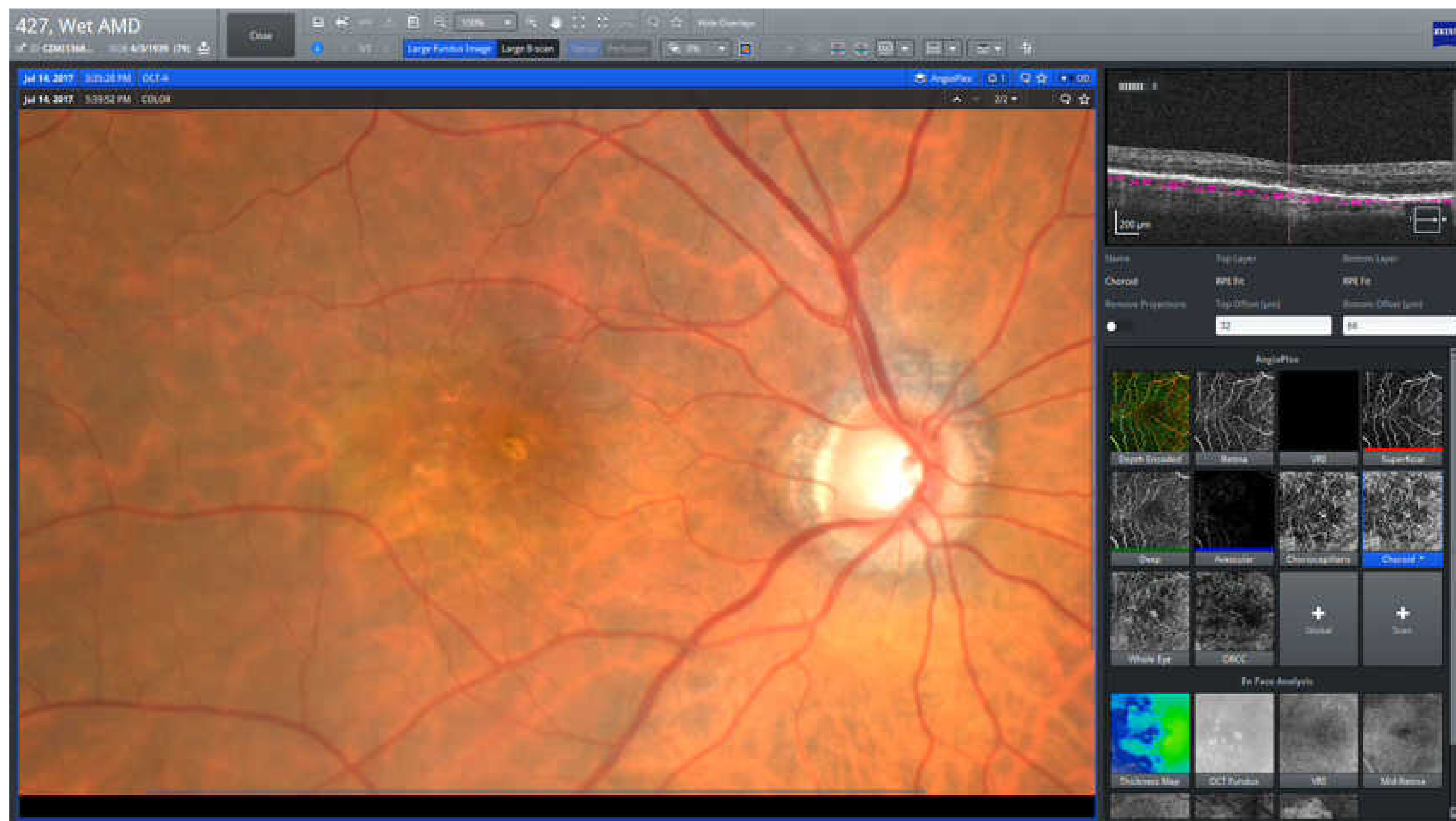


Neovascular AMD

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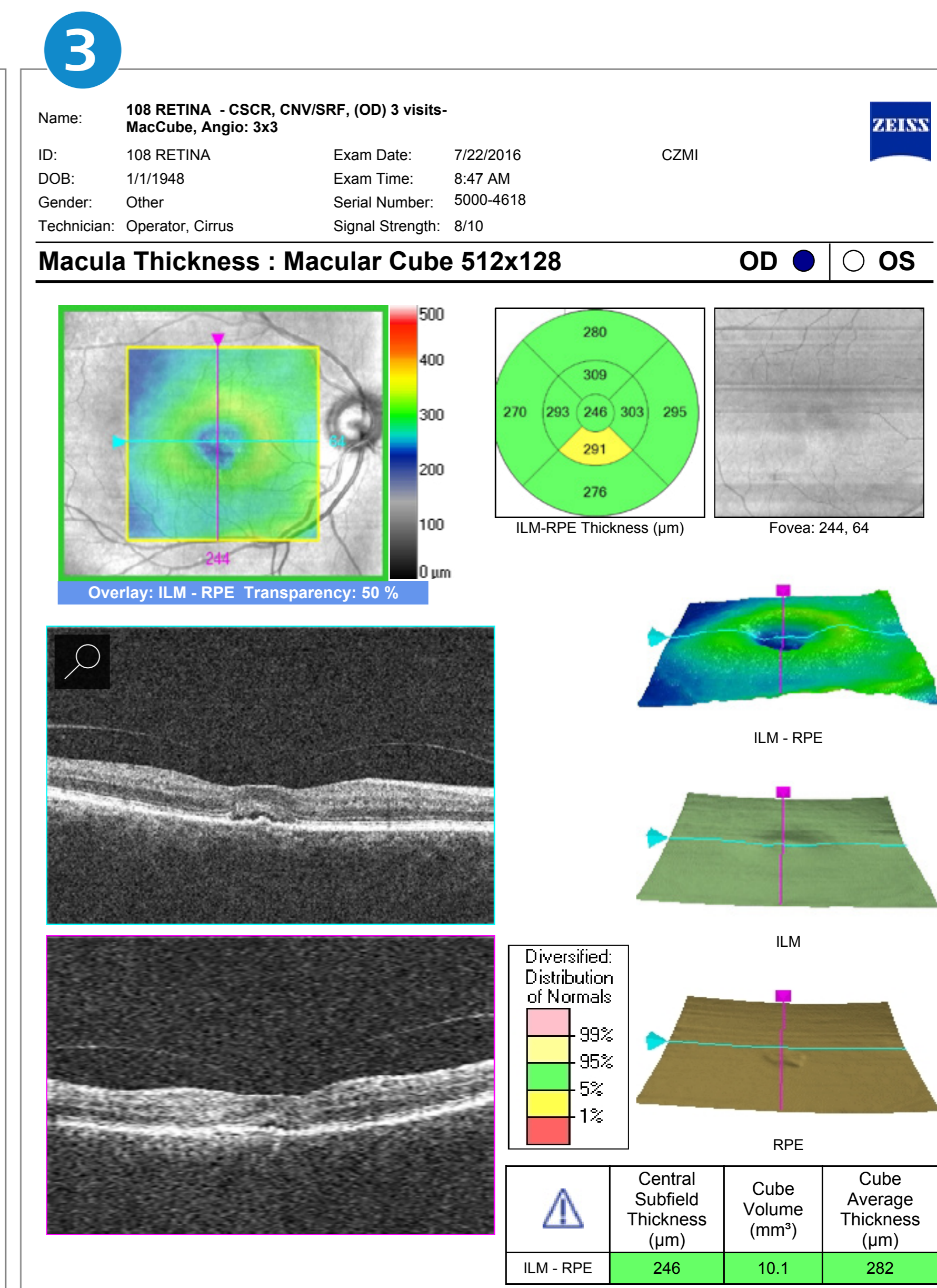
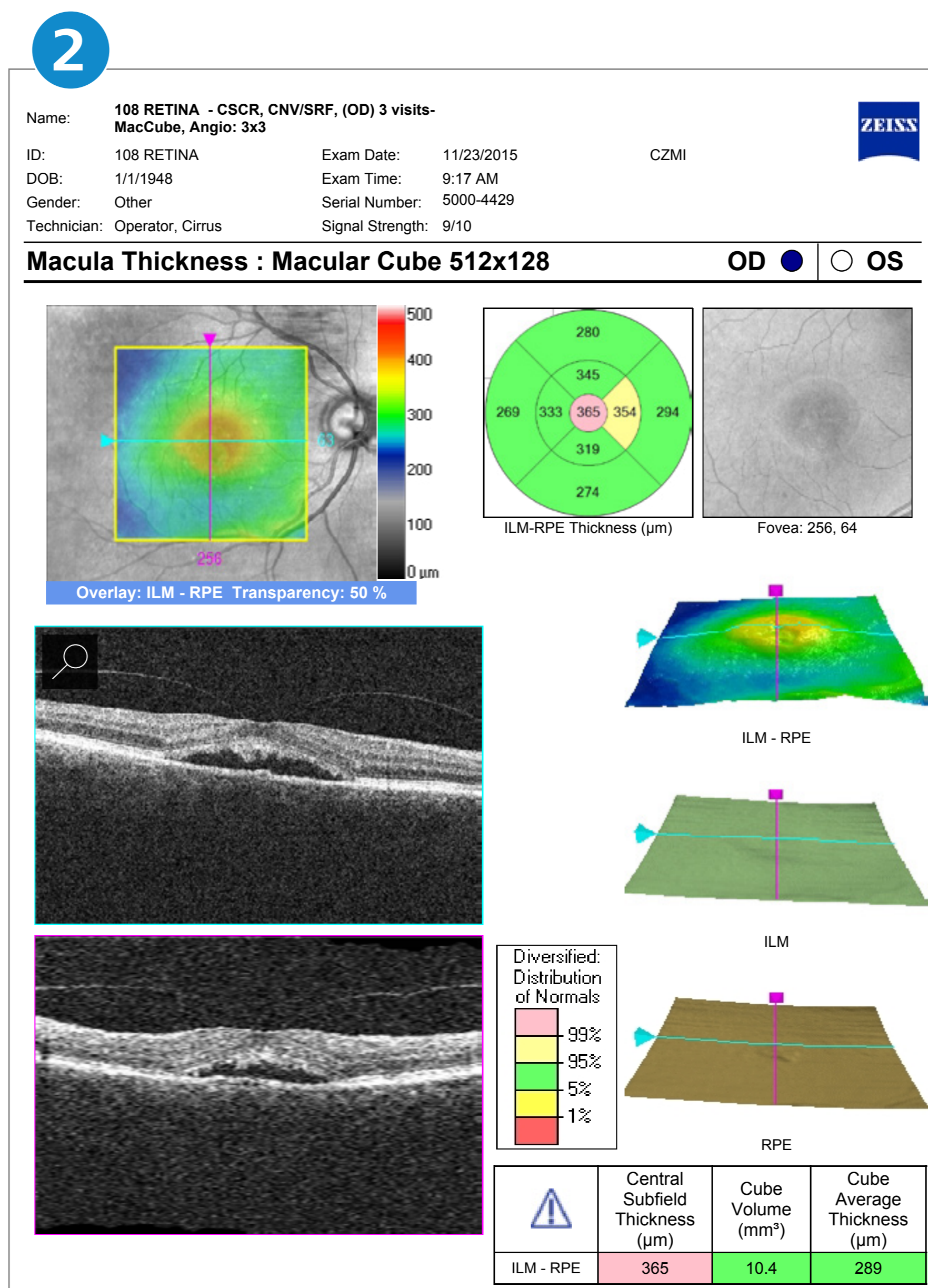
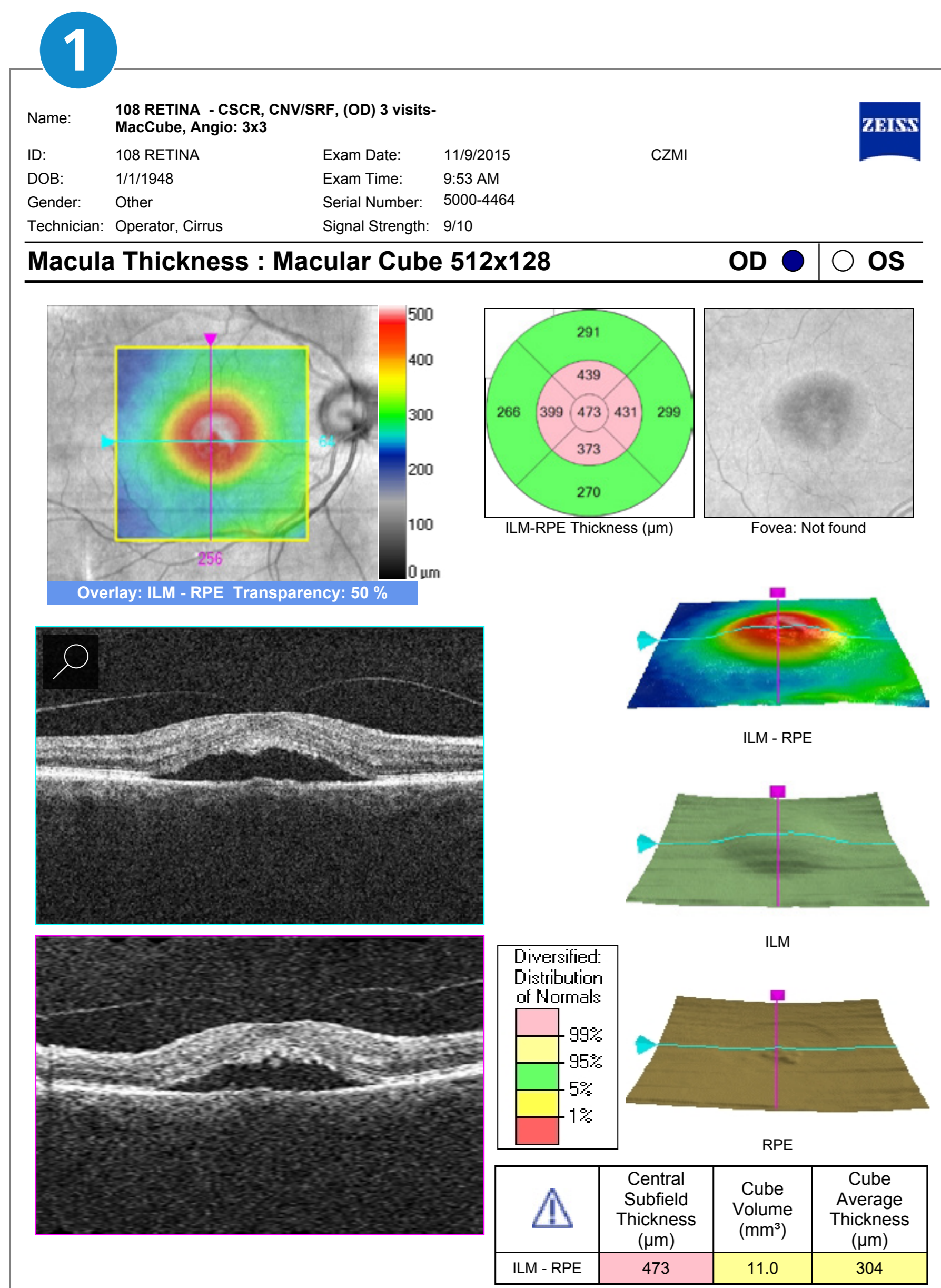


Central Serous Chorioretinopathy (CSC)

Patient History

70-year-old male. Patient presented with complaints of decreased vision in the right eye.

[More »](#)

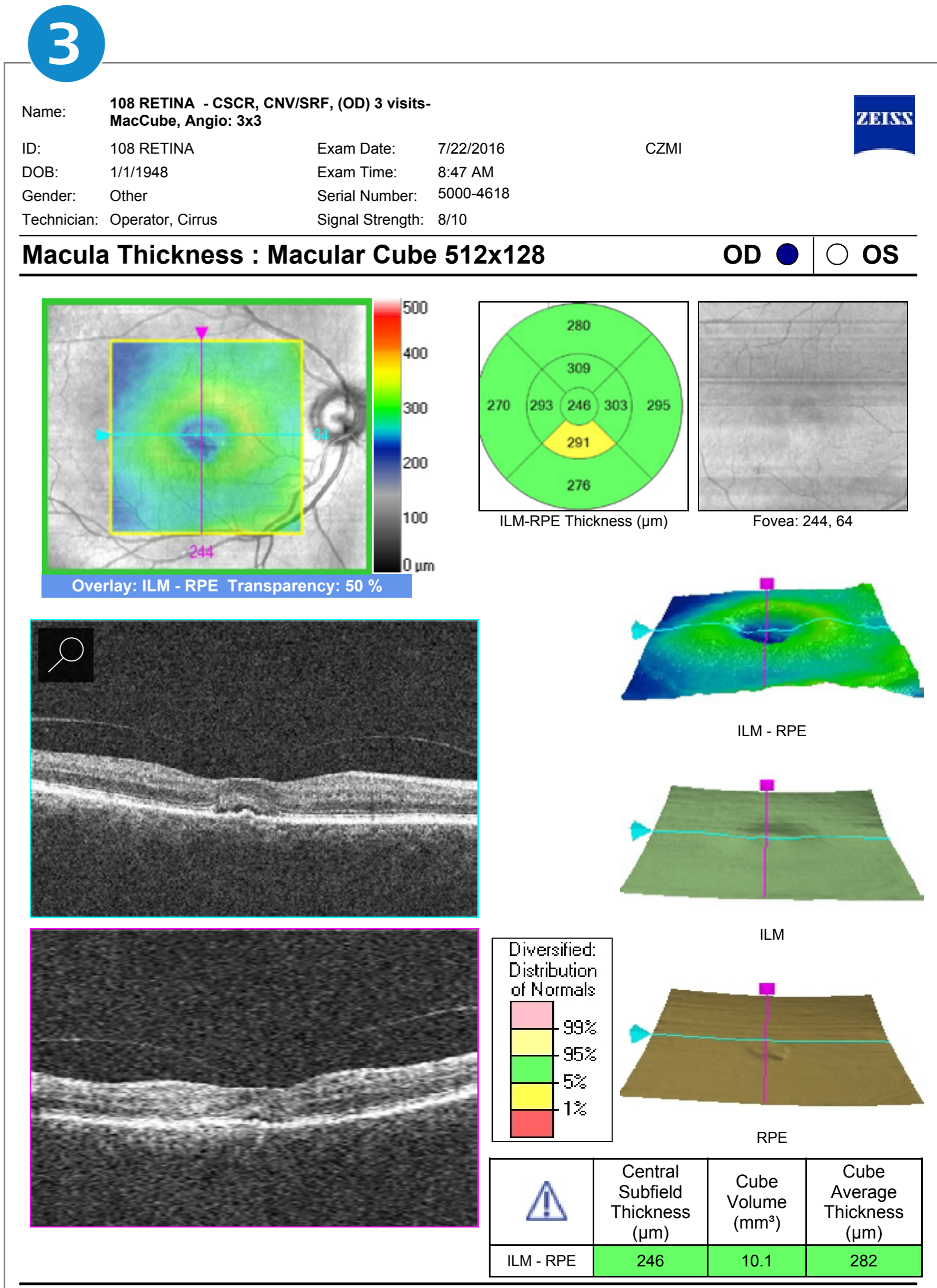
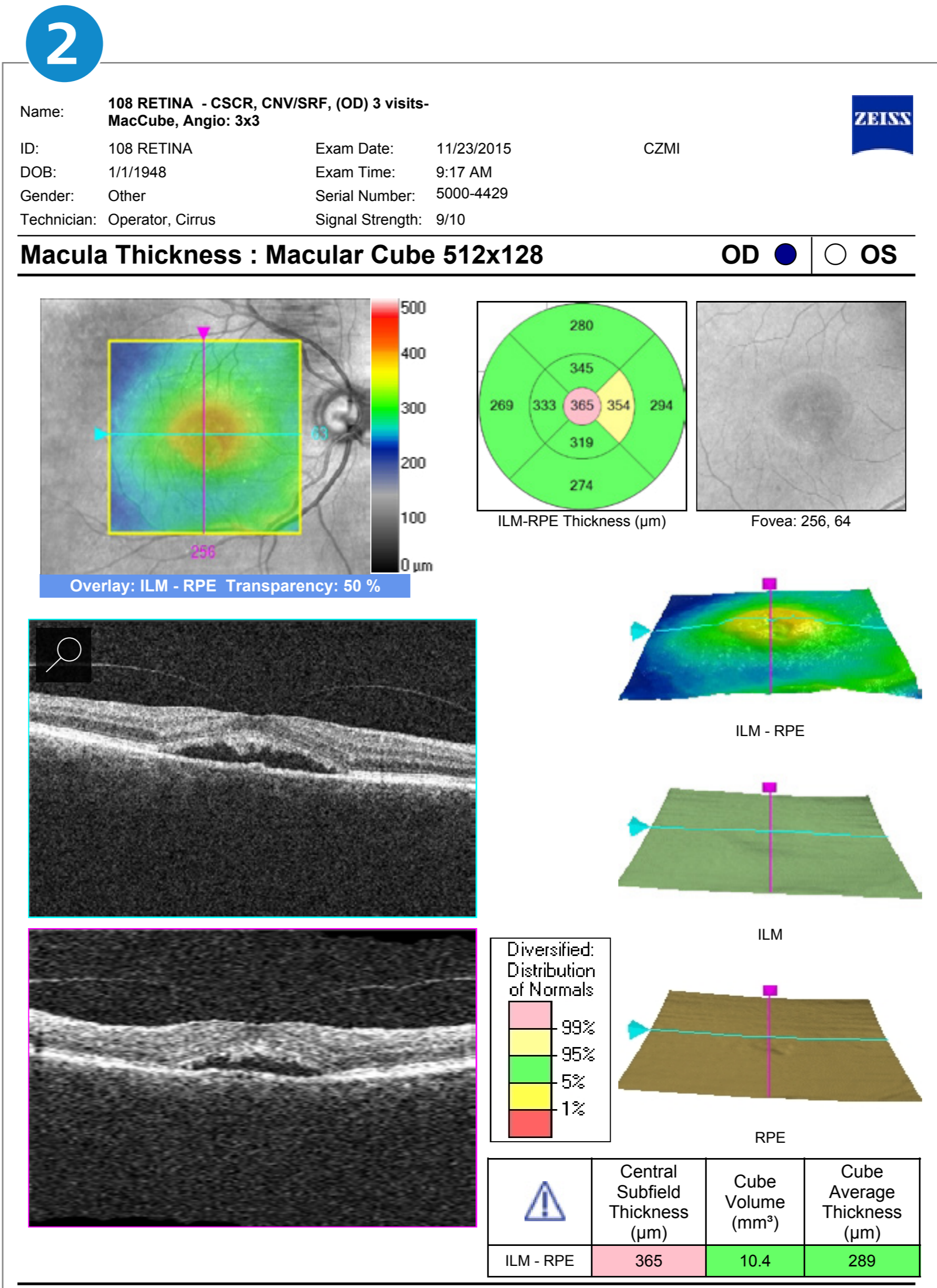
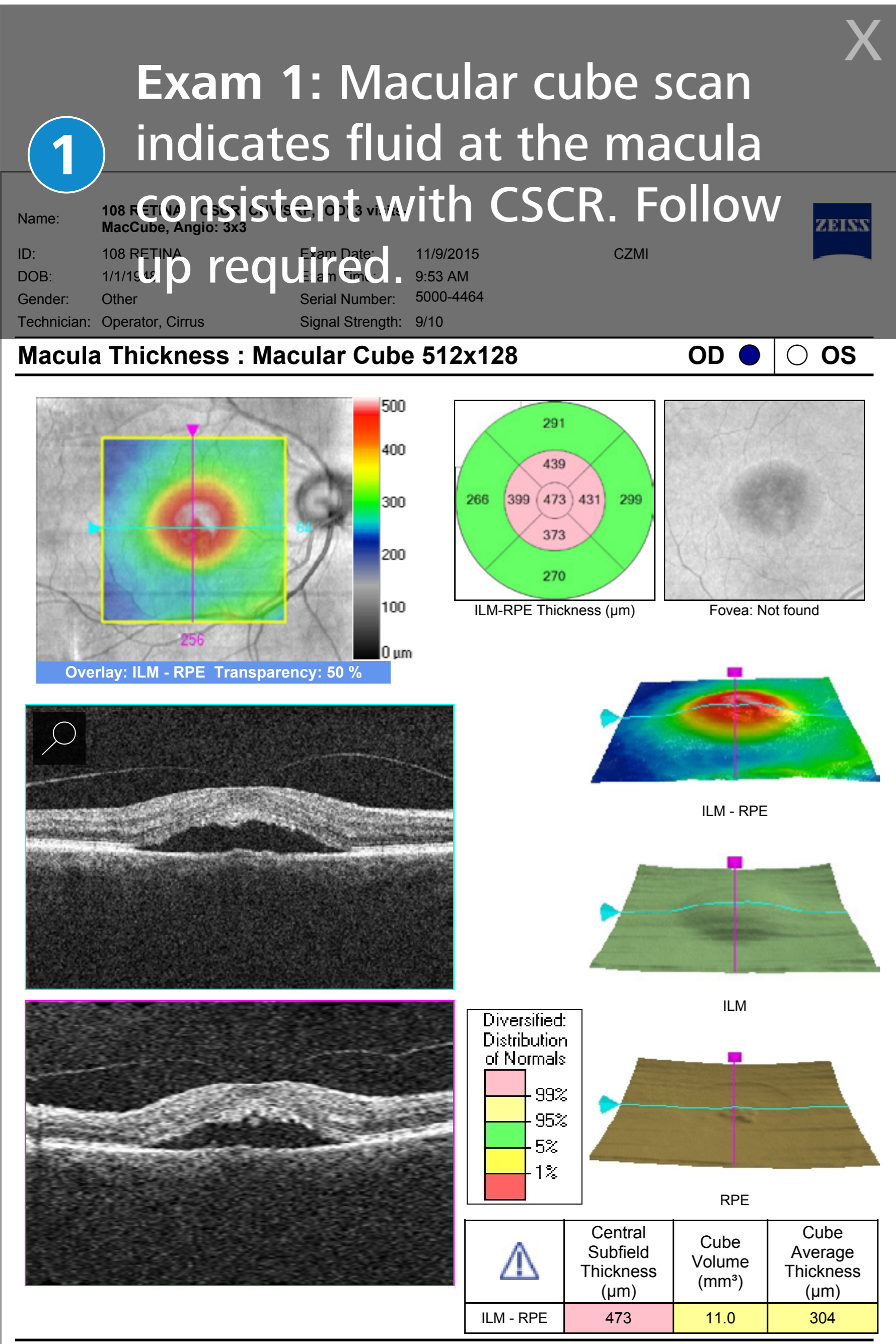


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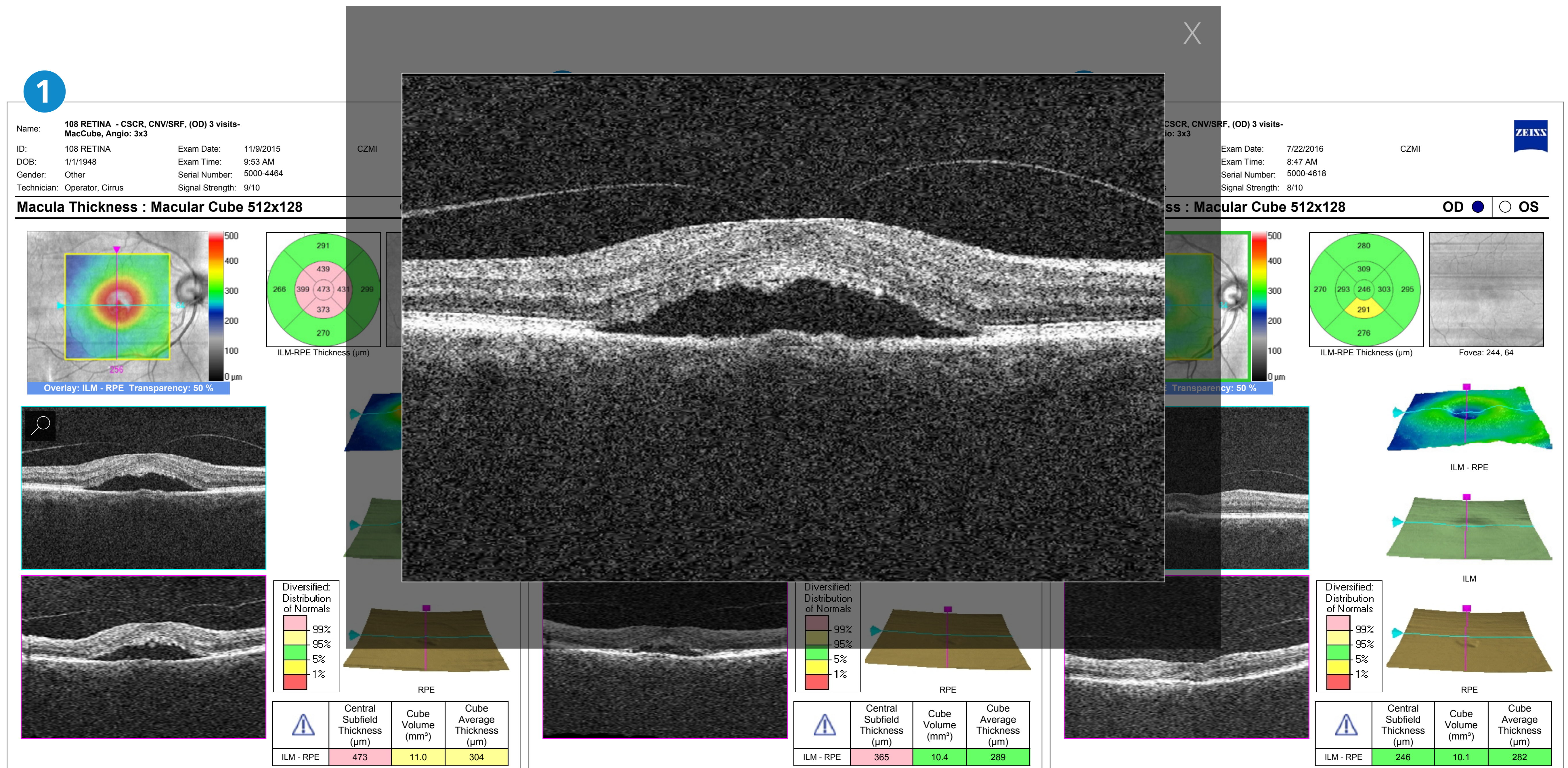


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More »

1

Name: 108 RETINA - CSCR, CNV/SRF, (OD) 3 visits- MacCube, Angio: 3x3

ID: 108 RETINA Exam Date: 11/9/2015 CZMI

DOB: 1/1/1948 Exam Time: 9:53 AM

Gender: Other Serial Number: 5000-4464

Technician: Operator, Cirrus Signal Strength: 9/10

Macula Thickness : Macular Cube 512x128 OD ● ○ OS

ILM-RPE Thickness (μm): 291, 439, 266, 399, 473, 431, 299, 373, 270

Fovea: Not found

Overlay: ILM - RPE Transparency: 50 %

ILM - RPE, ILM, RPE

	Central Subfield Thickness (μm)	Cube Volume (mm ³)	Cube Average Thickness (μm)
ILM - RPE	473	11.0	304

2

Exam 2: Two weeks later, patient reports improved vision. Macular cube scan shows fluid is decreasing

Name: 108 RETINA - CSCR, CNV/SRF, (OD) 3 visits- MacCube, Angio: 3x3

ID: 108 RETINA Exam Date: 11/23/2015 CZMI

DOB: 1/1/1948 Exam Time: 9:17 AM

Gender: Other Serial Number: 5000-4429

Technician: Operator, Cirrus Signal Strength: 9/10

Macula Thickness : Macular Cube 512x128 OD ● ○ OS

ILM-RPE Thickness (μm): 280, 345, 269, 333, 365, 354, 294, 319, 274

Fovea: 256, 64

Overlay: ILM - RPE Transparency: 50 %

ILM - RPE, ILM, RPE

	Central Subfield Thickness (μm)	Cube Volume (mm ³)	Cube Average Thickness (μm)
ILM - RPE	365	10.4	289

3

Name: 108 RETINA - CSCR, CNV/SRF, (OD) 3 visits- MacCube, Angio: 3x3

ID: 108 RETINA Exam Date: 7/22/2016 CZMI

DOB: 1/1/1948 Exam Time: 8:47 AM

Gender: Other Serial Number: 5000-4618

Technician: Operator, Cirrus Signal Strength: 8/10

Macula Thickness : Macular Cube 512x128 OD ● ○ OS

ILM-RPE Thickness (μm): 280, 309, 270, 293, 246, 303, 295, 291, 276

Fovea: 244, 64

Overlay: ILM - RPE Transparency: 50 %

ILM - RPE, ILM, RPE

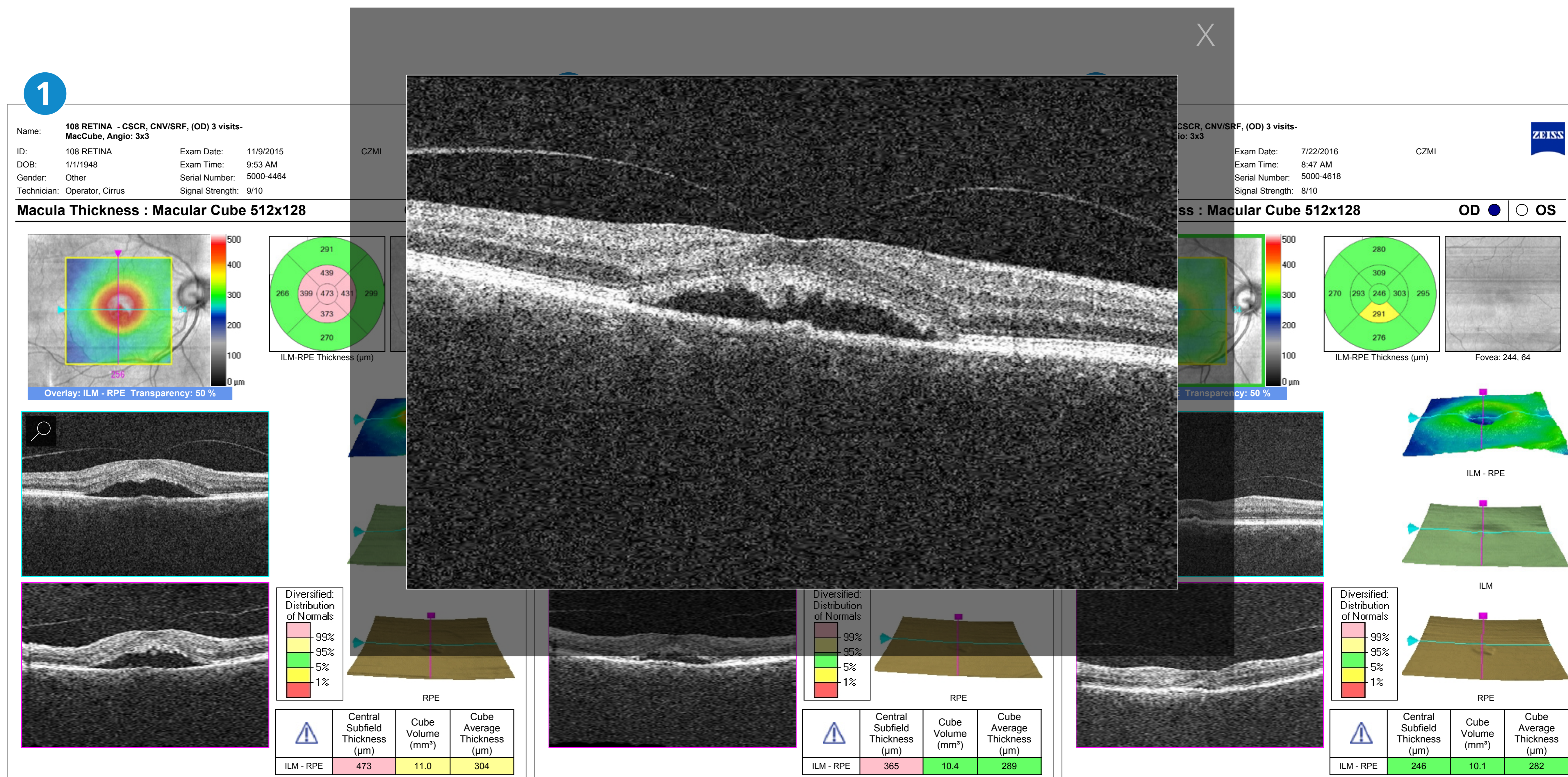
	Central Subfield Thickness (μm)	Cube Volume (mm ³)	Cube Average Thickness (μm)
ILM - RPE	246	10.1	282

Central Serous Chorioretinopathy (CSC)

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[More »](#)

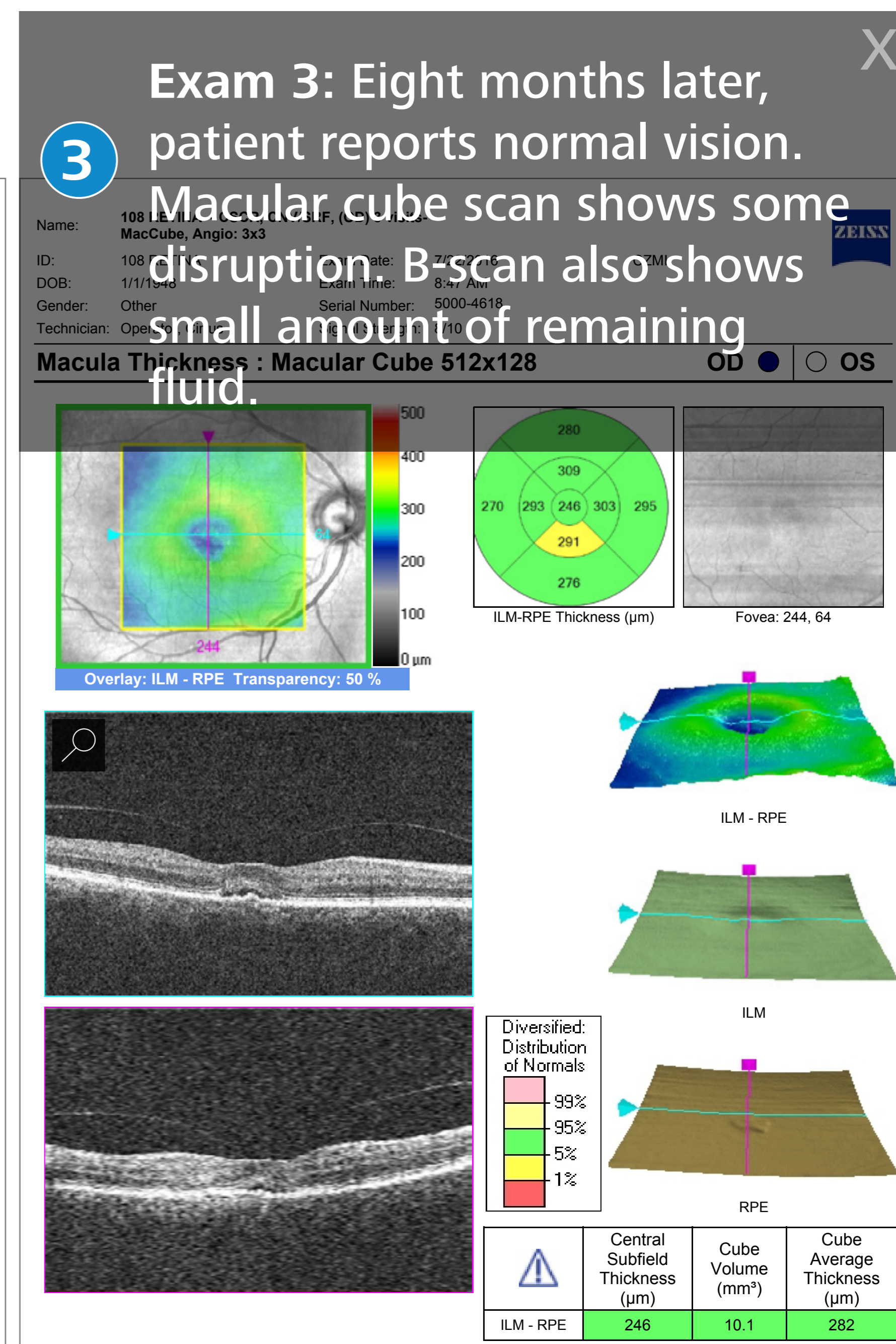
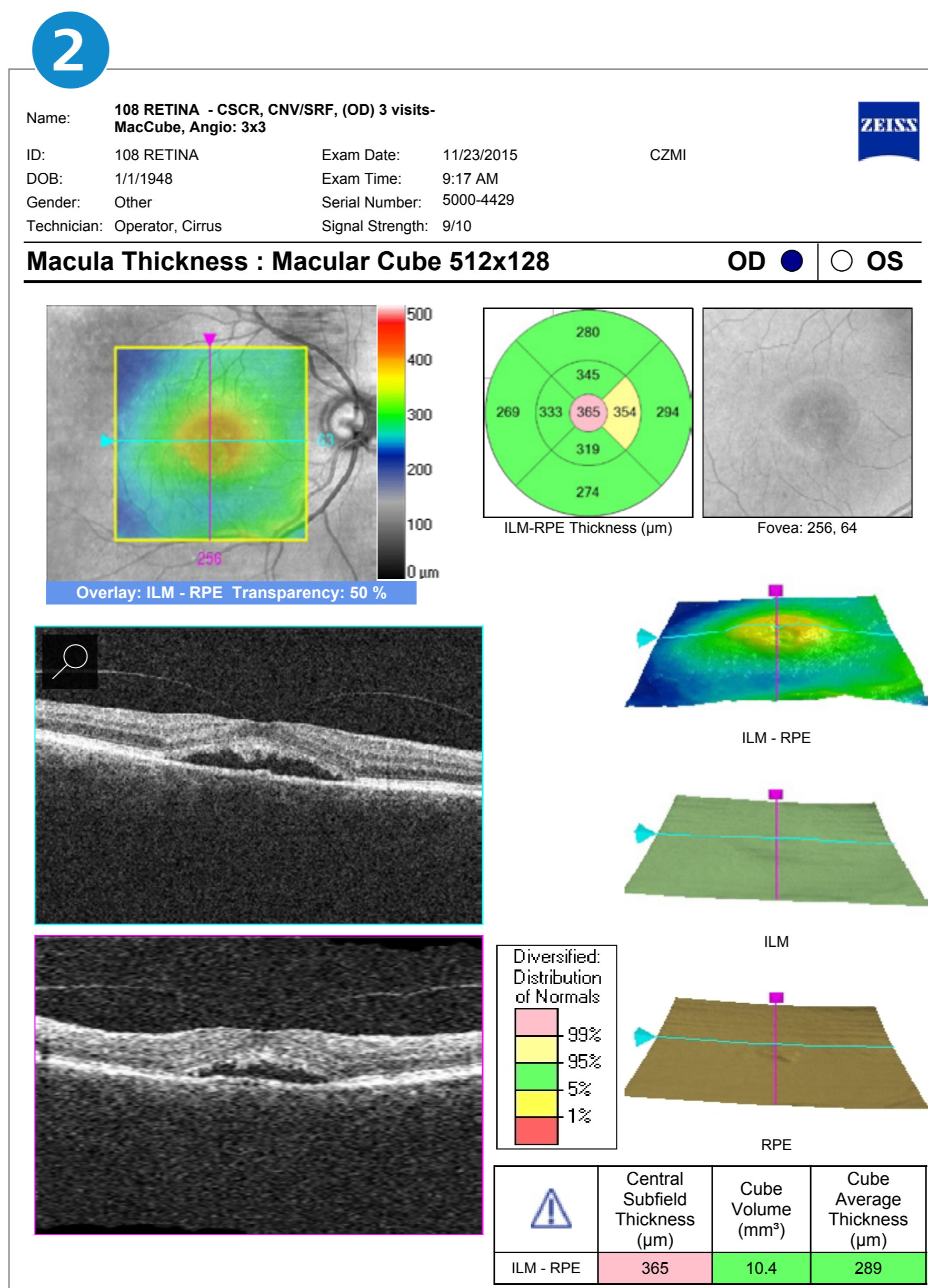
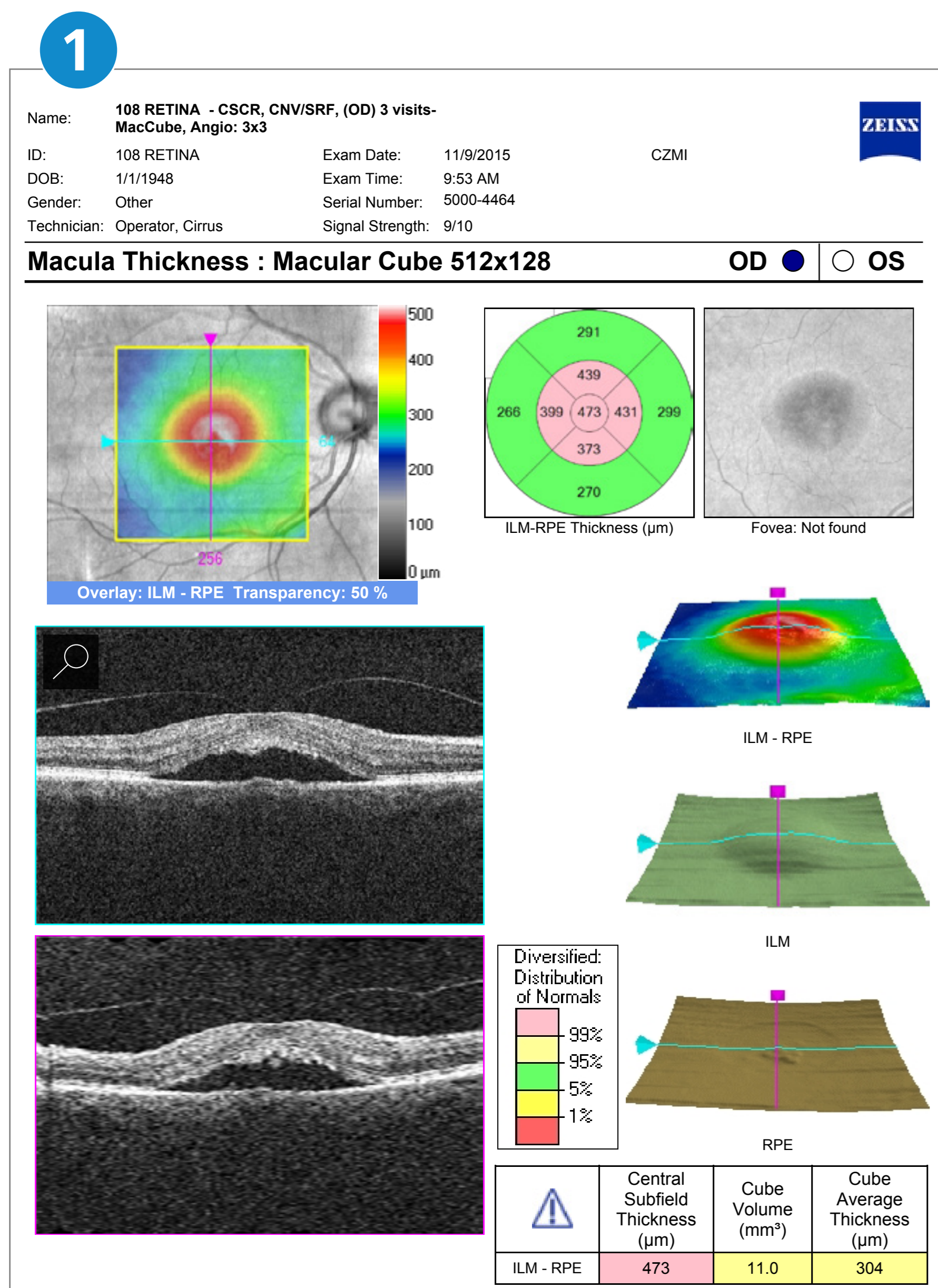


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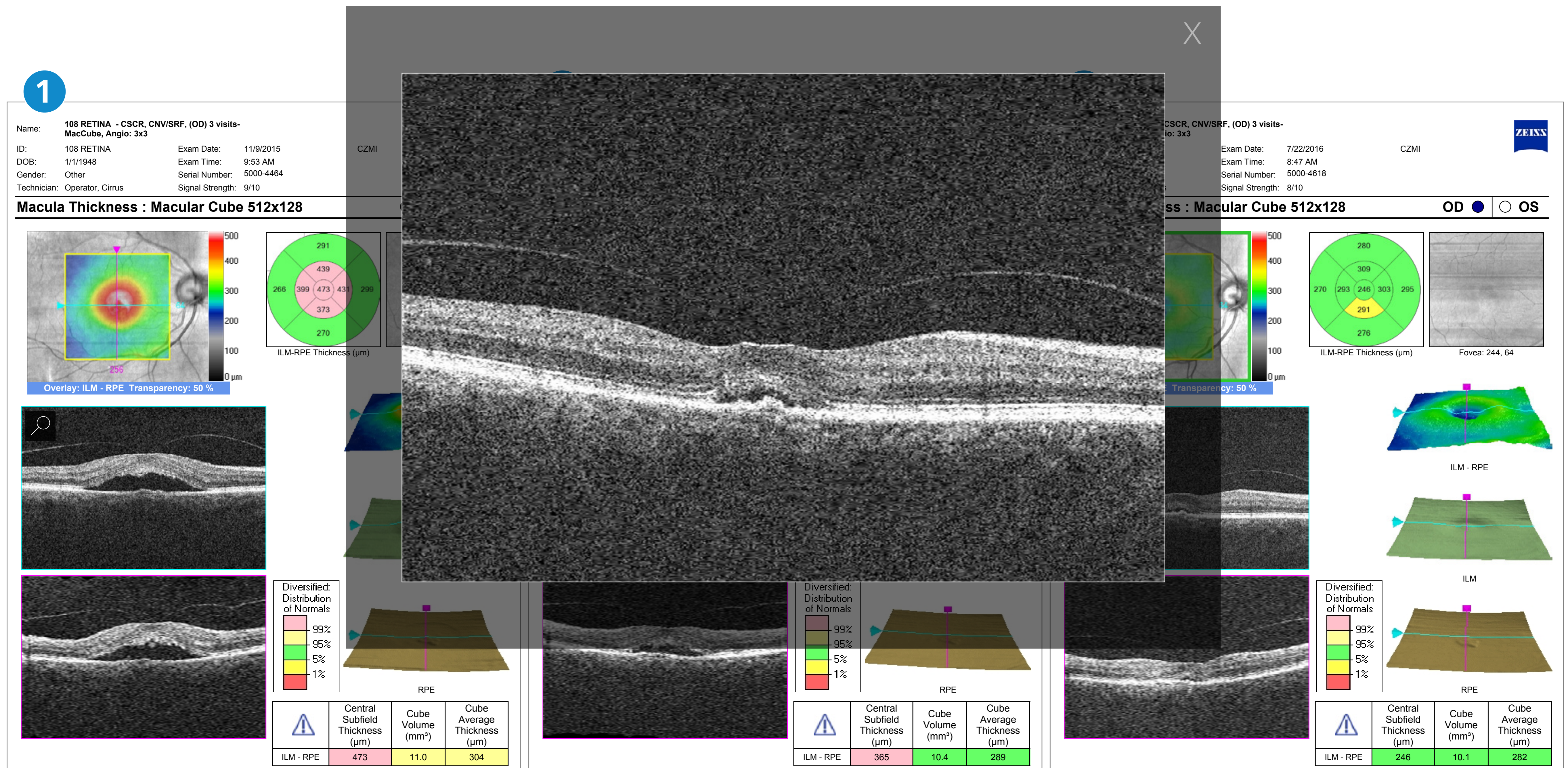


Central Serous Chorioretinopathy (CSC)

Patient History

70-year-old male. Patient presented with complaints of decreased vision in the right eye.

More »



The patient was scanned using OCTA, and a quick overview of the OCTA slab thumbnails identifies the slabs needing further evaluation.

[More »](#)

4 8 RETINA - CSCR... 108 R... Other 1/1/1948 OD Right OS Left Records Edit Tools Help | Cirrus Op...

7/22/2016 Angiography 8x8 mm (9) 8:49:26 AM Angiography Analysis
 11/23/2015 Angiography 3x3 mm (9) 8:48:54 AM Angiography Change Analysis
 11/9/2015 Macular Cube 512x128 (8) 8:47:40 AM Angiography Change Analysis - Manual Selec...
 En Face Analysis

Watermark Date 7/22/2016 8:48:54 AM Edited 10/17/2018 10:53:40 AM Slice: 122 Signal Strength 9/10

AngioPlex - Superficial **Structure - Superficial**

VRI Retina Deep Superficial Choriocapillaris* Whole Eye Choroid RPE-RPE Fit* ORCC Sub-RPE

ETDRS Vessel Density (mm/mm²)

Region	Density
Central	7.2
Inner	18.2
Full	17.0

FAZ

Area	0.00 mm ²
Perimeter	0.16 mm
Circularity	0.92

Overlays: Thickness Map, AngioPlex, Structure (Transparency: 50%), Fundus Image, Slice Navigators

Reference: Top: ILM (Offset: 0), Bottom: IPL (Offset: 0)

Remove Projections

B-Scan Flow: Show 1 color 2 color

Segmentation Lines: Show

Status: Archive volume has not yet been created

CSC

The patient was scanned using OCTA, and a quick overview of the OCTA slab thumbnails identifies the slabs needing further evaluation.

[More »](#)

4 In standard practice, this case would not warrant FA. However, the patient was scanned using OCTA, and a quick overview of the OCTA slab thumbnails identifies the slabs needing further evaluation.

The screenshot displays the OCTA software interface with the following components:

- Thumbnail Grid:** A 5x2 grid of thumbnails for VRI, Retina, Deep, Superficial (highlighted with a blue border), Choriocapillaris*, Whole Eye, Choroid, RPE-RPE Fit*, ORCC, and Sub-RPE.
- AngioPlex - Superficial:** A large central panel showing a detailed view of the superficial retinal vasculature.
- Structure - Superficial:** A color-coded map of the superficial structure with a vertical scale from 0 to 500 μm .
- AngioPlex Matrix:** A control panel with tabs for Vessel and Perfusion, and sub-tabs for Map, Trace, and FAZ. It includes a transparency slider and a table for ETDRS Vessel Density.
- Overlays:** A panel for managing overlays like Thickness Map, AngioPlex, and Structure, with a transparency slider.
- Reference/Offset:** A table for setting reference and offset values for Top and Bottom layers.
- Bottom Bar:** Includes a status message "Archive volume has not yet been created", an "ID Patient" button, and "Acquire", "Analyze", and "Finish" buttons.

Region	Density
Central	7.2
Inner	18.2
Full	17.0

Area	Perimeter	Circularity
0.00 mm ²	0.16 mm	0.92

Reference	Offset
Top: ILM	0
Bottom: IPL	0

CSC

The patient was scanned using OCTA, and a quick overview of the OCTA slab thumbnails identifies the slabs needing further evaluation.

[More »](#)

4

8 RETINA - CSCR... 108 R... Other 1/1/1948 OD Right OS Left Records Edit Tools Help | Cirrus Op...

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AngioPlex - Superficial Structure - Superficial

VRI Retina Deep Superficial Choriocapillaris Whole Eye Choroid RPE-RPE Fit* ORCC Sub-RPE

Perfusion Trace FAZ Density (mm/mm²)

Region	Density
Central	7.2
Inner	18.2
Full	17.0

Area 0.00 mm²
Perimeter 0.16 mm
Circularity 0.92

Overlays
Thickness Map
 AngioPlex
 Structure
Transparency (%) 50
 Fundus Image
 Slice Navigators

Reference Offset
Top: ILM 0
Bottom: IPL 0
 Remove Projections

B-Scan Flow Show 1 color 2 color
Segmentation Lines Show Edit

Status : Archive volume has not yet been created

ID Patient Acquire Analyze Finish

Summary

OCTA reveals the presence of CNV in a way that the standard OCT B-scan or macular cube scan cannot, thereby elevating confidence before a patient is referred for anti-VEGF injections.

5 8 RETINA - CSCR... 108 R... Other 1/1/1948 OD Right OS Left Records Edit Tools Help | Cirrus Op...

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Angiography Analysis
 Angiography Change Analysis
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 En Face Analysis

Watermark Date 7/22/2016 8:48:54 AM Edited 10/17/2018 10:53:40 AM Slice: 122 Signal Strength 9/10

VRI Retina
 Deep Superficial
 Choriocapillaris* Whole Eye
 Choroid RPE-RPE Fit*
 ORCC Sub-RPE

AngioPlex - RPE-RPE Fit Structure - RPE-RPE Fit

AngioPlex Matrix

Overlays
 Thickness Map
 AngioPlex
 Structure
 Transparency (%) 50
 Fundus Image
 Slice Navigators
 Reference Offset
 Top: RPE -36
 Bottom: RPEFit 64
 Remove Projections

B-Scan Flow Show 1 color 2 color
 Segmentation Lines Show Edit

Status : Archive volume has not yet been created ID Patient Acquire Analyze Finish

Summary

OCTA reveals the presence of CNV in a way that the standard OCT B-scan or macular cube scan cannot, thereby elevating confidence before a patient is referred for anti-VEGF injections.

5 RPE to RPE fit slab reveals CNV

7/22/2016 Angiography 8x8 mm (9) 8:49:28 AM
 11/23/2015 Angiography 3x3 mm (9) 8:48:54 AM
 11/9/2015 Macular Cube 512x128 (8) 8:47:40 AM

Angiography Analysis
 Angiography Change Analysis
 Angiography Change Analysis - Manual Selec...
 En Face Analysis

Watermark Date 7/22/2016 8:48:54 AM Edited 10/17/2018 10:53:40 AM Slice: 122 Signal Strength 9/10

AngioPlex - RPE-RPE Fit Structure - RPE-RPE Fit

VRI Retina Deep Superficial Choriocapillaris* Whole Eye Choroid RPE-RPE Fit* ORCC Sub-RPE

AngioPlex Matrix

Overlays

- Thickness Map
- AngioPlex
- Structure
- Transparency (%) 50
- Fundus Image
- Slice Navigators

Reference Offset

Reference	Offset
Top: RPE	-36
Bottom: RPEFit	64

Remove Projections

Status : Archive volume has not yet been created

ID Patient Acquire Analyze Finish

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AngioPlex - RPE-RPE Fit Structure - RPE-RPE Fit

VRI Retina Deep Superficial Choriocapillaris Whole Eye Choroid RPE-RPE Fit* ORCC Sub-RPE

AngioPlex Matrix

Overlays
Thickness Map
 AngioPlex
 Structure
Transparency (%) 50
 Fundus Image
 Slice Navigators

Reference	Offset
Top: RPE	-36
Bottom: RPEFit	64

Remove Projections

B-Scan Flow Show 1 color 2 color
Segmentation Lines Show Edit

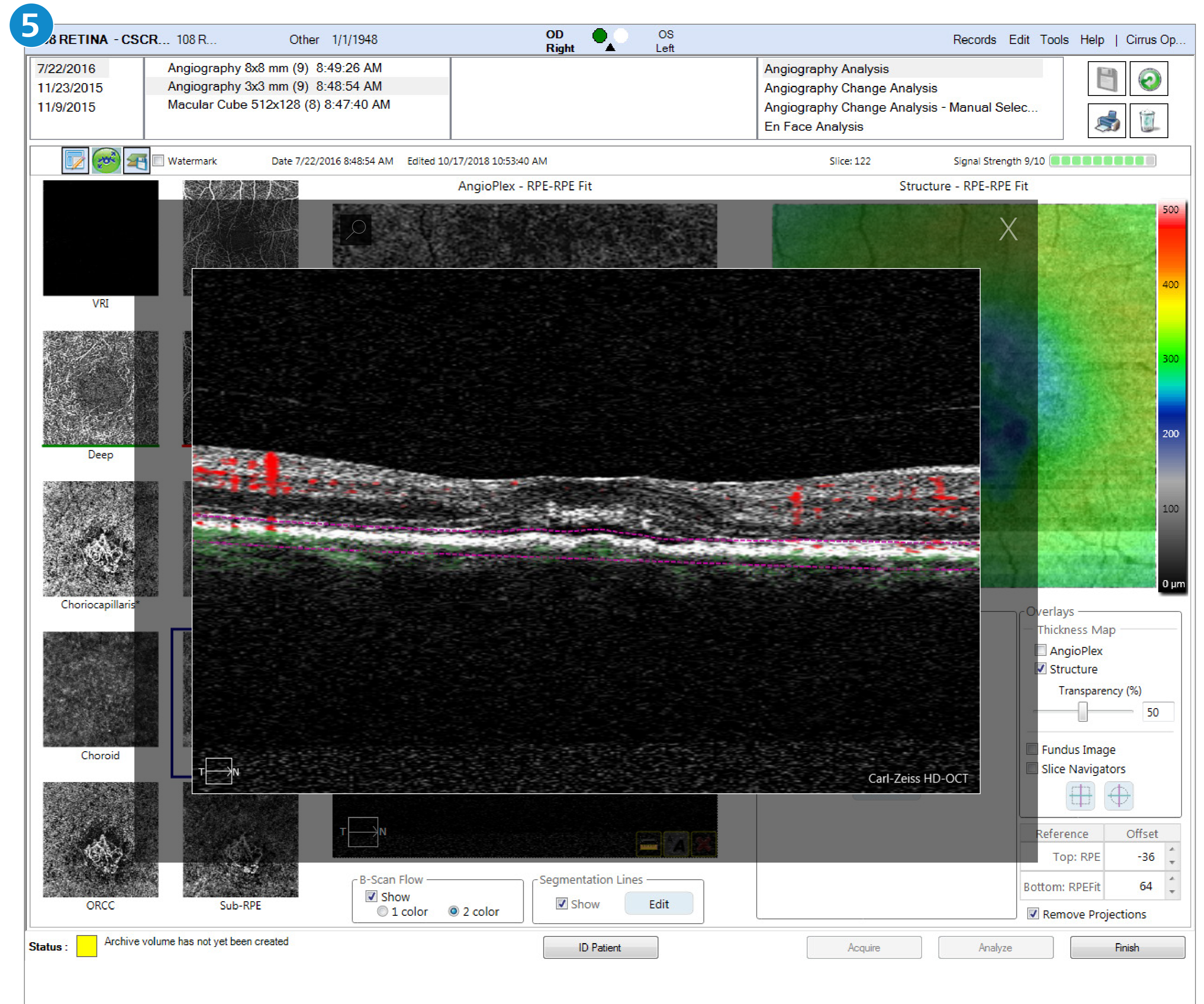
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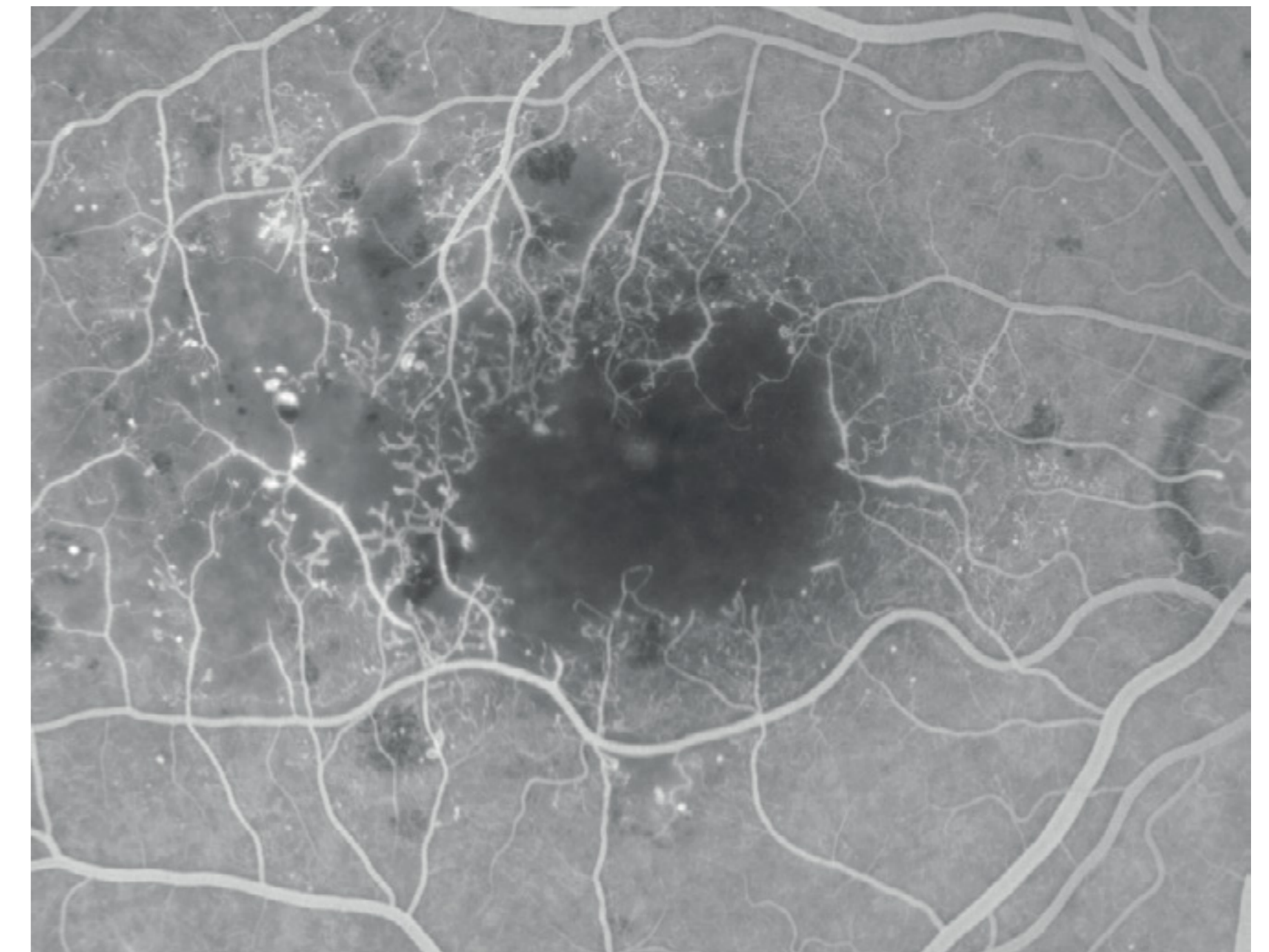
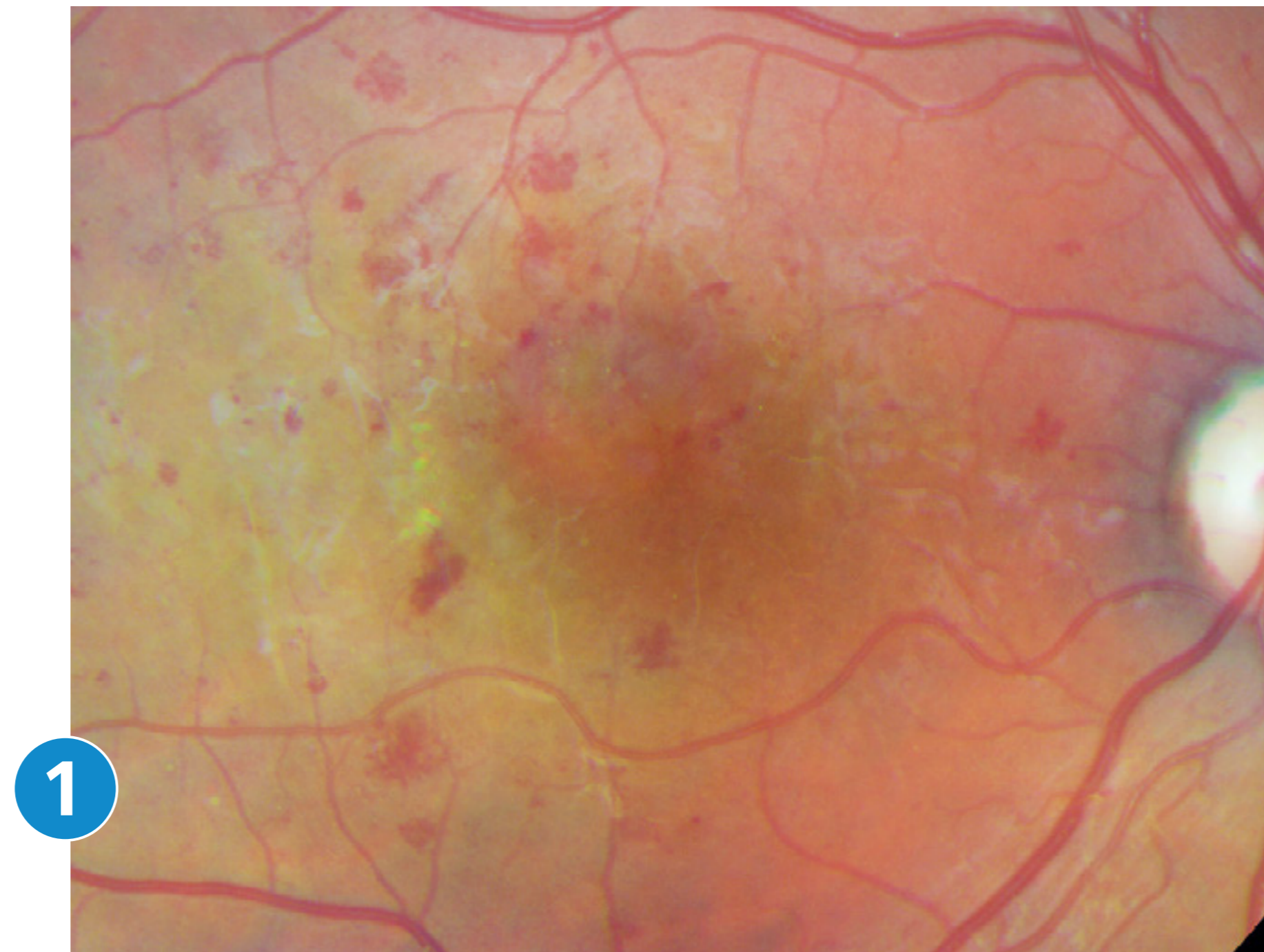


Ischemic Diabetic Maculopathy

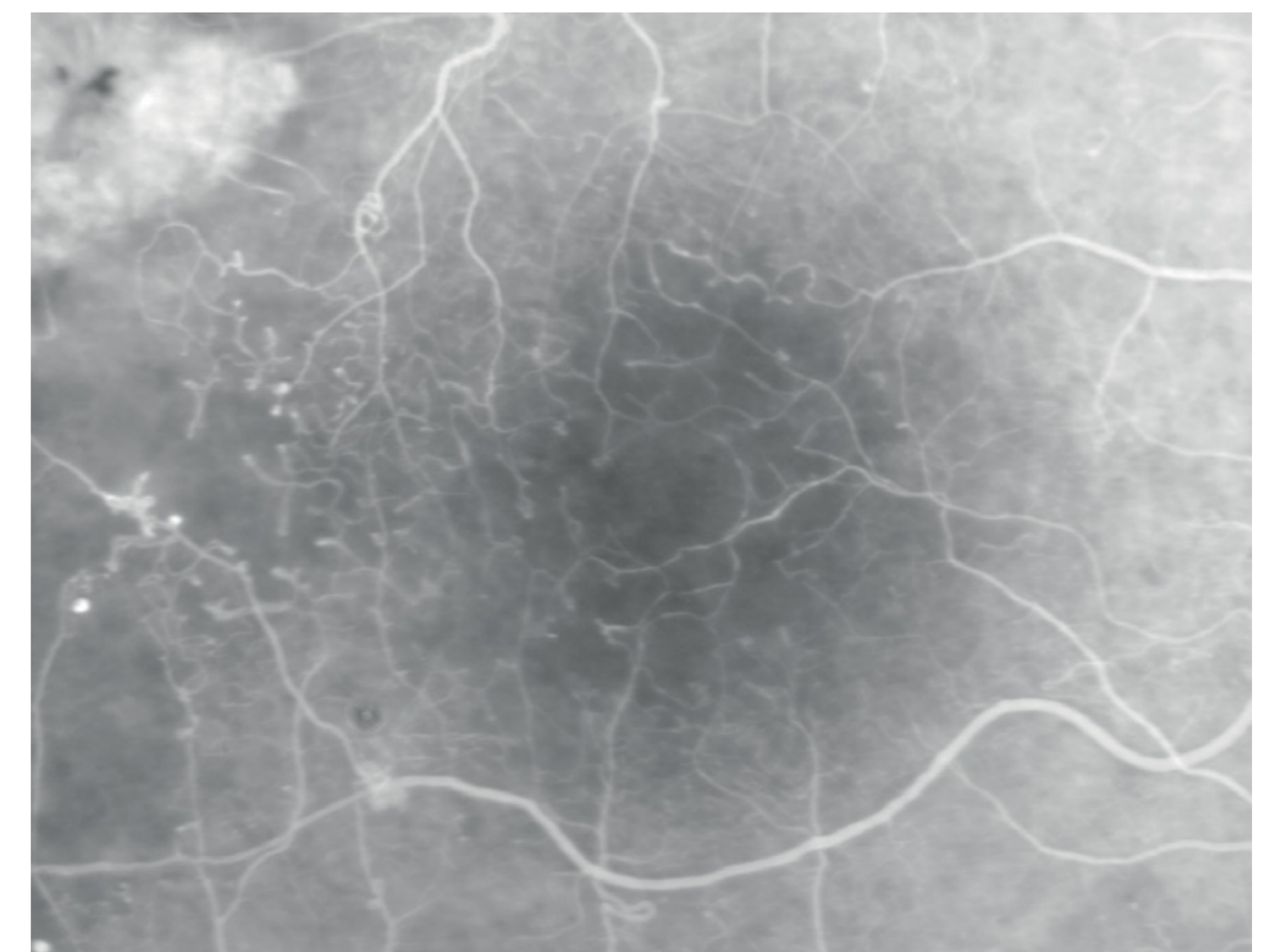
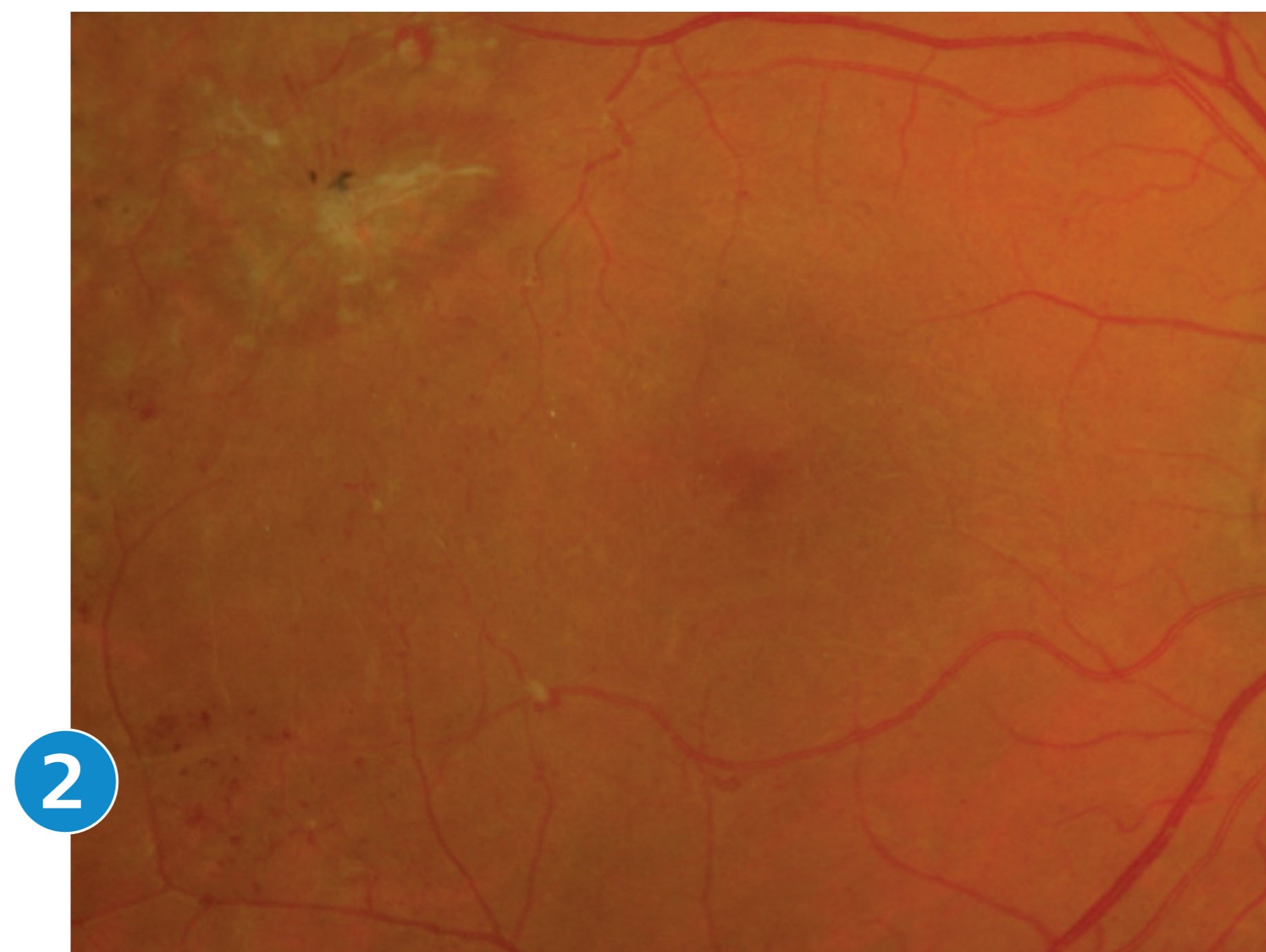
Patient History

This patient was first imaged on a traditional fundus camera.

Color fundus images as well as fluorescein angiography images were taken prior to OCT Angiography.



[More »](#)



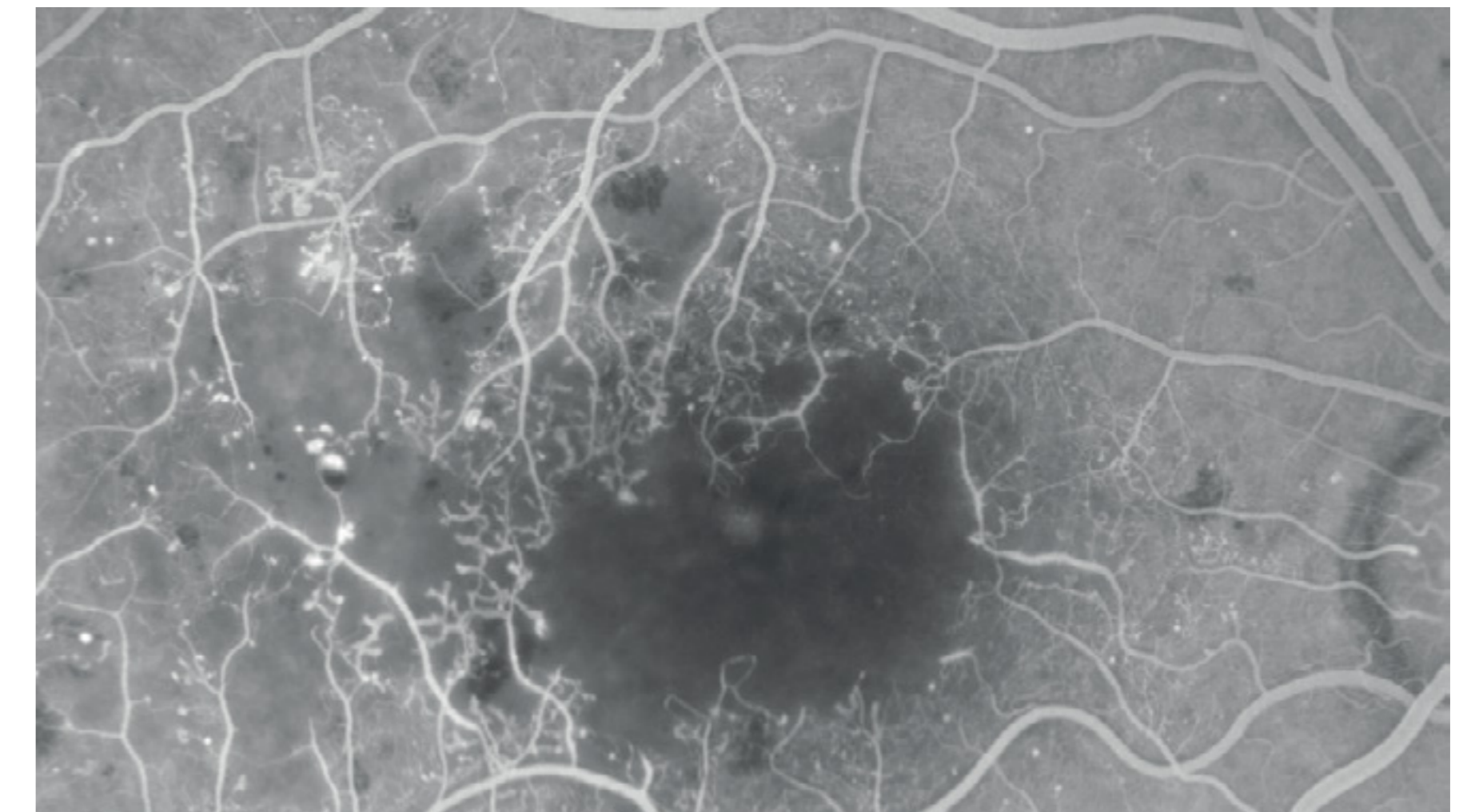
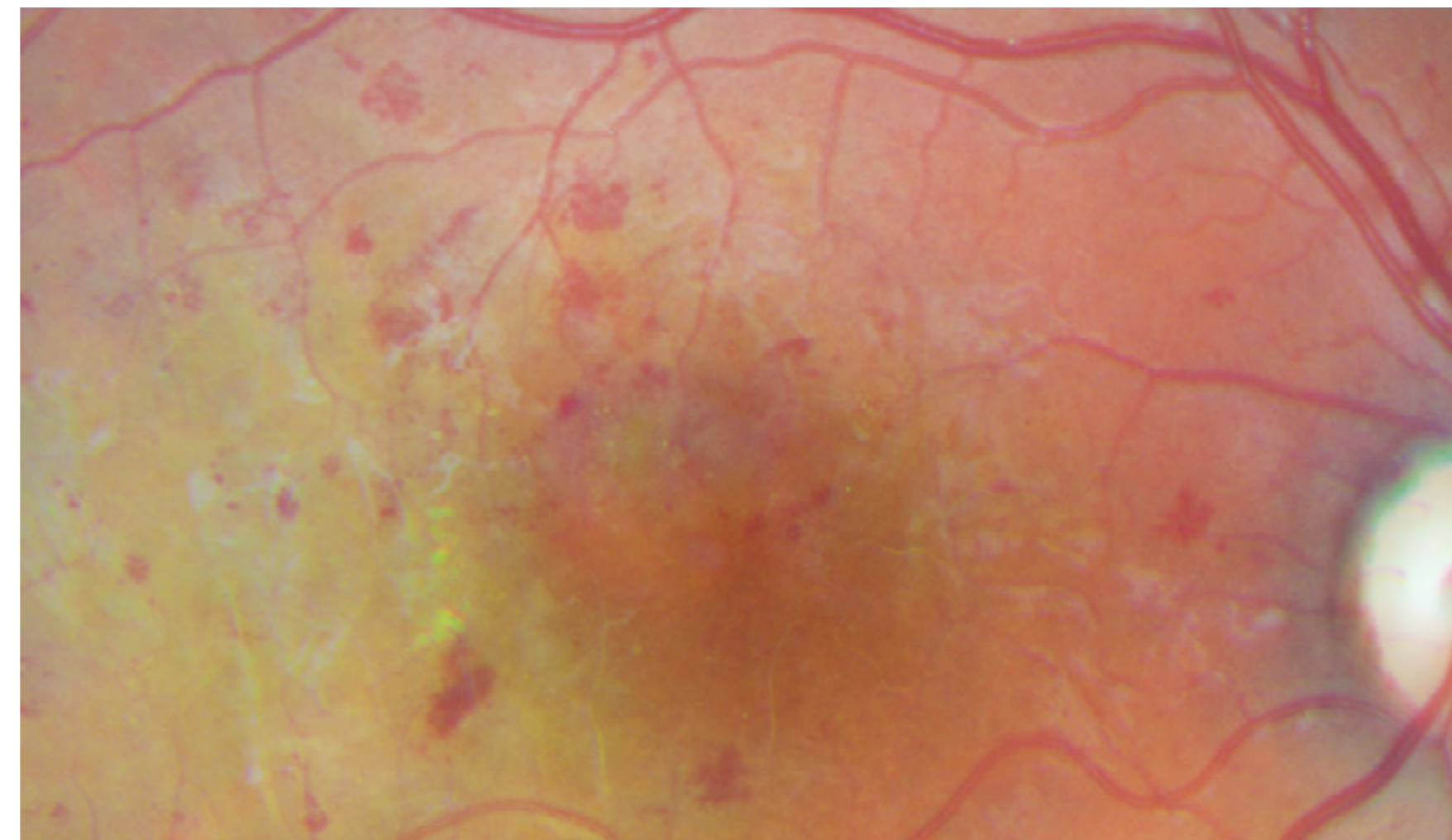
Ischemic Diabetic Maculopathy

Patient History

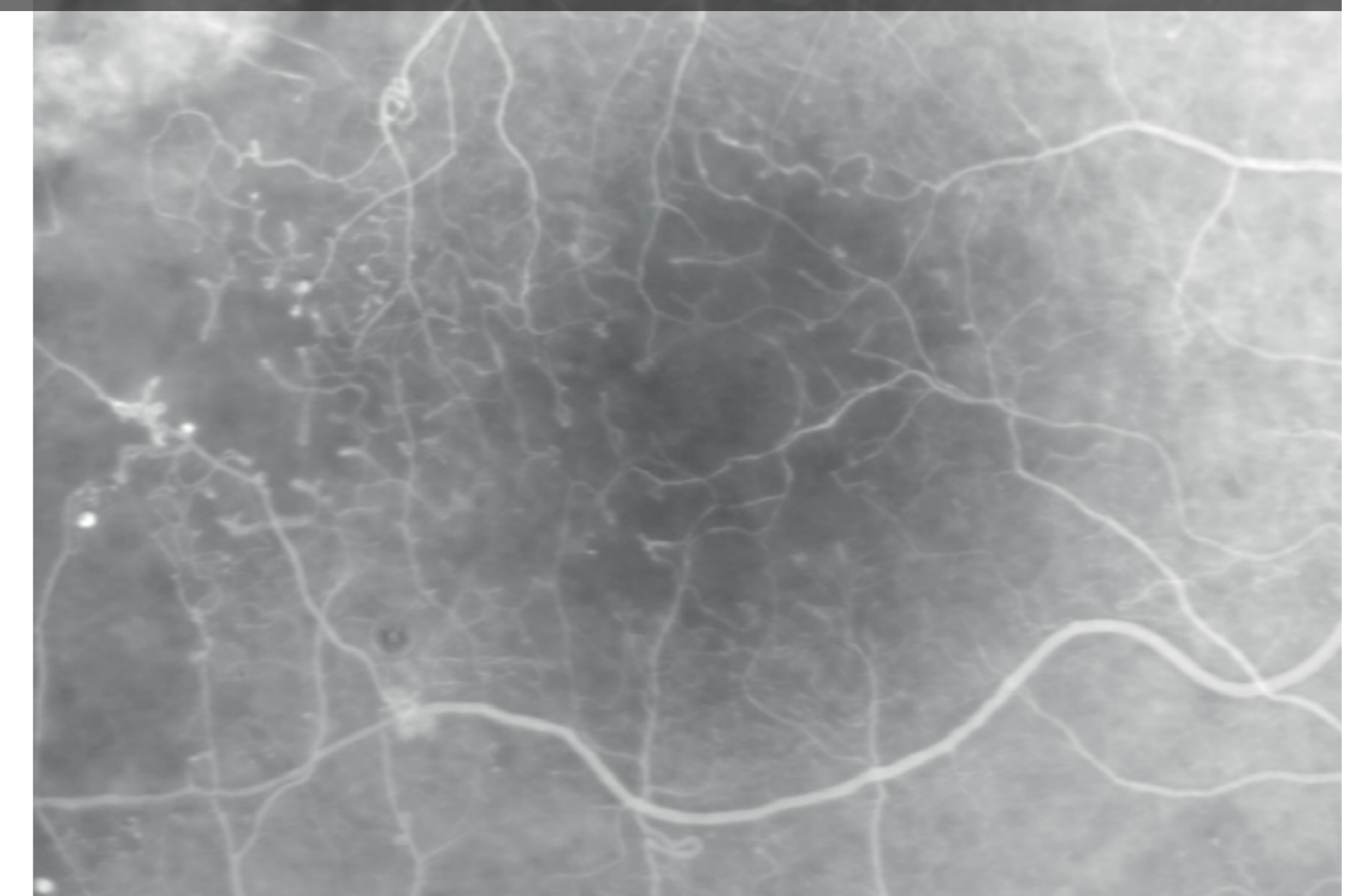
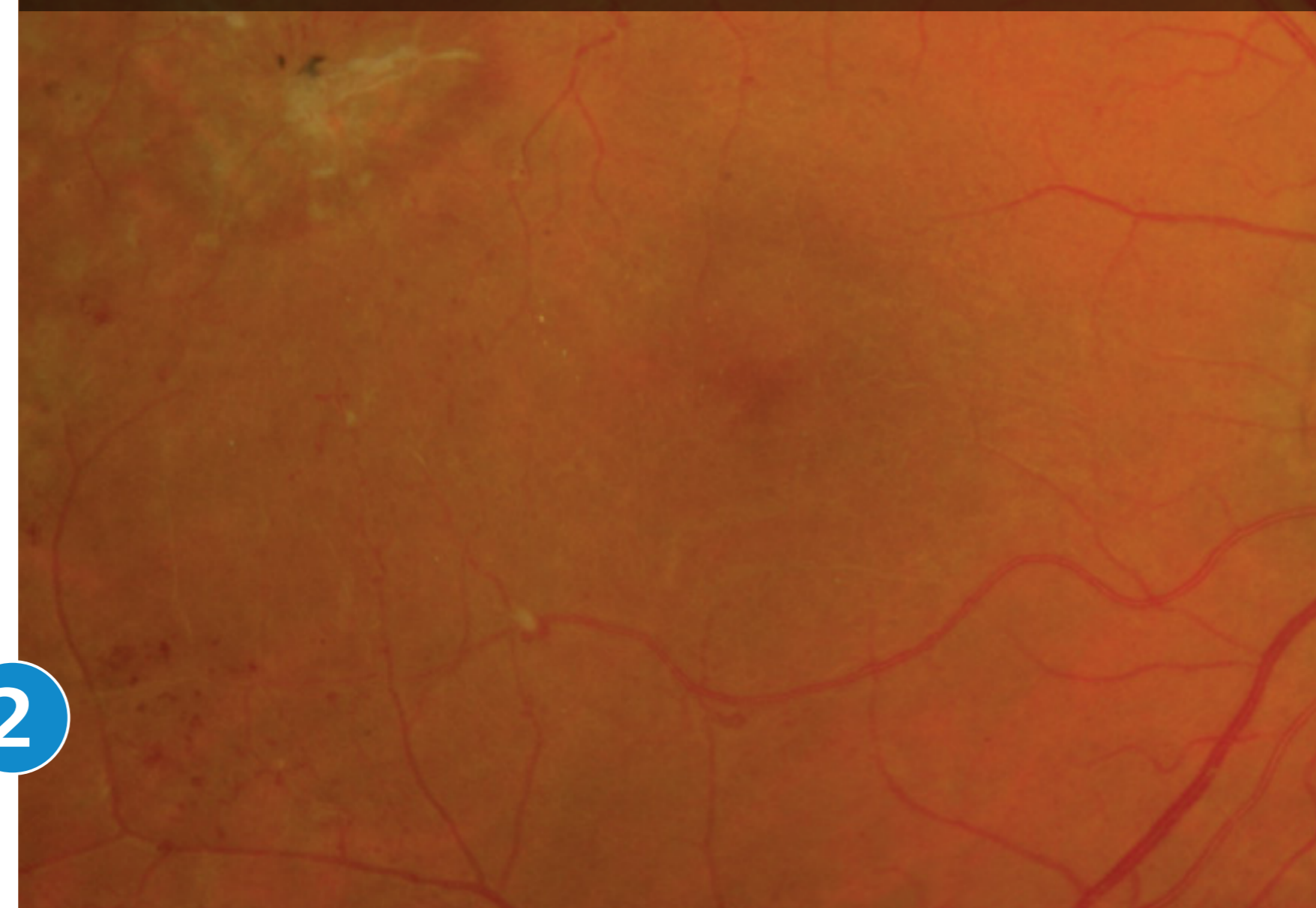
This patient was first imaged on a traditional fundus camera.

Color fundus images as well as fluorescein angiography images were taken prior to OCT Angiography.

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1 Exam 1: Traditional color fundus shows hemorrhages, exudates and microaneurysm. Corresponding fluorescein angiography (FA) reveals ischemic diabetic maculopathy. In 2011 and 2012, the patient returned for their second and third follow-up exams, during which additional FA images taken revealed a loss of macular capillaries over time and growth of new vessels in the macula respectively.

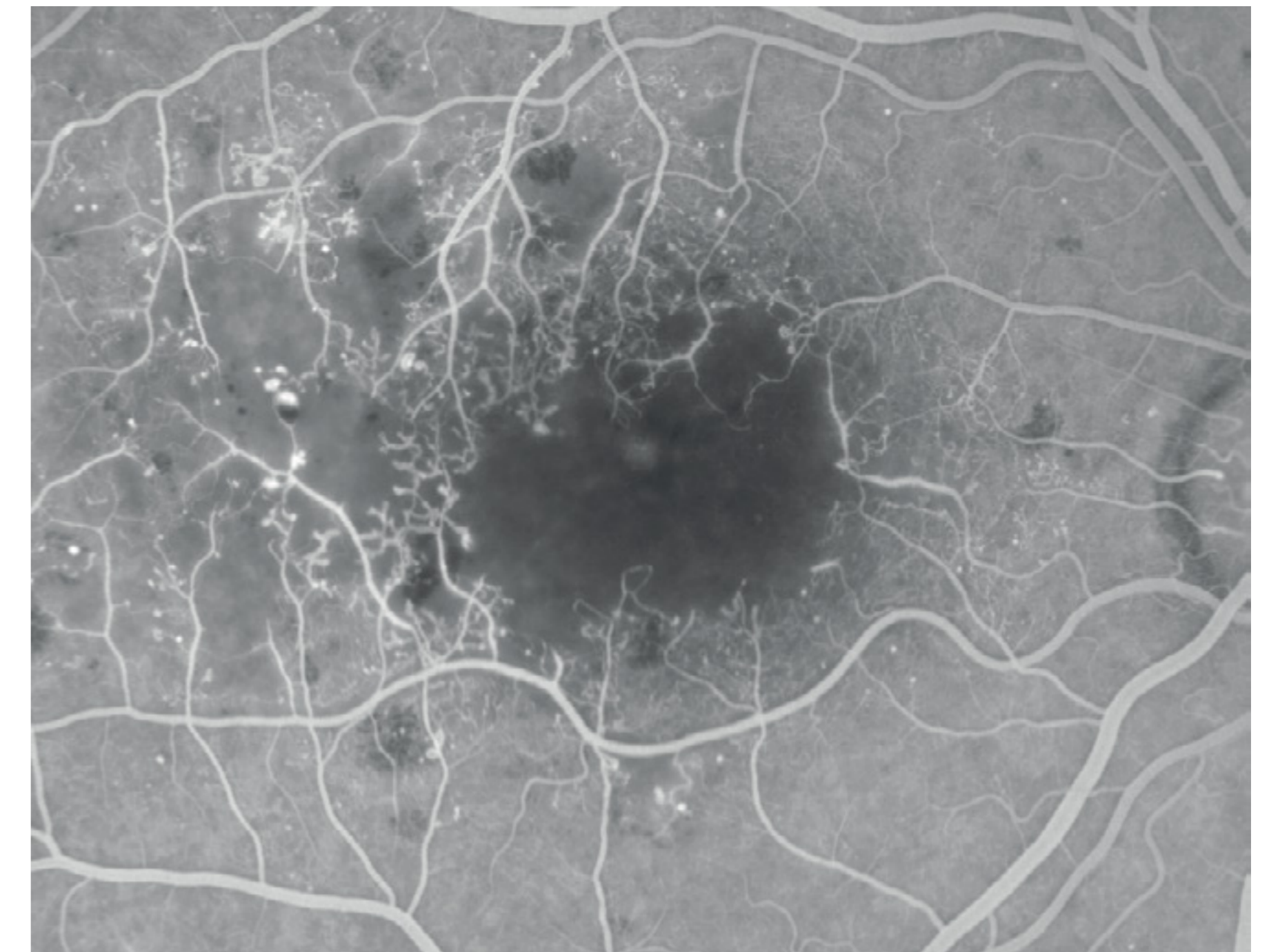
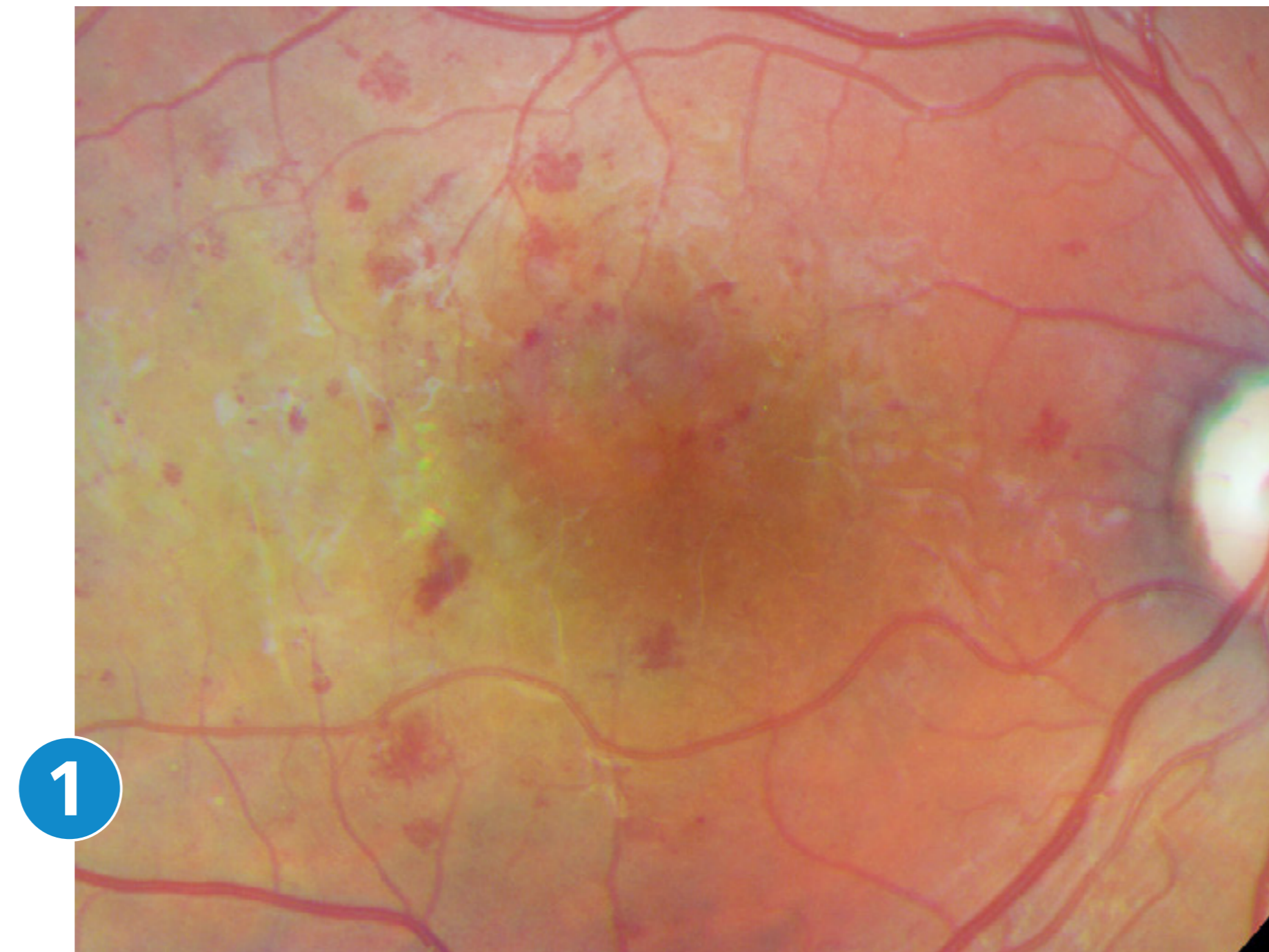


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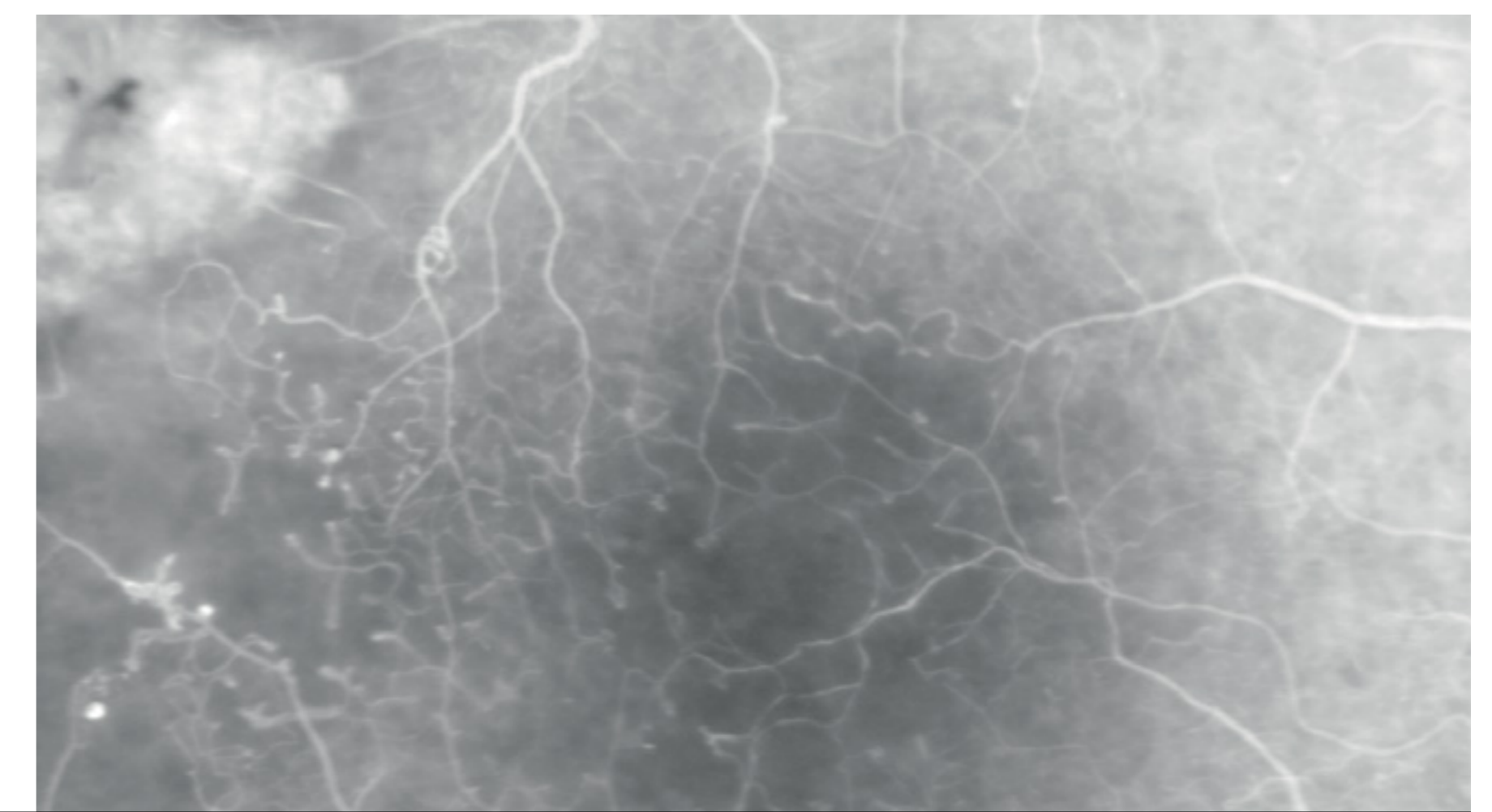
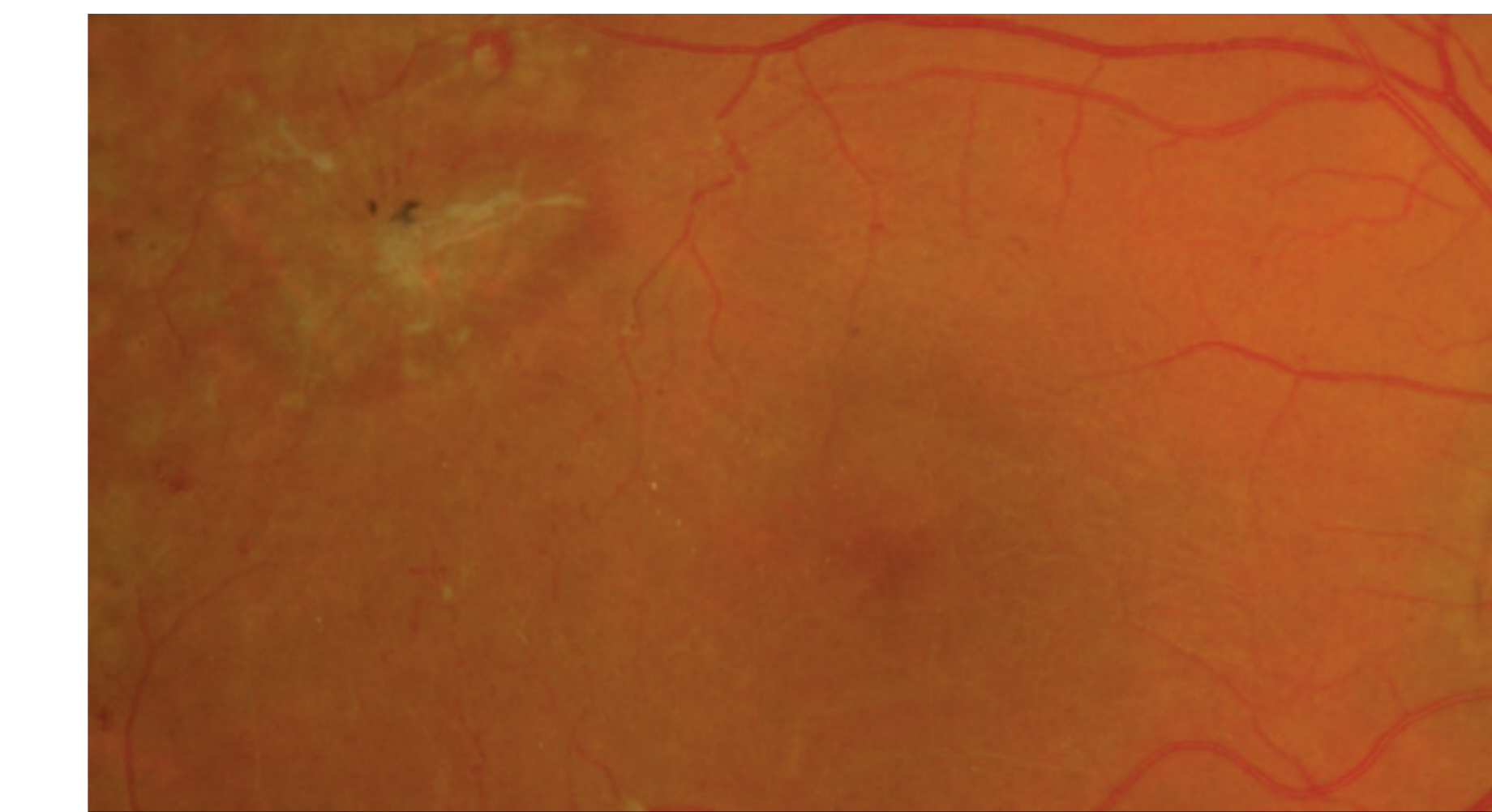
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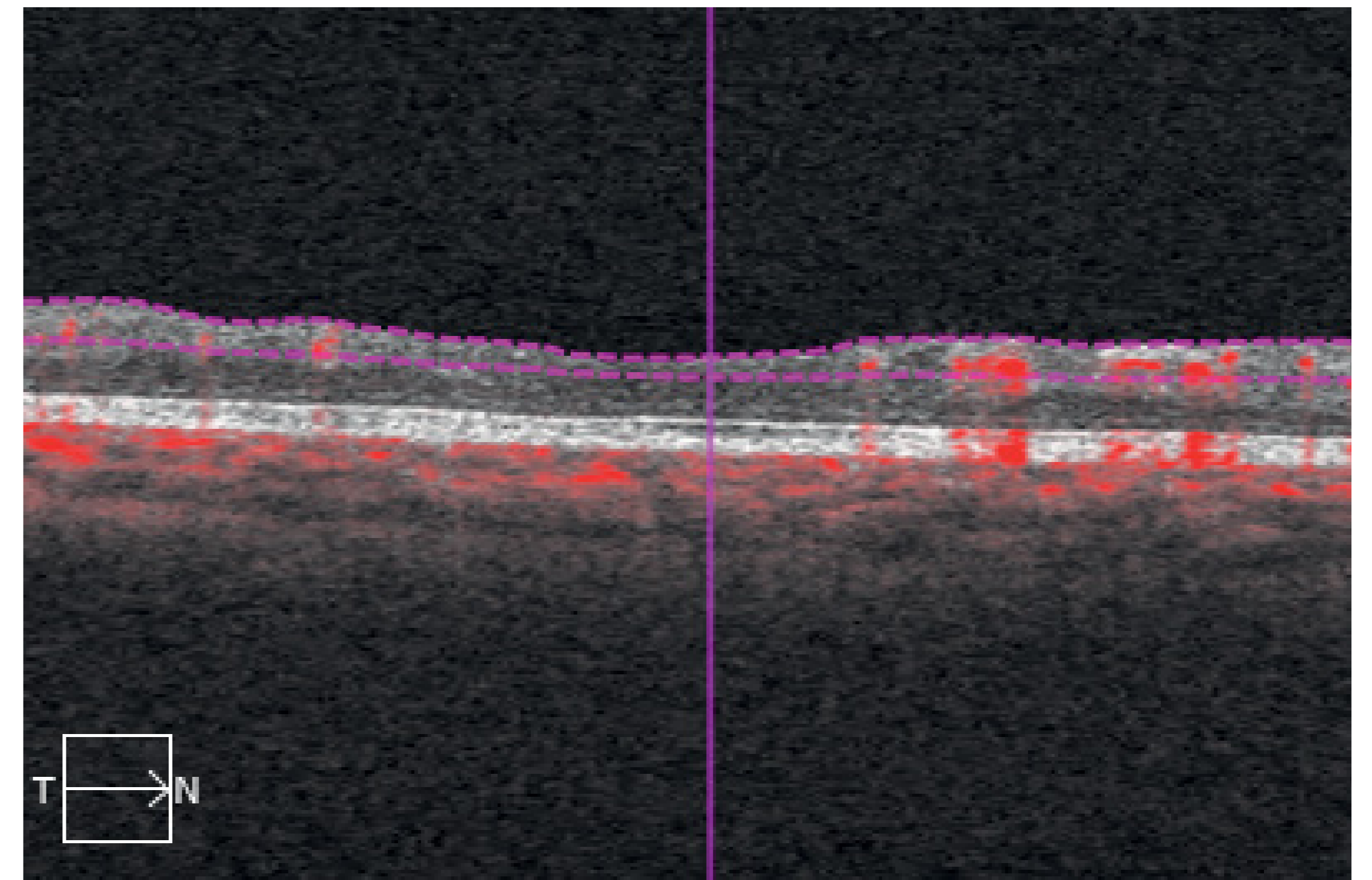
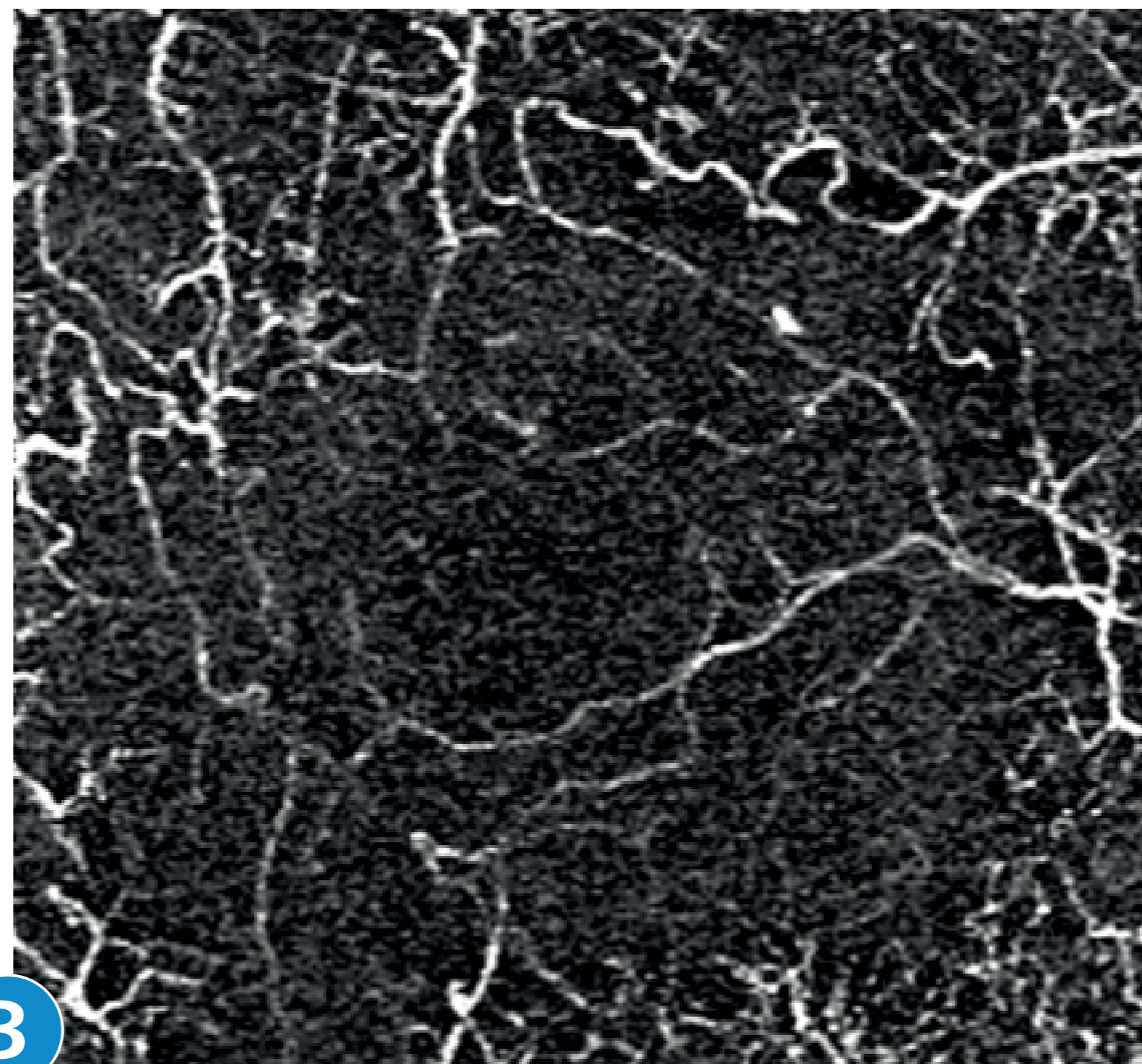
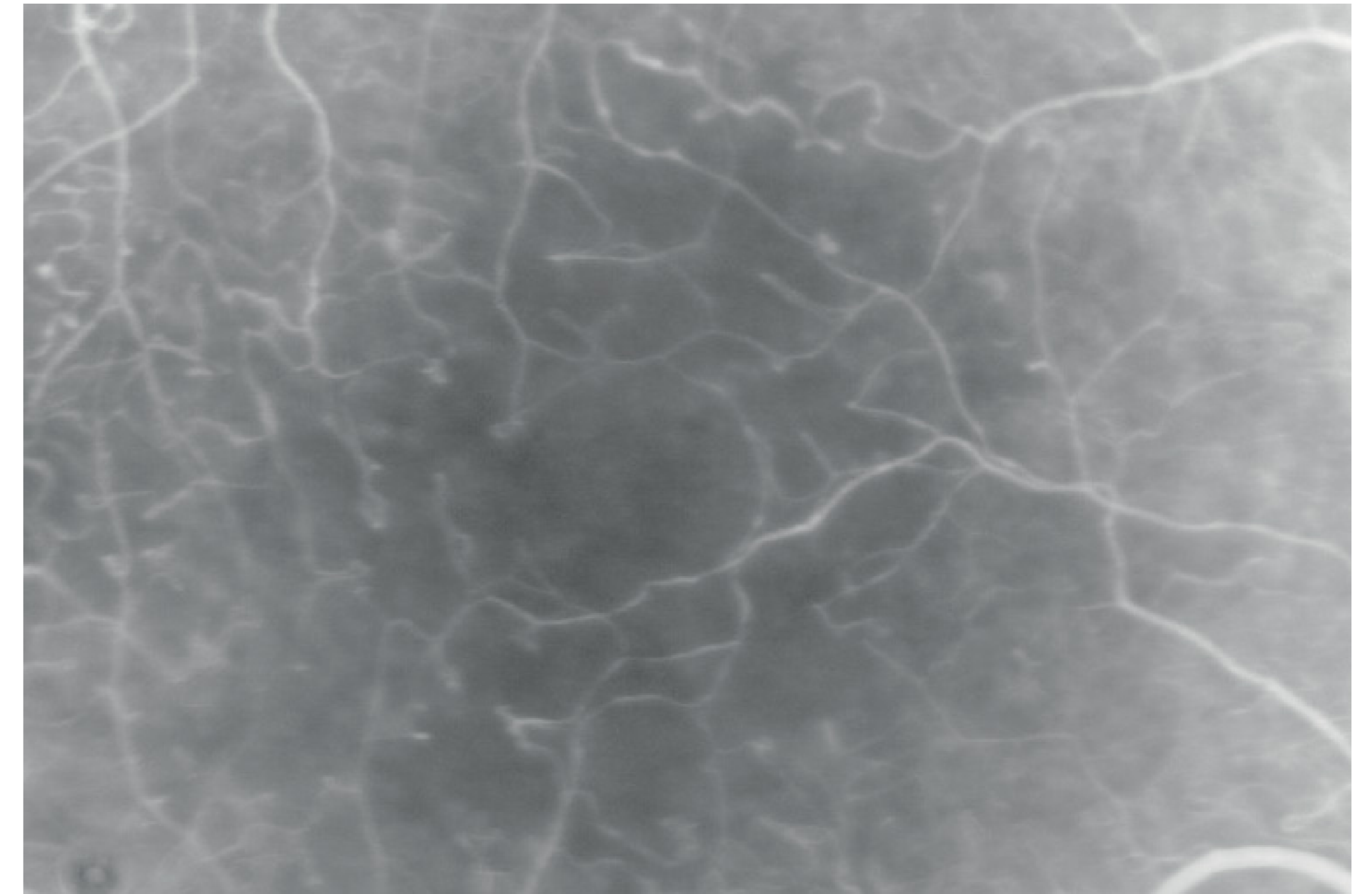
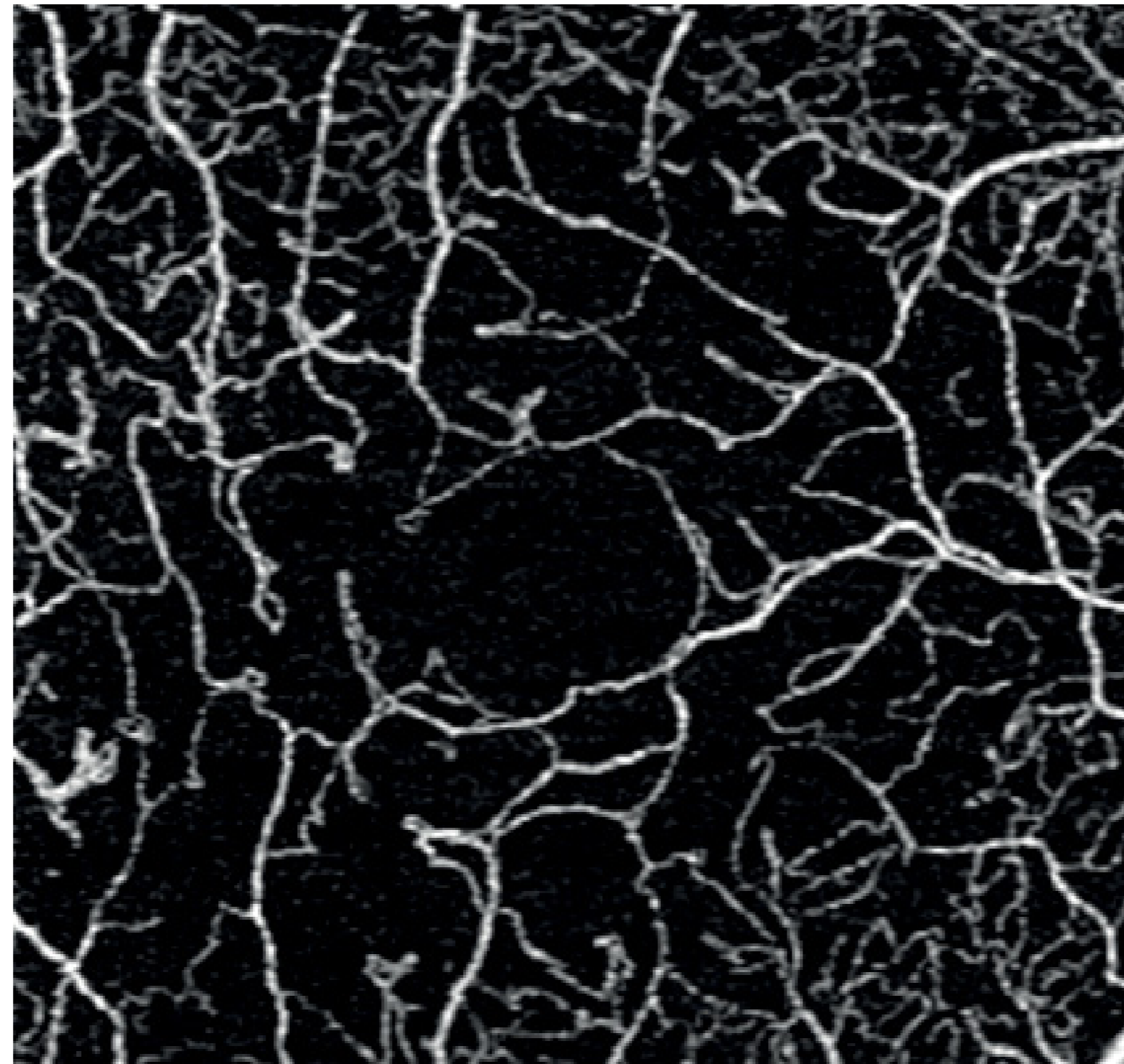


2 **Exam 4 (2016):** During the fourth exam, the limited FoV of the color fundus image suggests that the hemorrhages have improved. Whereas, the FA image shows reperfusion of the macula. X

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Summary

In such cases, OCTA may be comparable to FA and preferred since OCTA is much quicker, non-invasive and more comfortable for the patient.

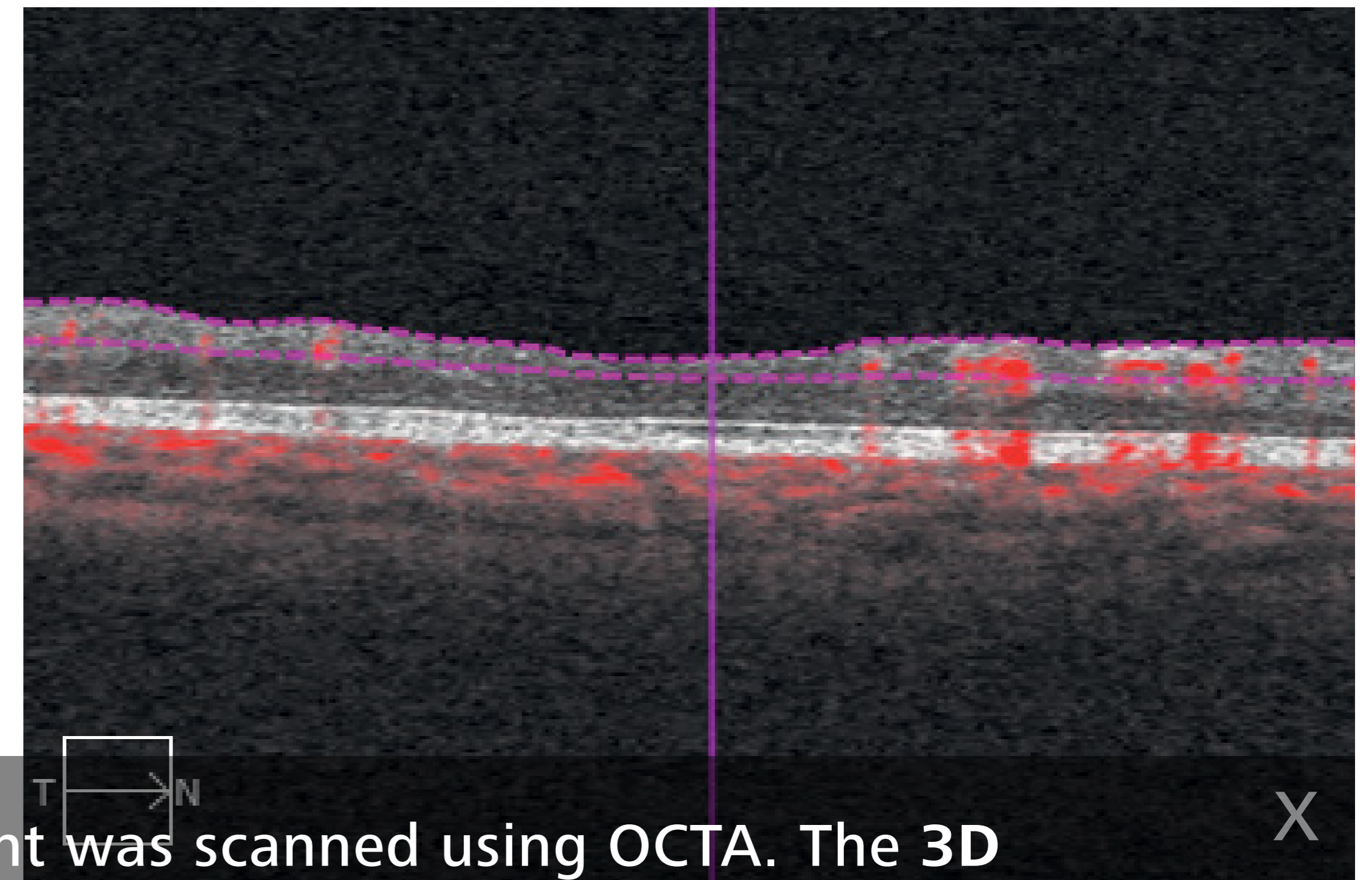
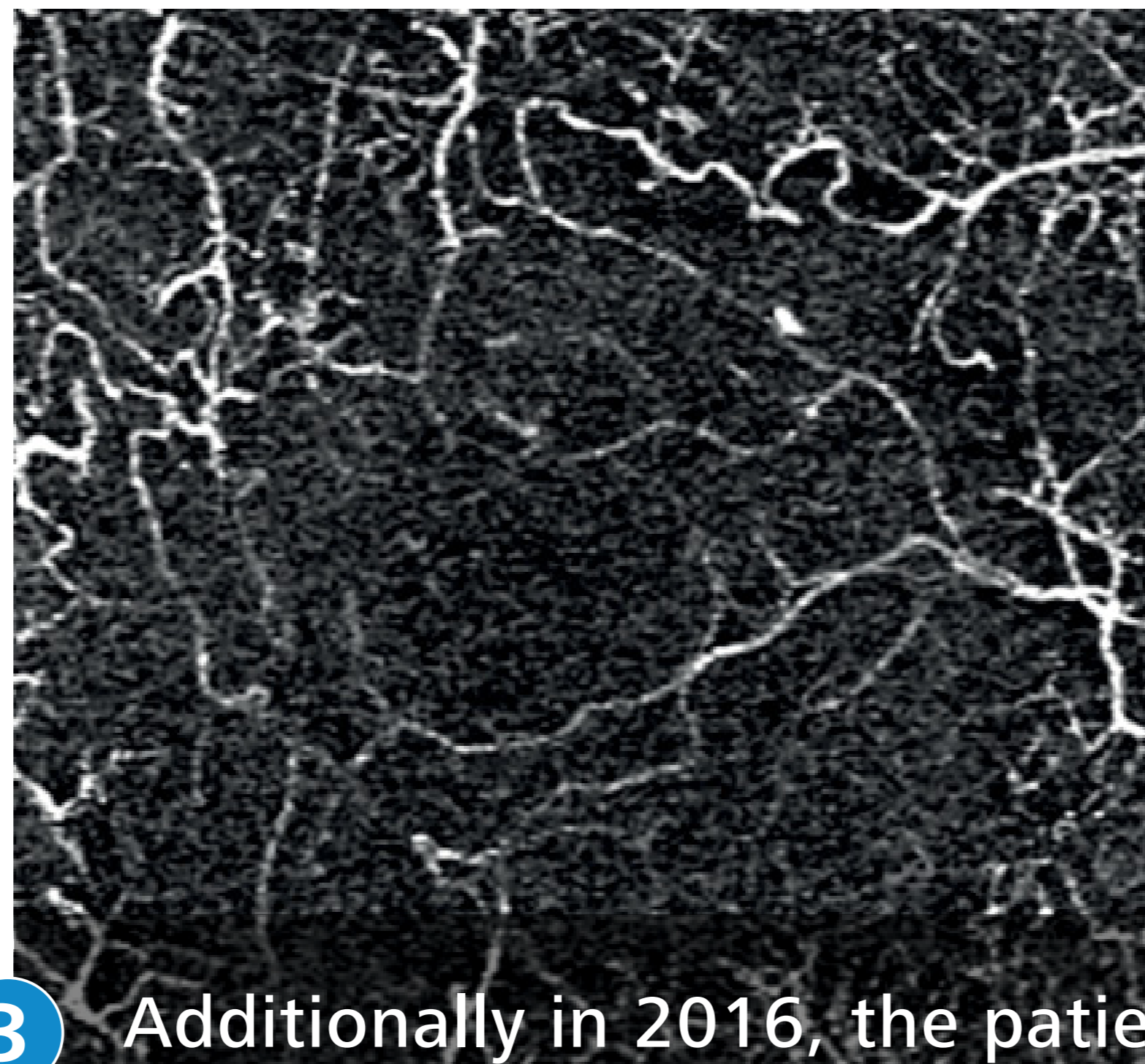
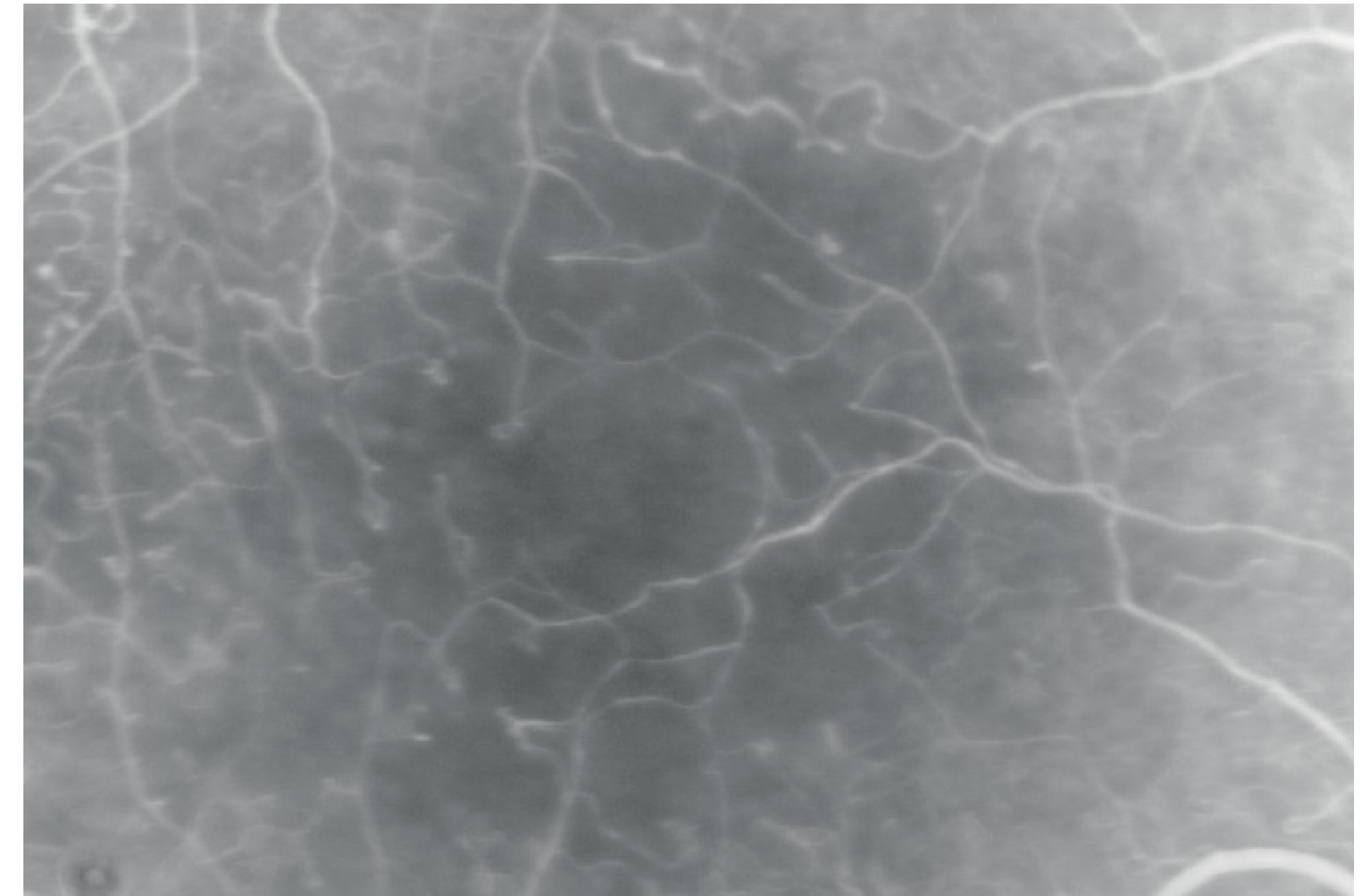
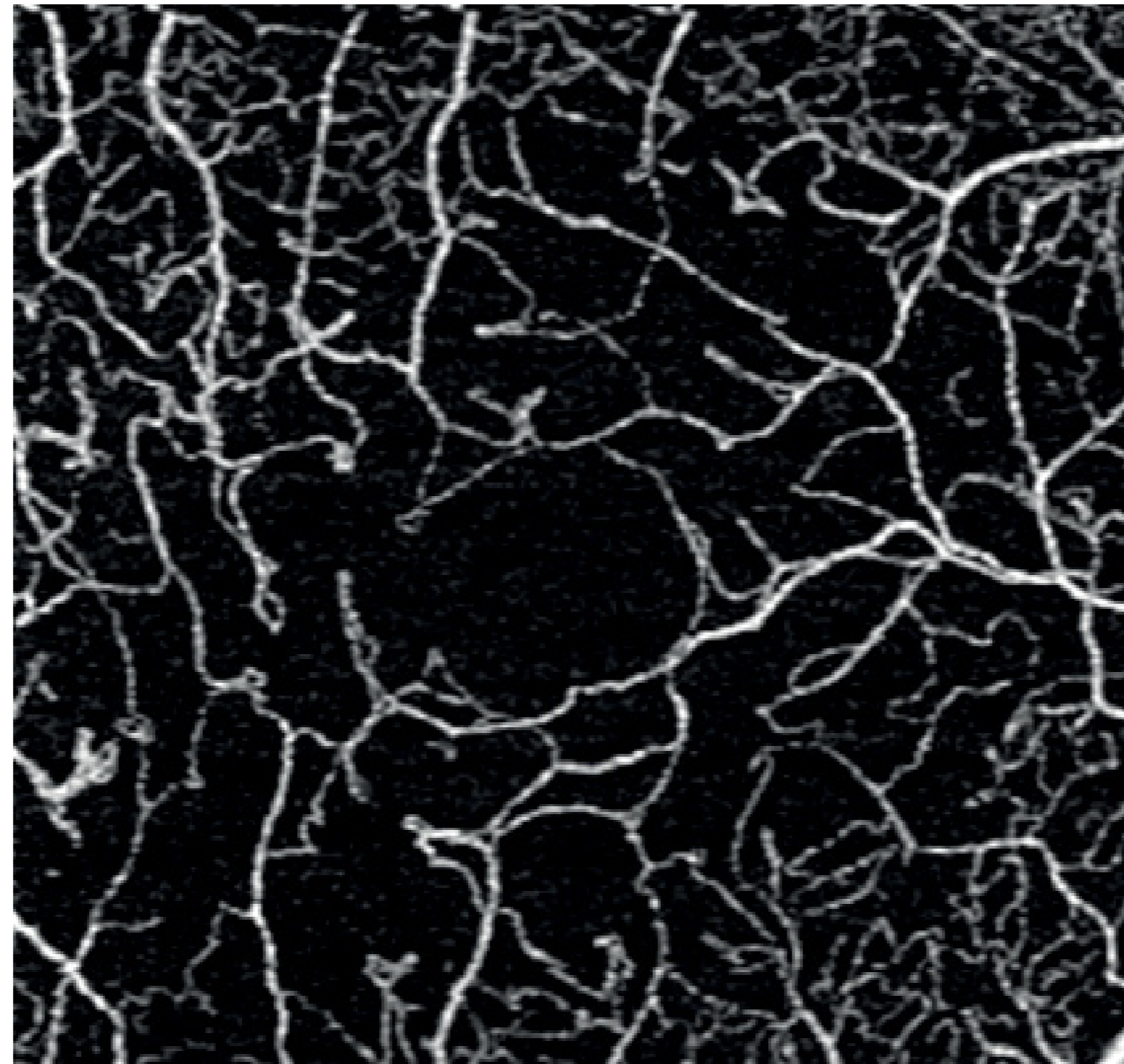


3

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3 Additionally in 2016, the patient was scanned using OCTA. The **3D segmentation capabilities of OCTA** isolate the superficial capillaries, confirming the findings in the FA.

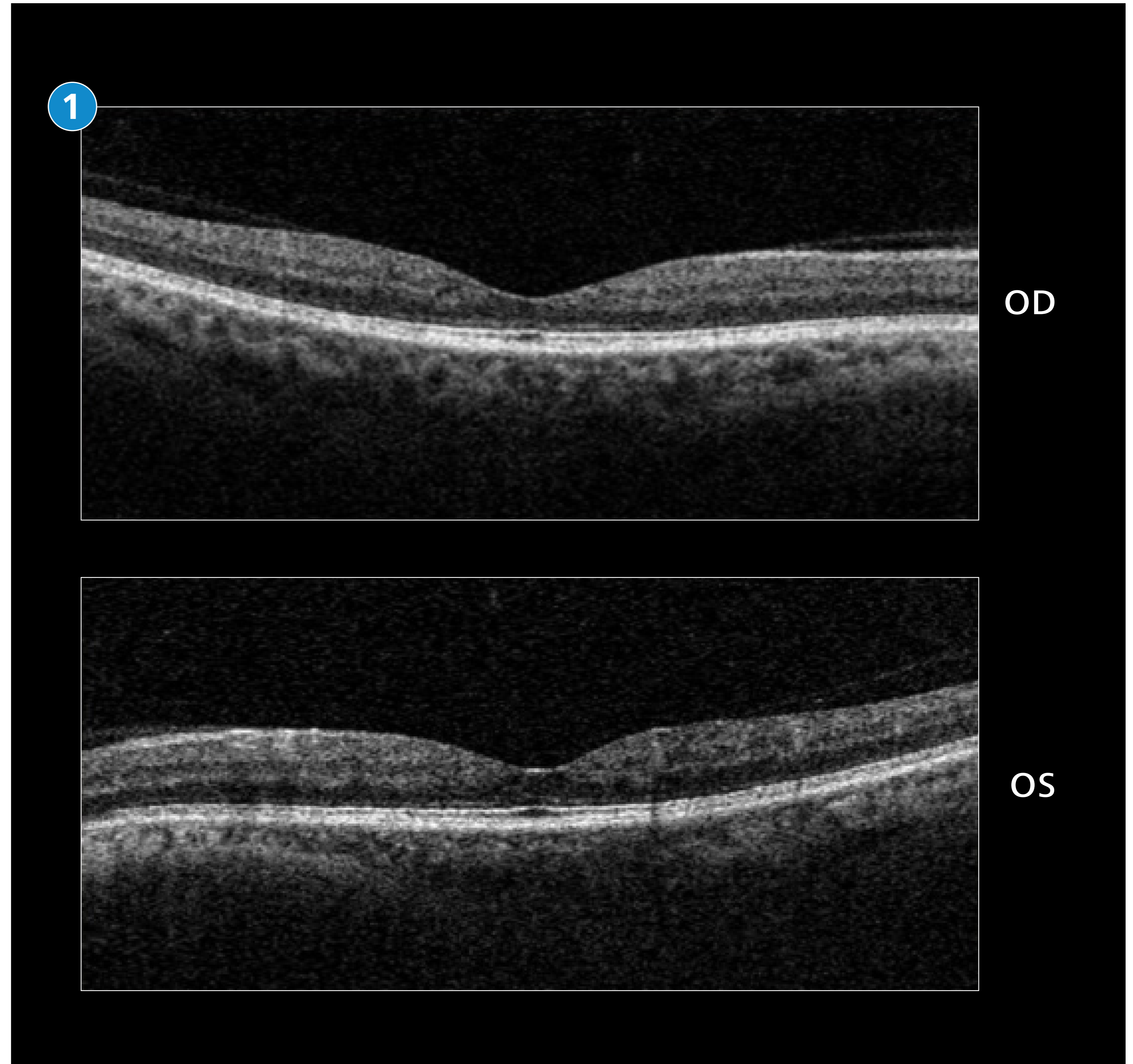
Non-Proliferative Diabetic Retinopathy (NPDR)

Patient History

57-year-old, diabetic male, presented with blurry vision, worse in the right eye.

Physical exam of the patient was unremarkable. There was no refractive error change; best-corrected visual acuity was 20/30 and 20/25 in the right and left eye, respectively. There were no lens changes. Upon dilated fundus exam, mild NPDR was noted in both eyes, with no DME seen.

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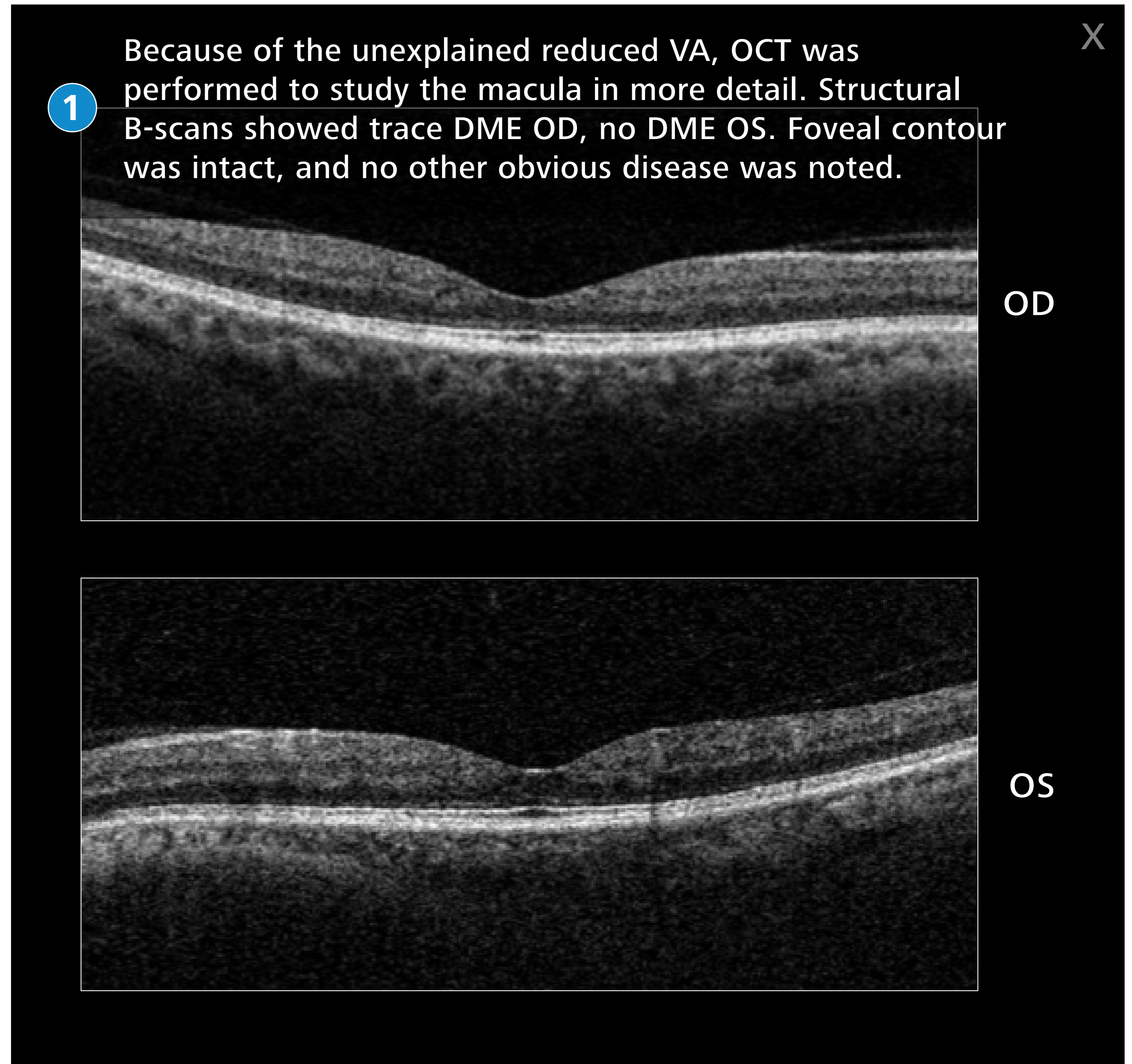
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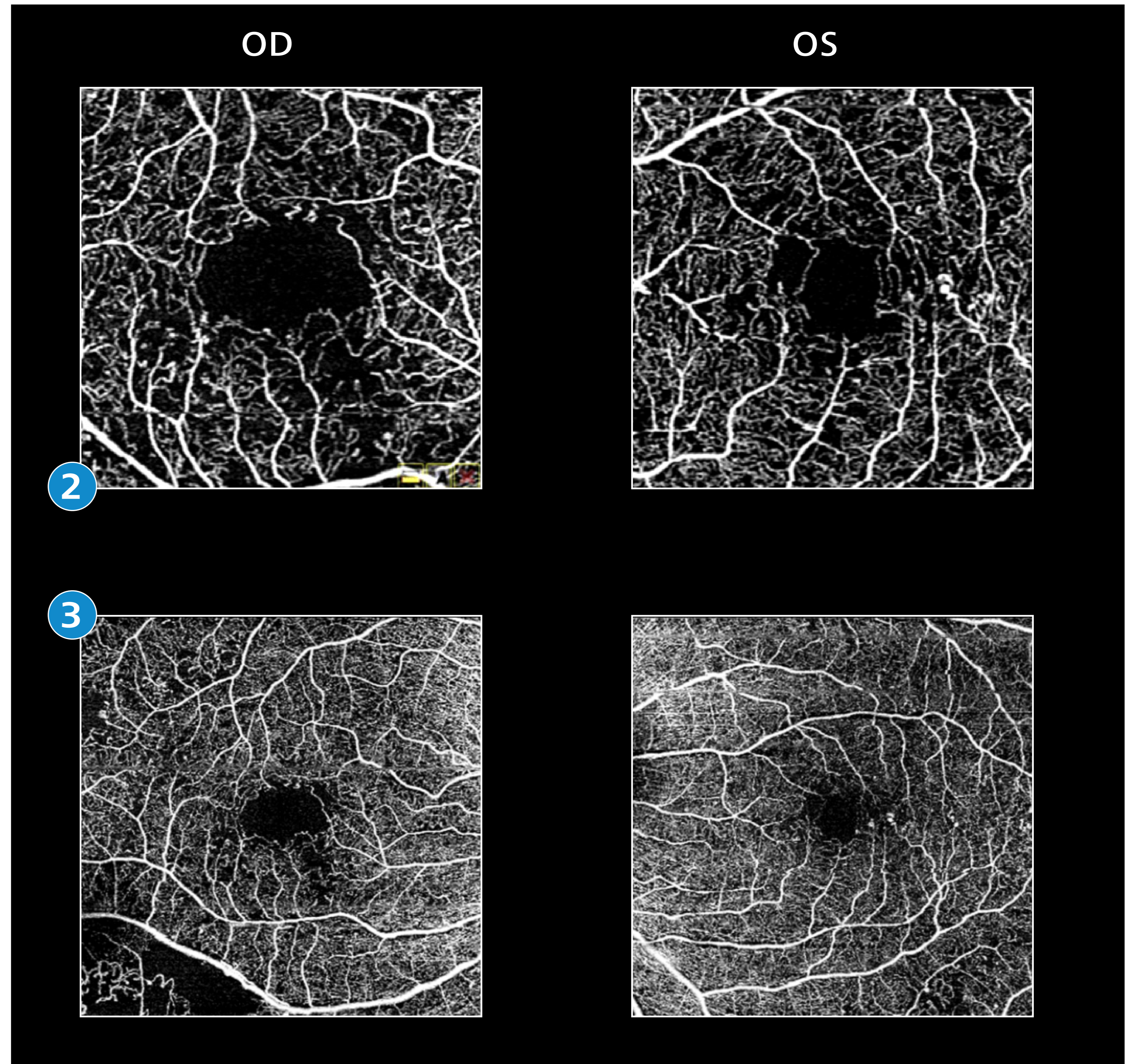
NPDR

Summary

OCTA imaging revealed macular ischemia in both eyes, which explained the reduced visual acuity.

OCTA is quick and non-invasive, providing valuable insight into the health status of the eye and allowing clinicians to evaluate the retinal vasculature when fluorescein angiography may not be indicated. This is especially helpful for diabetic patients, since some studies show that capillary dropout on OCTA may precede visible retinopathy.

In this case, the patient was educated on the need for good compliance with follow ups and treatment to prevent further vision loss.



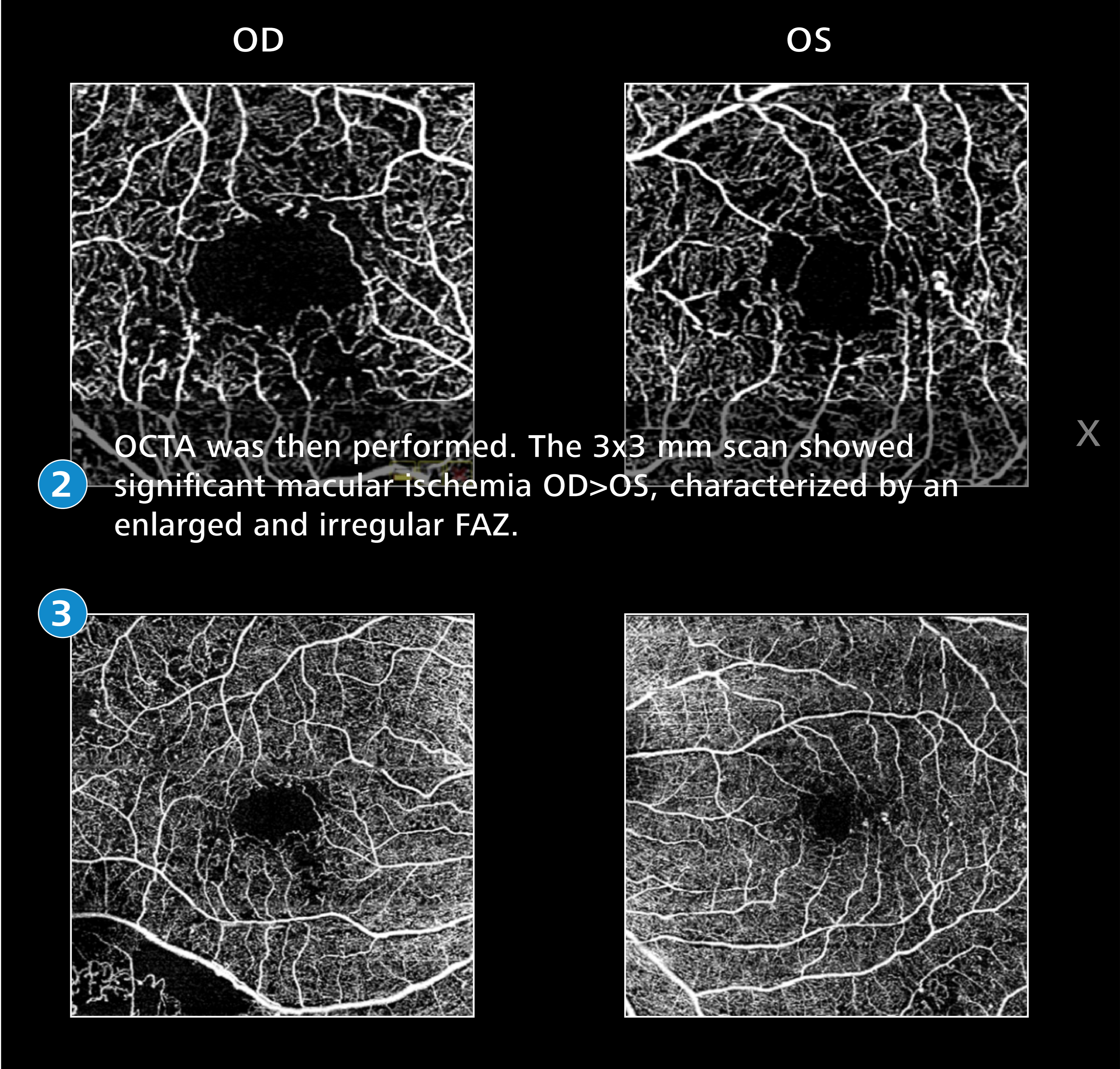
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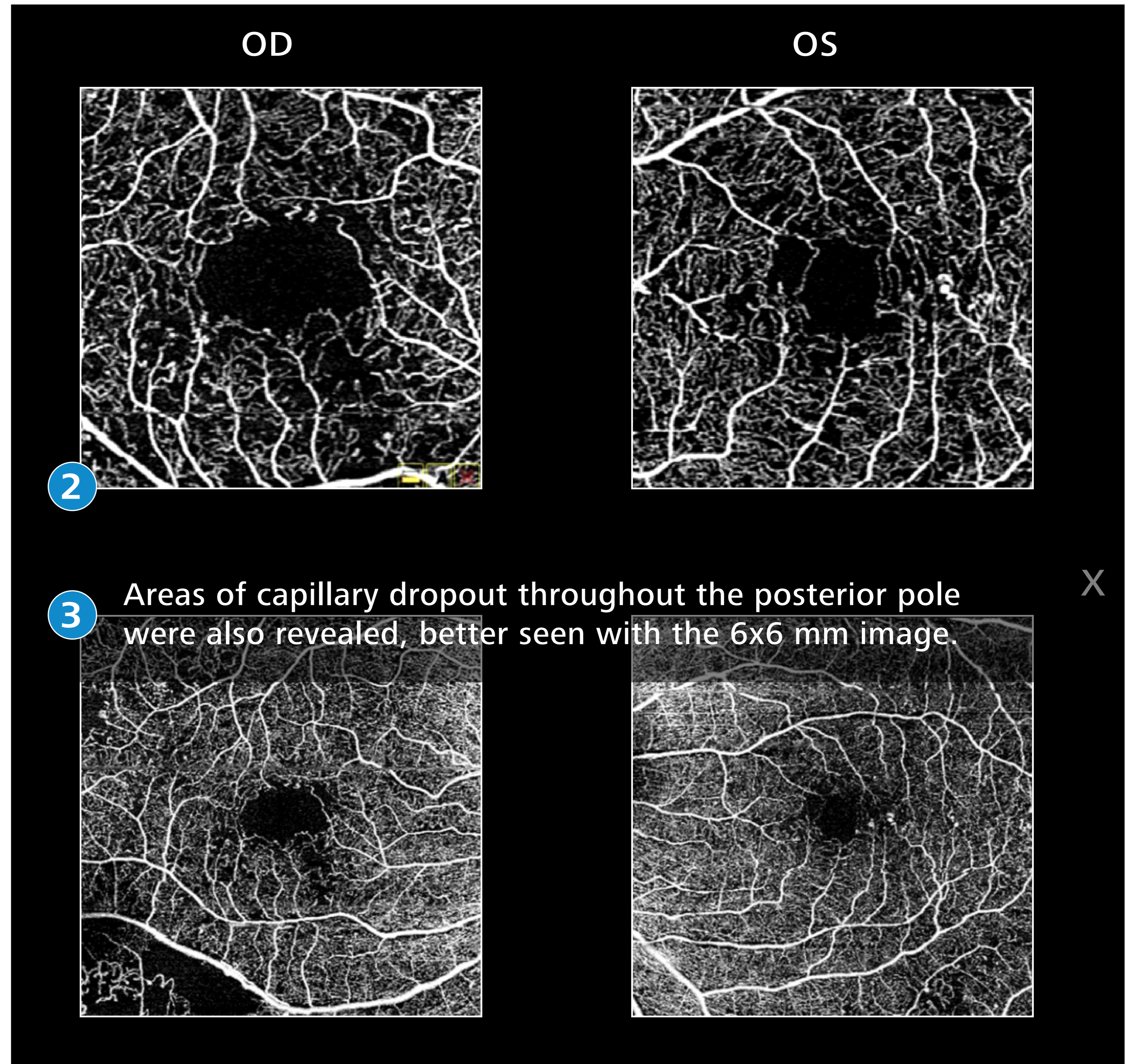
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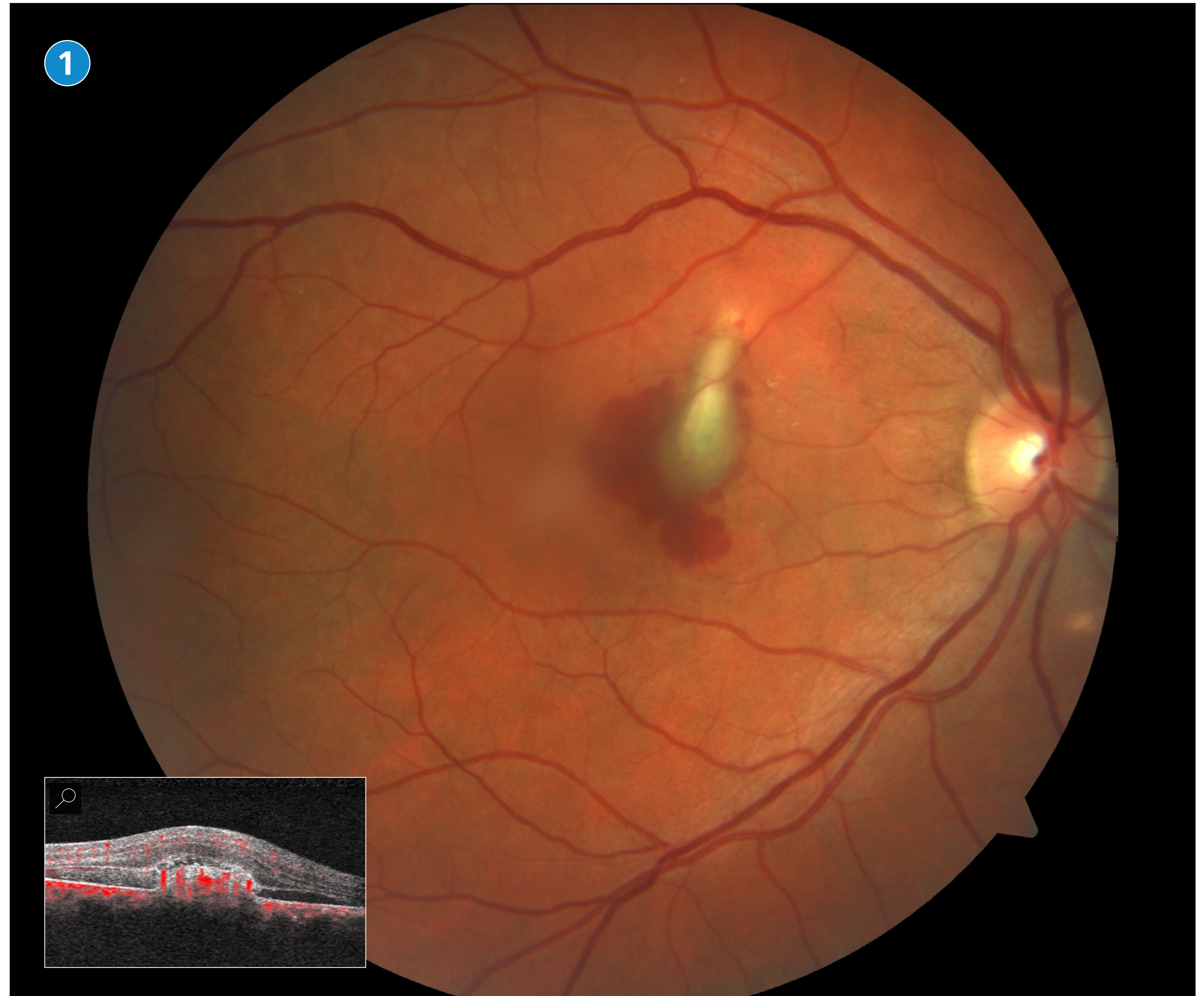


Exudative CNV

Patient History

A 52-year-old white male was referred to the clinic for retinal evaluation. The patient complained of sudden onset of decreased central vision in the right eye for the past 2 days.

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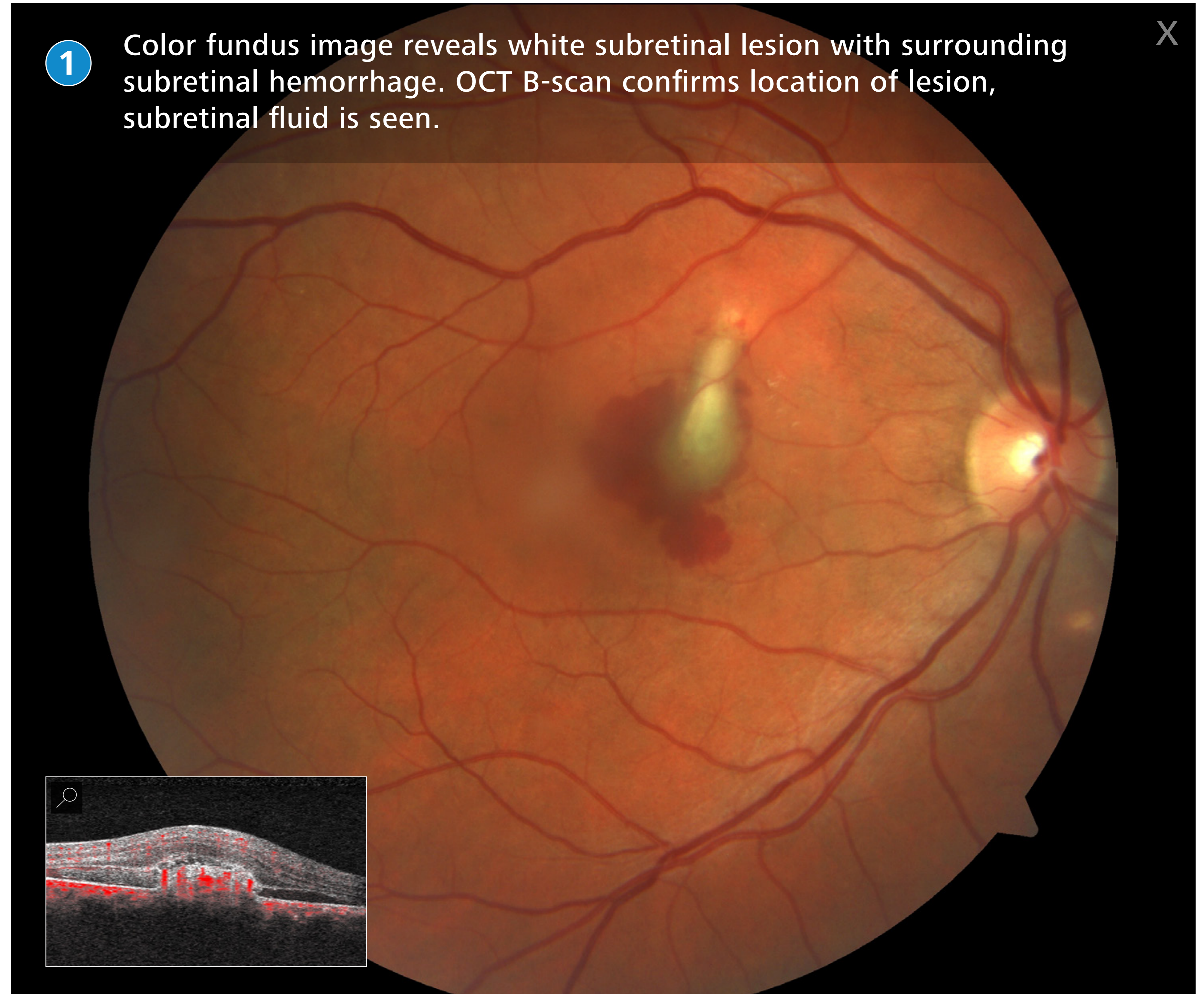


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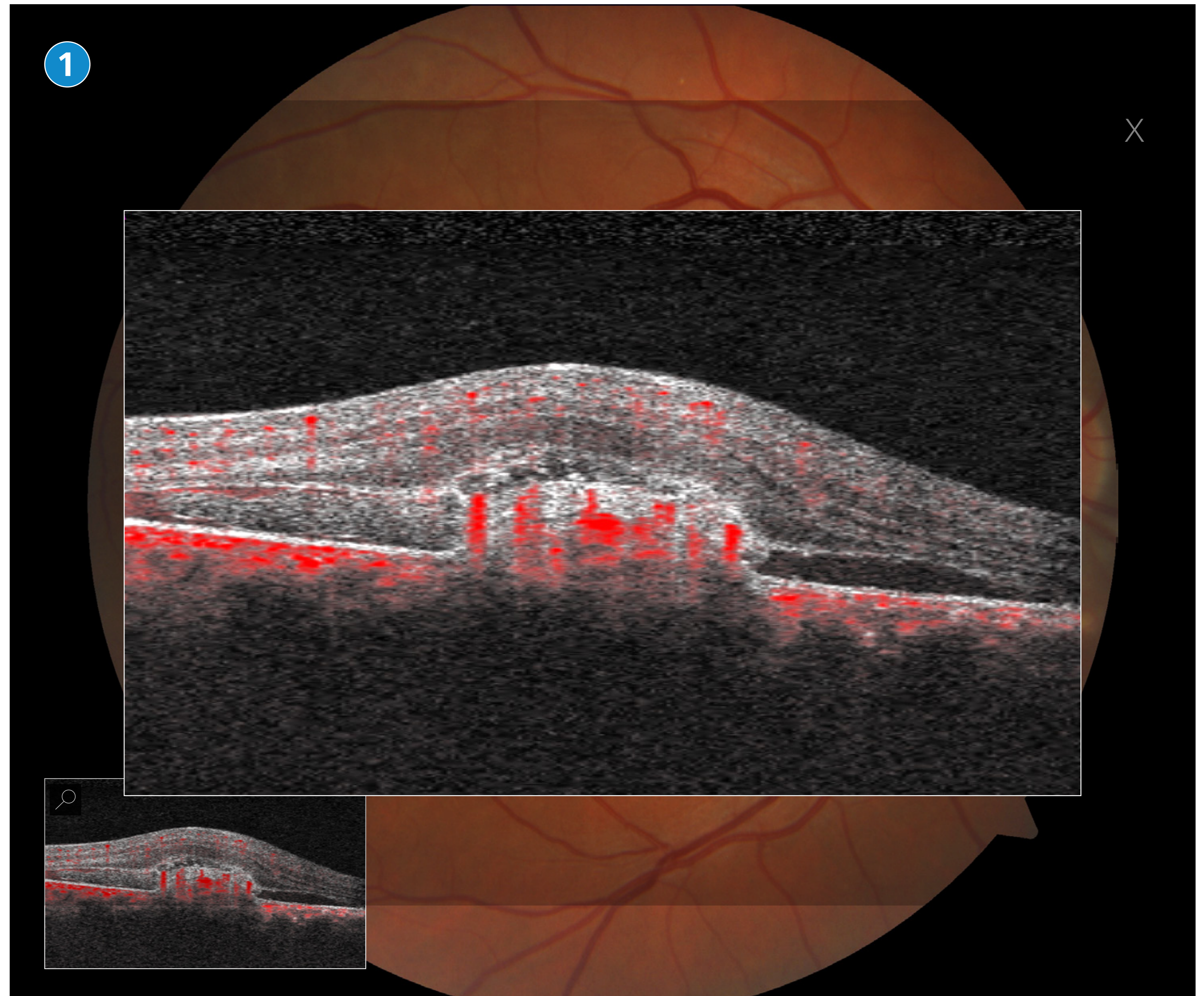


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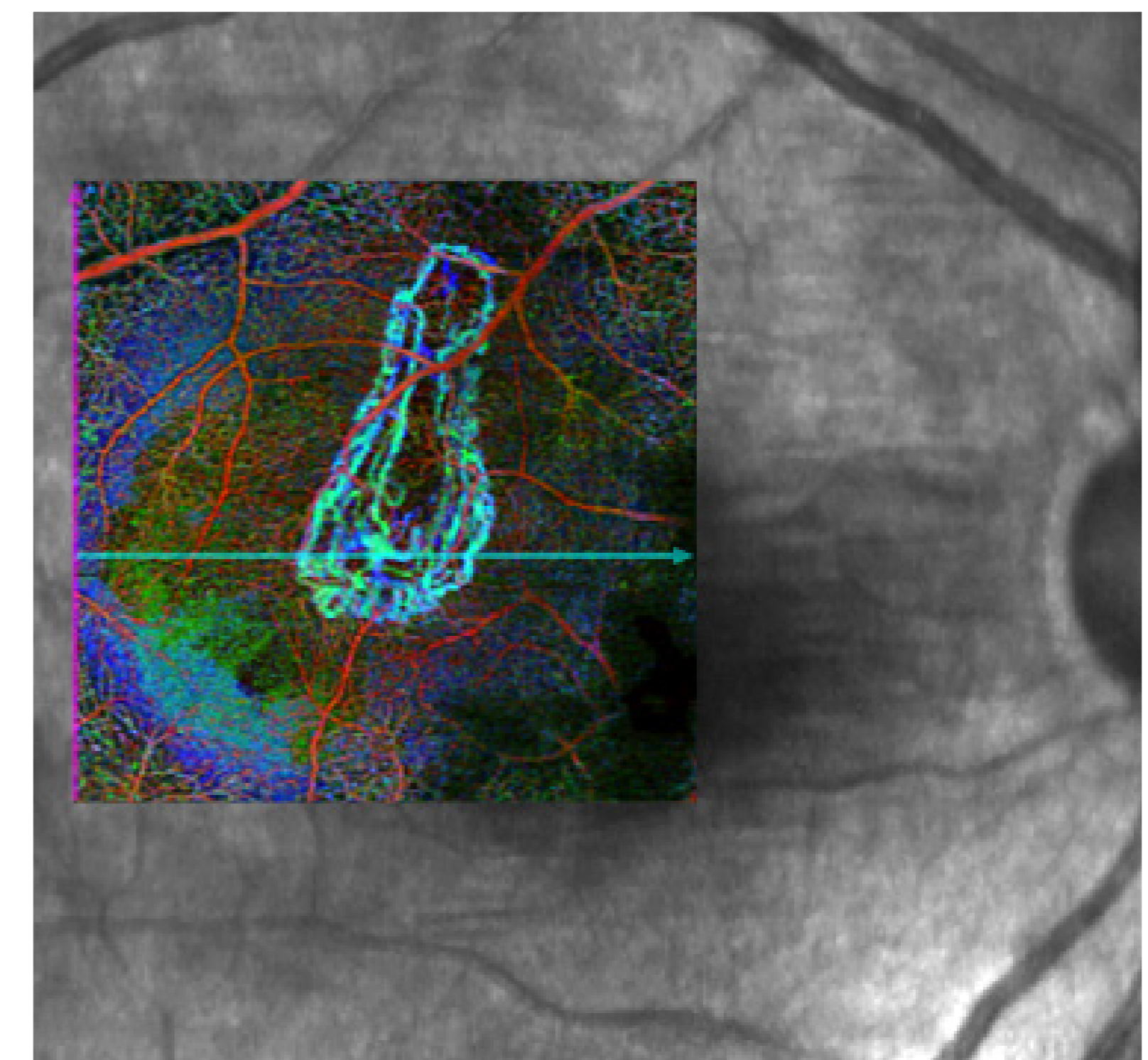
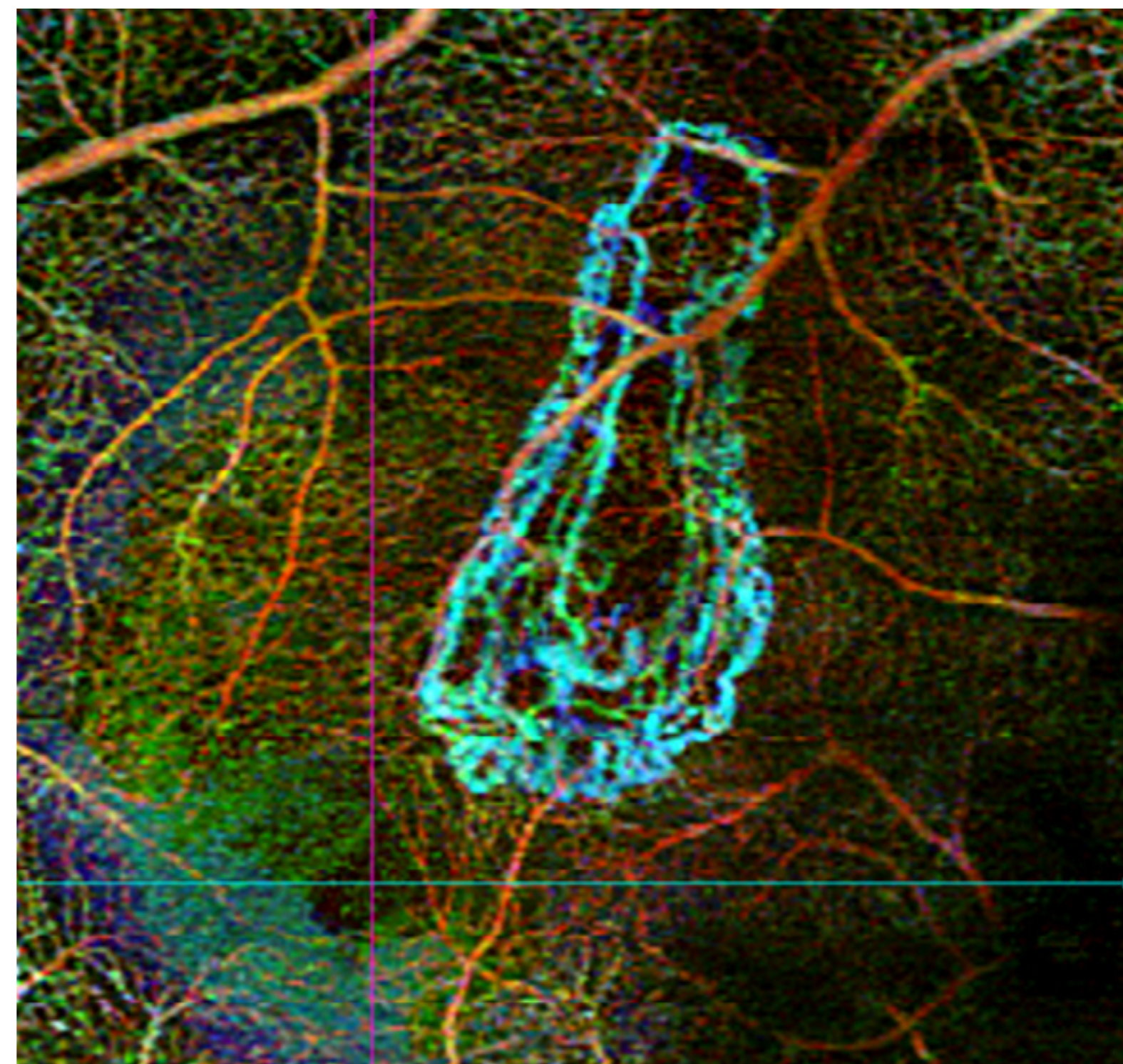
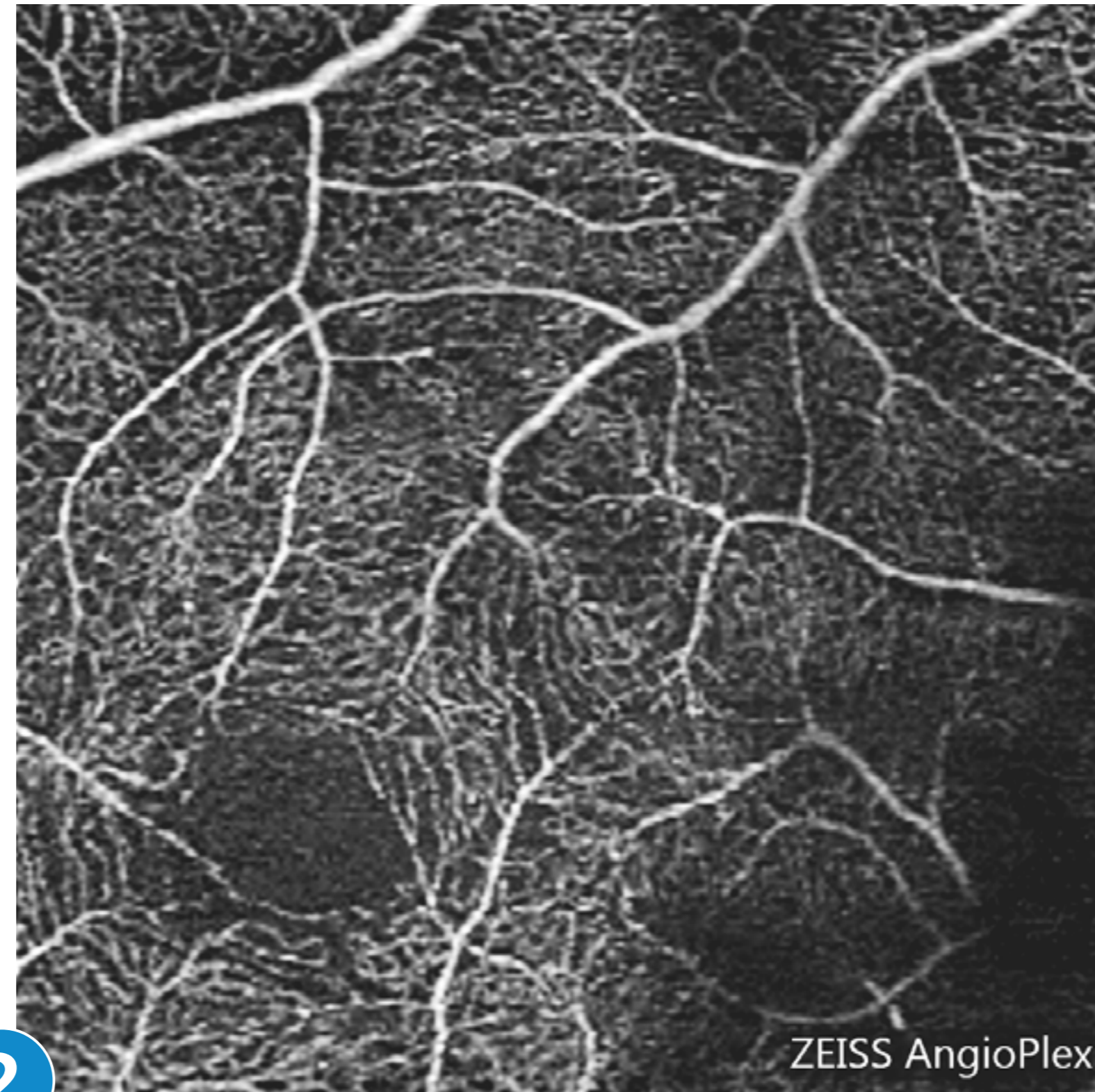
Exudative CNV

Summary

OCTA clearly reveals the CNV lesion in greater detail. In this case, FA may not be needed to make the diagnosis and plan treatment.

As the technology advances, OCTA may complement FA exams for certain diseases.

2



Exudative CNV

Summary

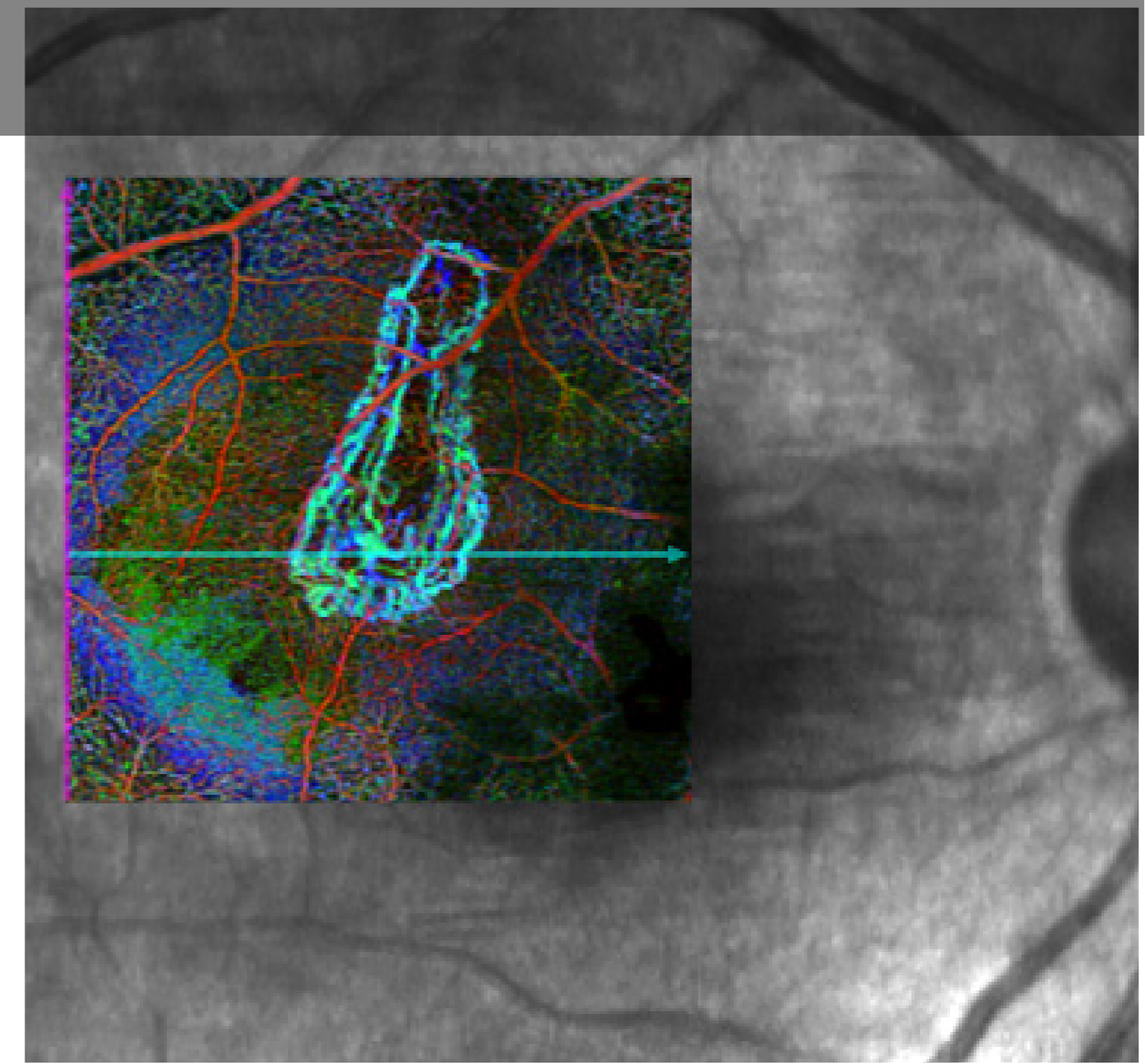
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2

Superficial retinal vasculature on OCTA mostly intact. However, further segmenting the avascular layer of the retina (outer retina) reveals Type 2 CNV.





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