

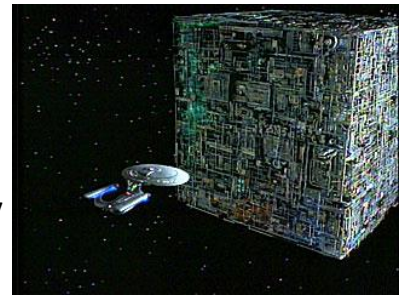
OCT Fundal Angiography Initial Experience

The new era in Medical Retina Imaging
Based on Cirrus 5000 AngioPlex 2016 Model
RCOPhth Presentation 24 May 2016
Nicholas Lee

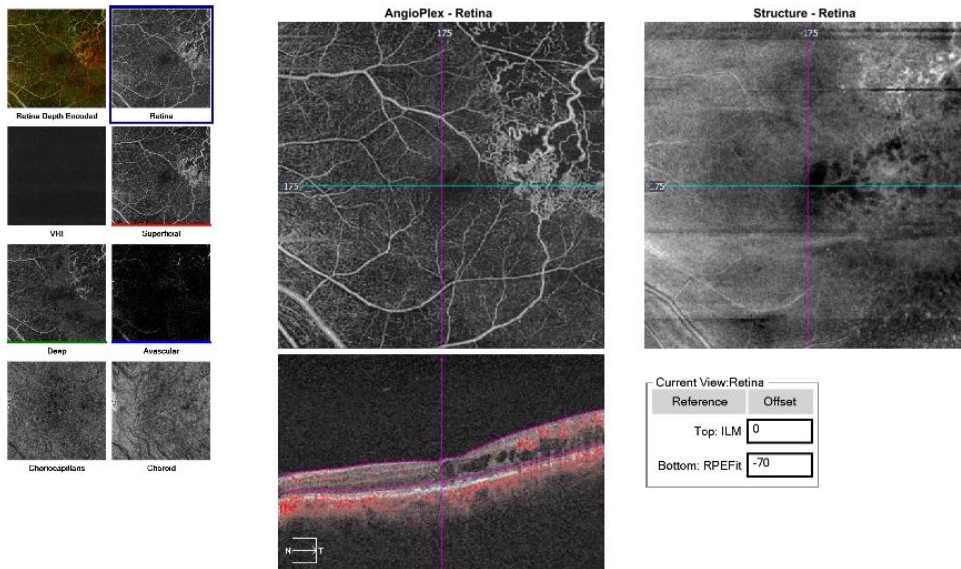
Consultant Ophthalmologist at The Hillingdon Hospital and The Western Eye Hospital in London UK

Features of AngioPlex

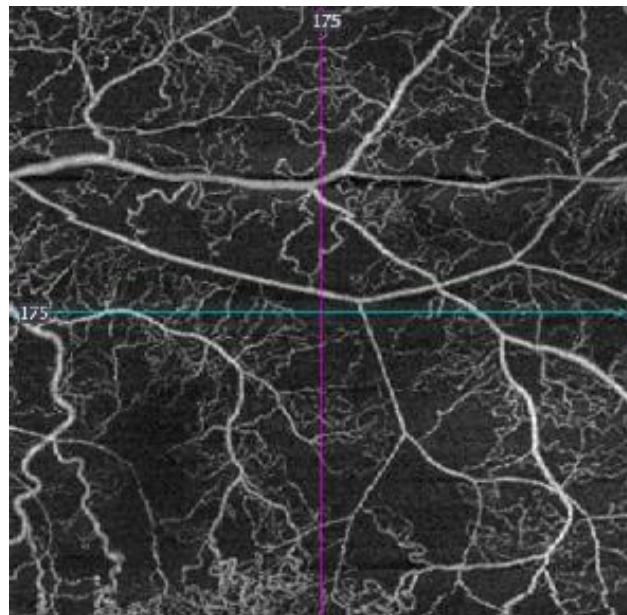
- Termed OCT-A for Optical Coherence Tomography Angiography
- High speed 27,000 to 68,000 Hz
 - 2.6 for 512 image, 1.8 for 200 image and 0.8 for Raster
- 840um for resolution
- 5um and 15um resolution
- 36 x 30 degree view
- >67 Million data cube points for Cube data analysis



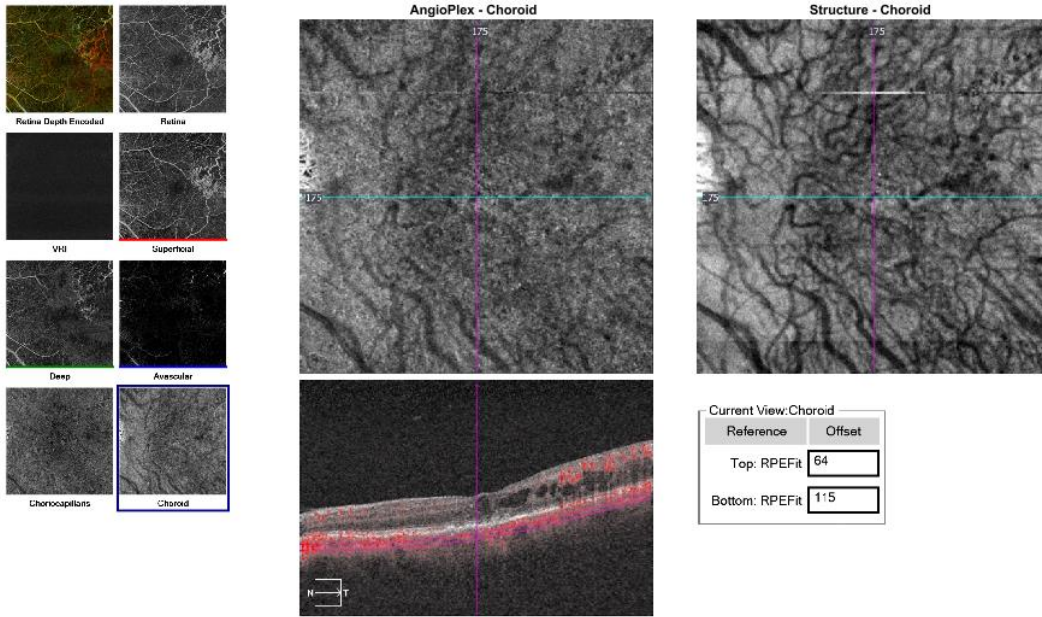
Branch retinal vein occlusion - Collaterals



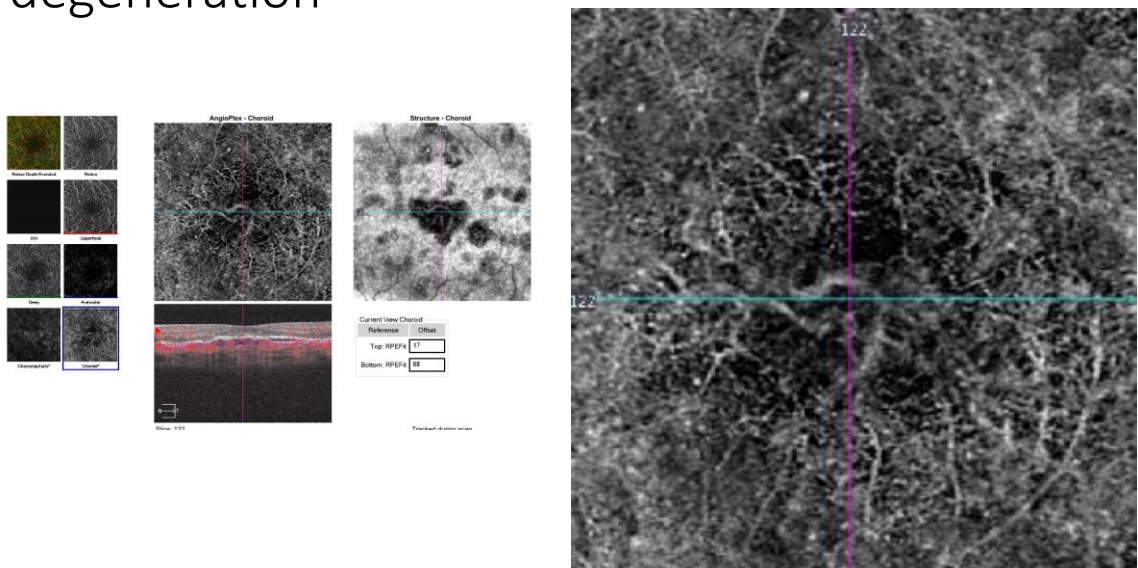
**Detail Better than
Fundus Fluorescein Angiography**



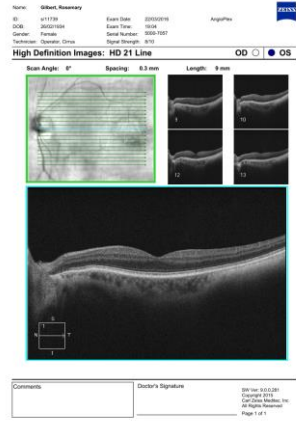
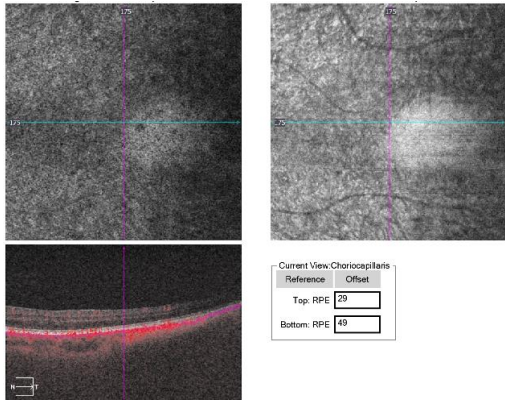
BRVO Choroidal views - Normal



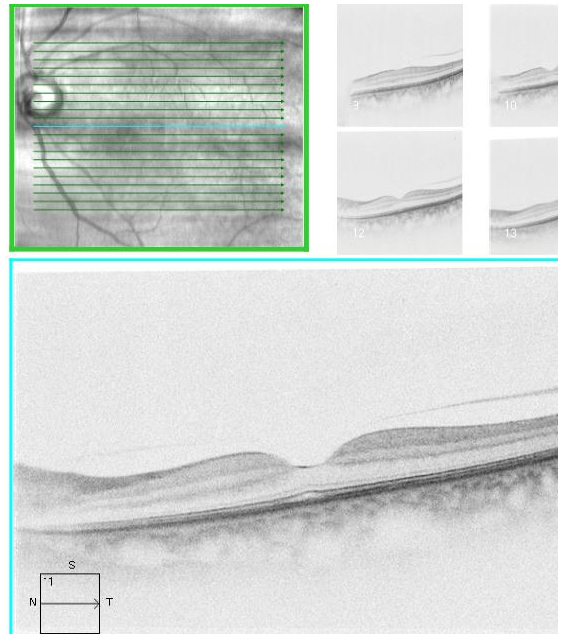
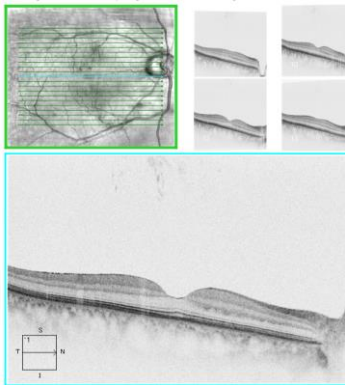
Established Wet age related macular degeneration



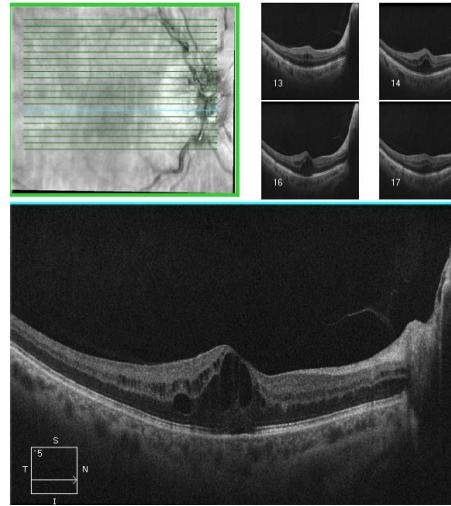
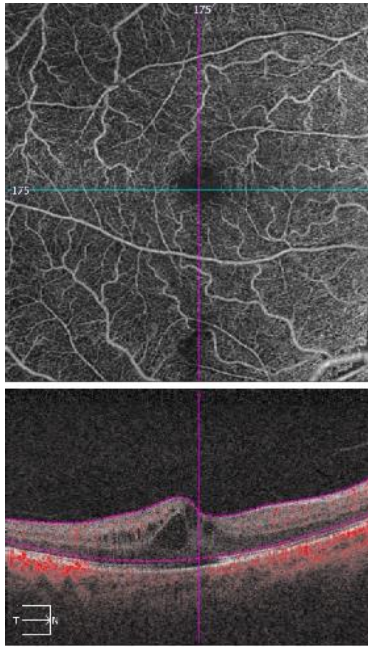
Naevus



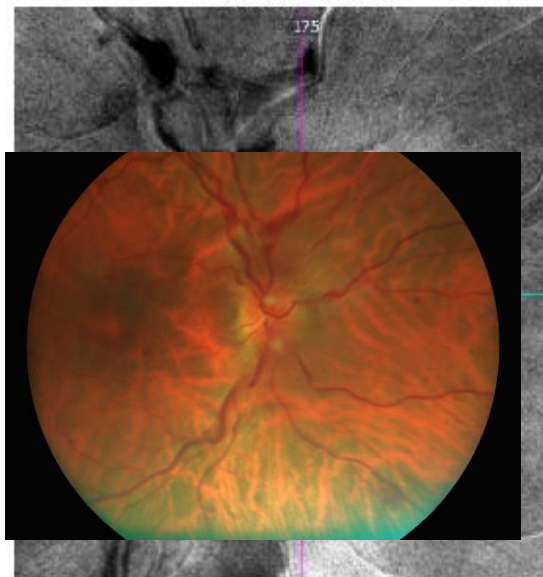
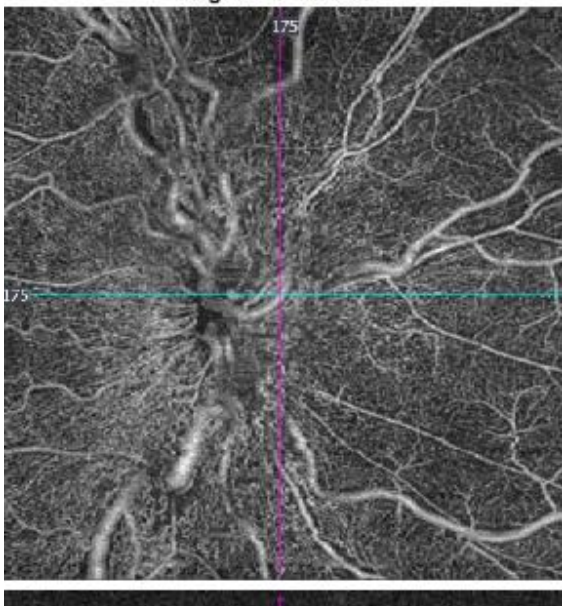
PVD Negative Image helps Visualise Vitreous

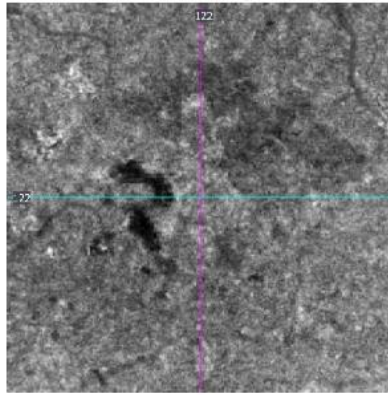
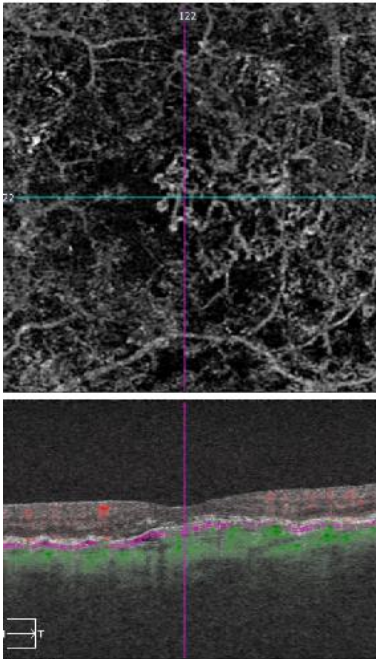


Hypertensive partial Central Retinal Vein Occlusion 55 200/100 – Required Anti-VEGF



CRVO disc swelling





Current View:Choriocapillaris	
Reference	Offset
Top: RPE	<input type="text" value="29"/>
Bottom: RPE	<input type="text" value="49"/>

High quality
Definition of
SRNVM in
AMD

lice: 122

Tracked during scan

Making a Collage

- Capture Multiple images 6x6 or 3x3 or combination
- Use "Irfanview" Free image software to Crop image
- Use Power point to Collage the images
- Use Group function to lock all the images together

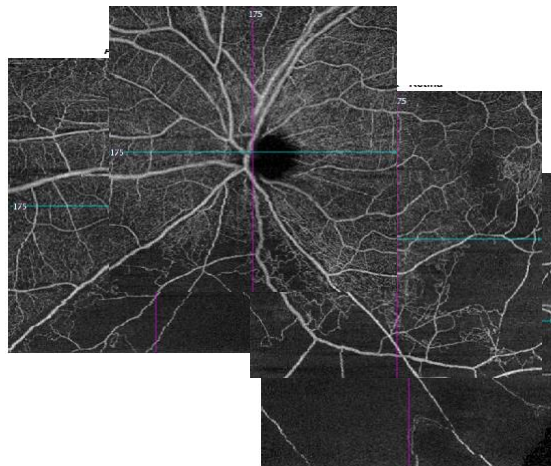


Name: Goodson, David OS
 ID: 411886 Exam Date: 01/04/2016 AngioPlex
 SDOB: 02/08/1938 Exam Time: 18:58
 Gender: Male Slot Number: 0000-1057
 Technician: Operator, CH16 Signal Strength: 8/10

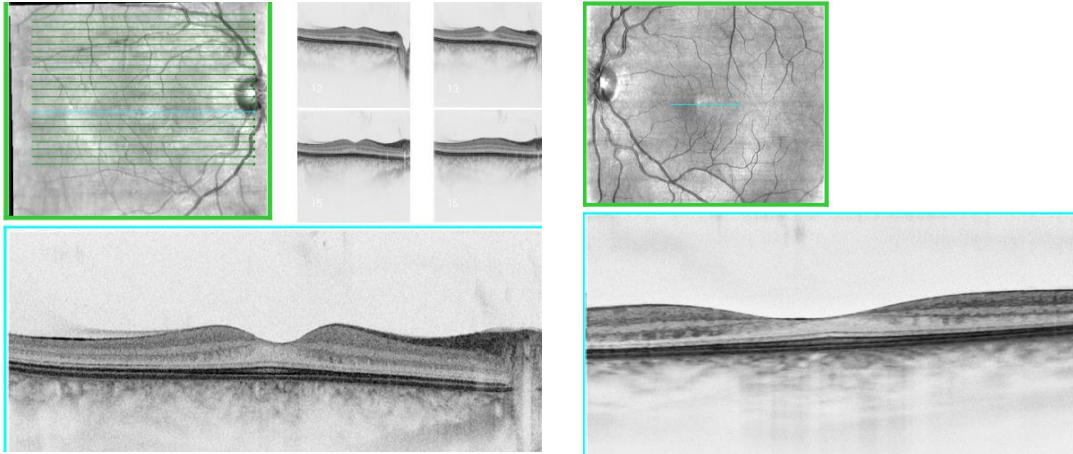
Angiography Analysis : Angiography 6x6 mm

AngioPlex - Retina Structure - Retina
 OD OS

Comments: Doctor's Signature
 IREX View: 6.0.2.281
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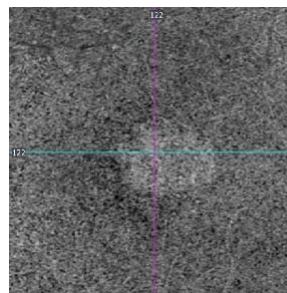
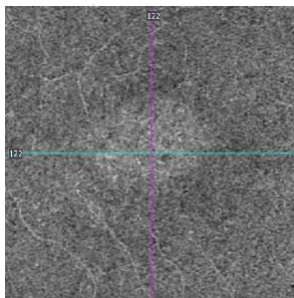


28 year old Stargardt's 6/6 and 6/5

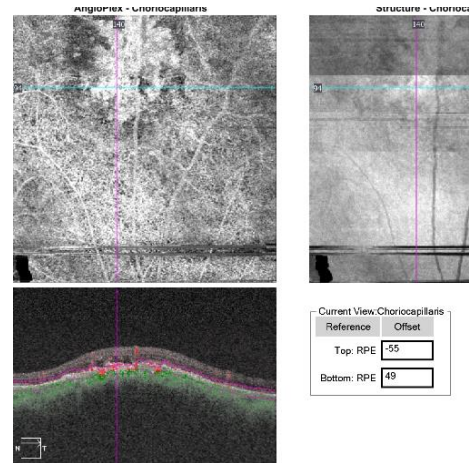
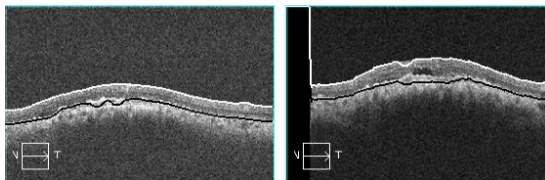


Choroidal Naevus

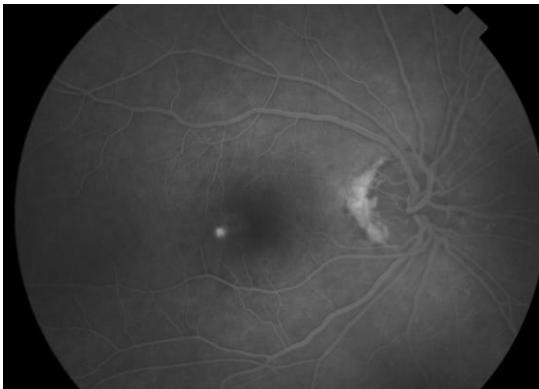
Evaluate if any unusual blood flow which might indicate Malignant change = 1 in 3,800 risk



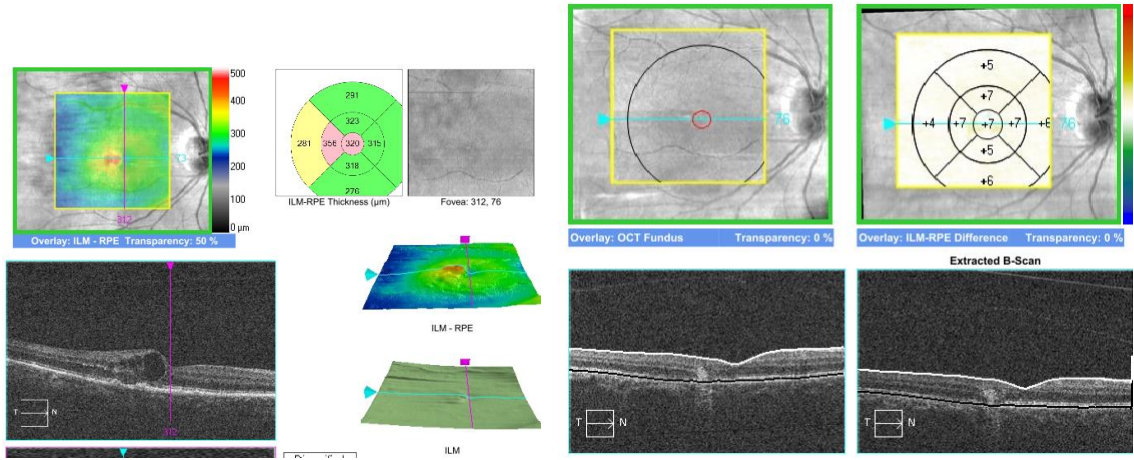
Naevus change to Melanoma
 Change over one year Previously recommended
 observation
 Now see Vascularisation present
 For Plaque
 Changed management



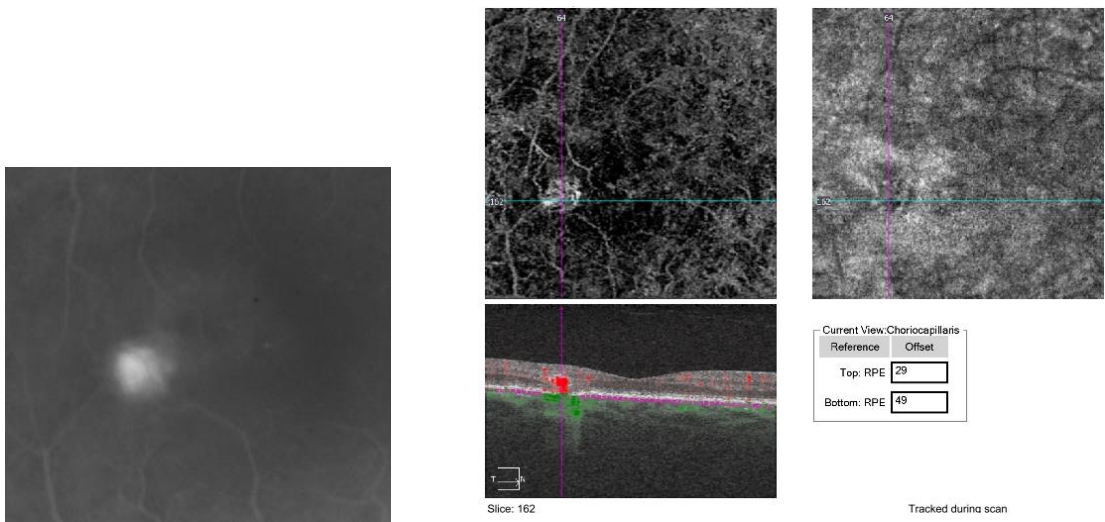
? On presentation is this Wet AMD or something else?



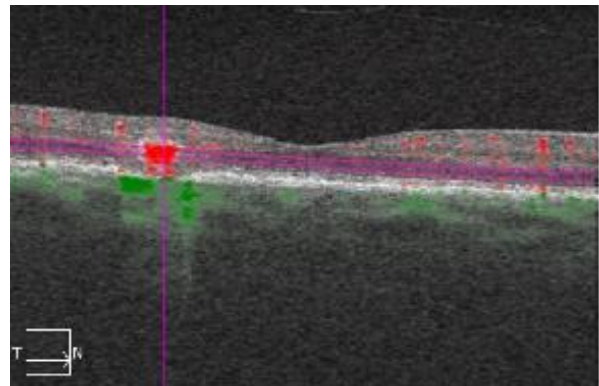
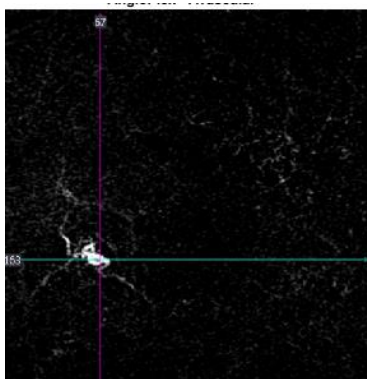
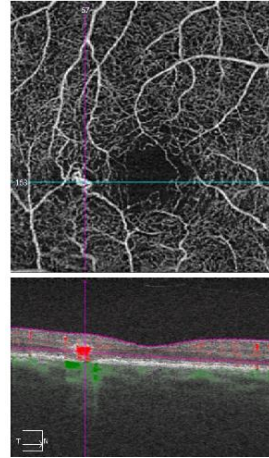
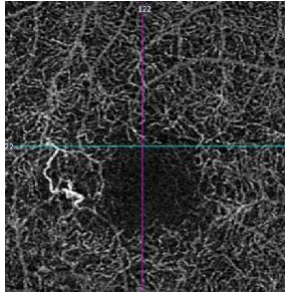
OCT image of Patient



OCT-A shows this is Retinal to Choroidal Anastomosis - RAP

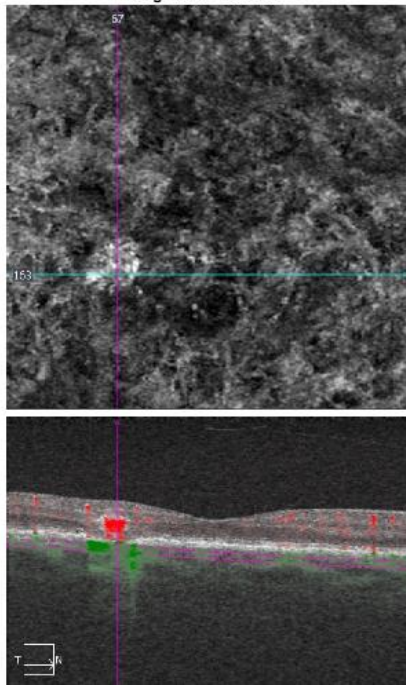


Move cursor to look at blood flow



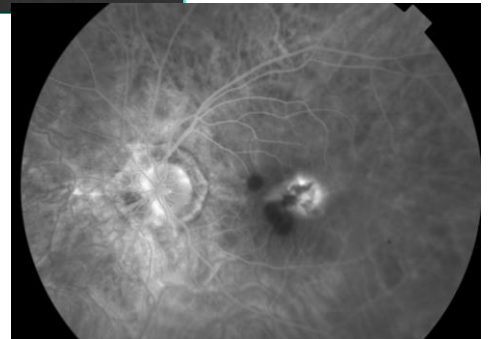
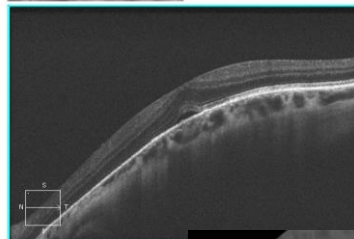
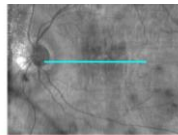
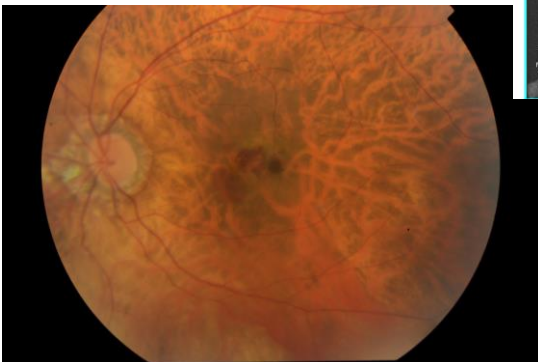
RAP lesion

- Doppler Blood Flow
- Red is Retinal
- Green Is choroidal
- Can place cursors on the lesion to identify on OCT the location of the blood flow

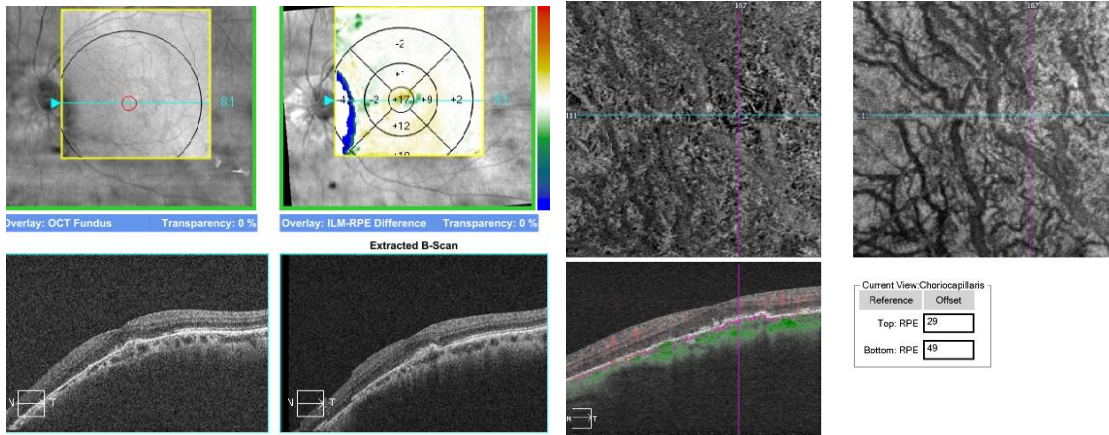


Myopic degeneration

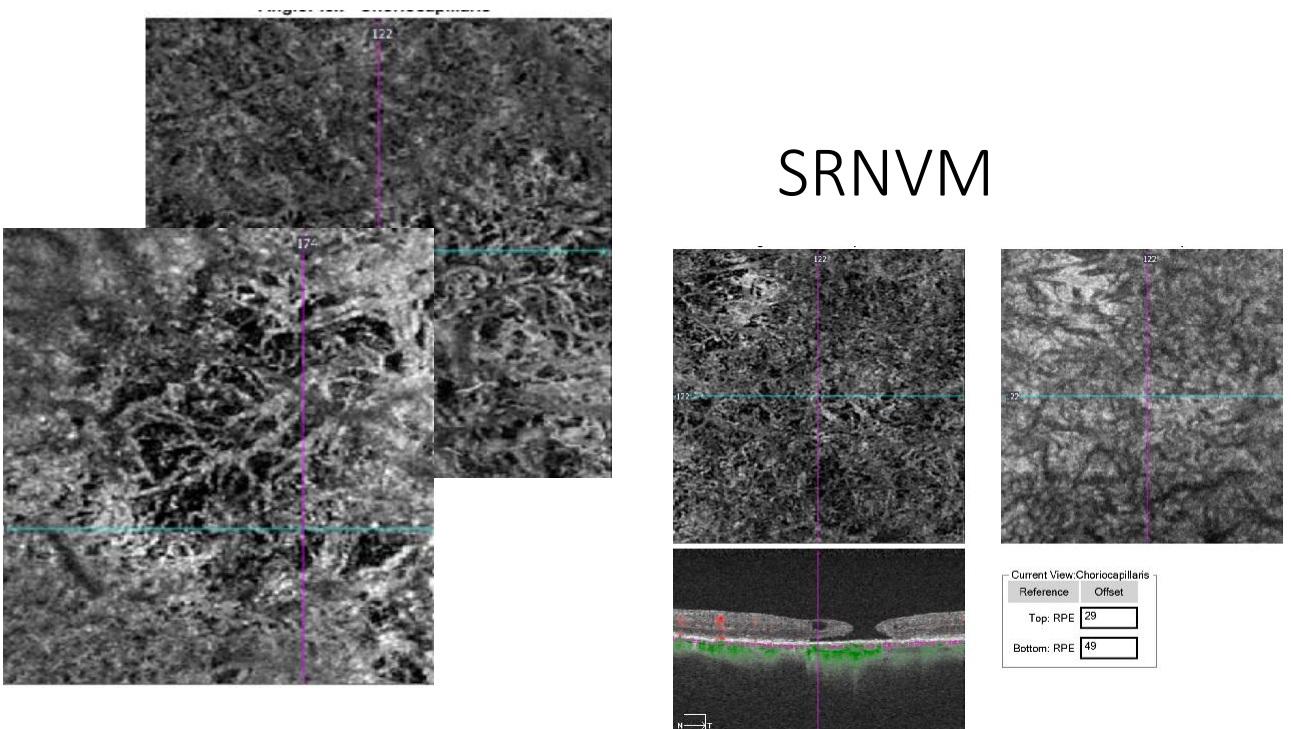
s10627



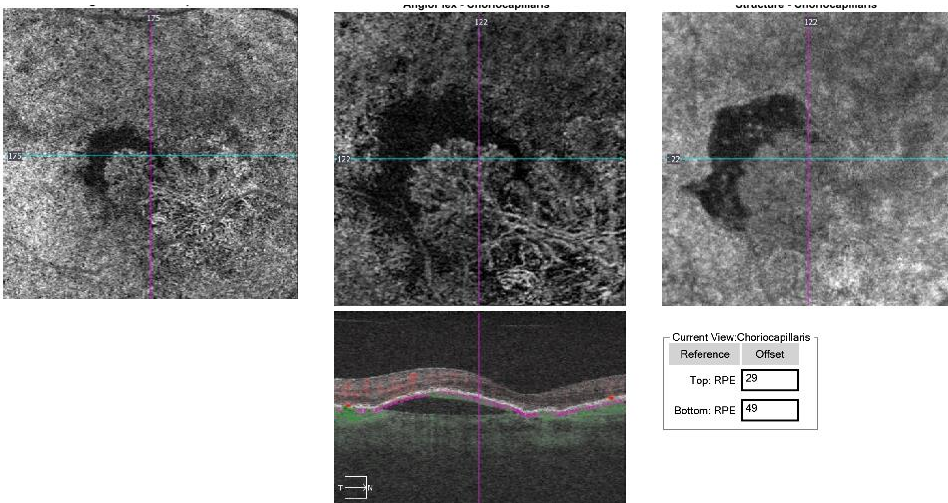
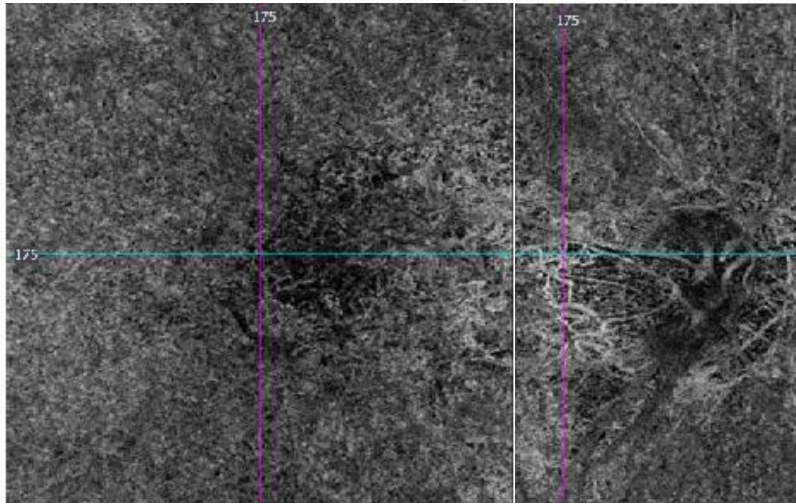
Myopic degeneration



SRNVN



SRVM
Spreading
from
the disc
to
the macular



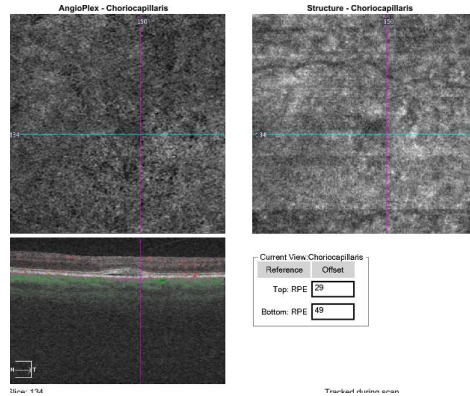
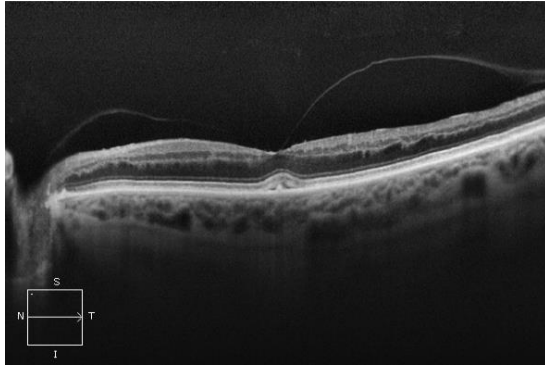
Classical SRNVM that has been treated and a new recurrence has fanned out from the edge of the old lesion

These originate from one central vessel growth and spread like petals of a flower

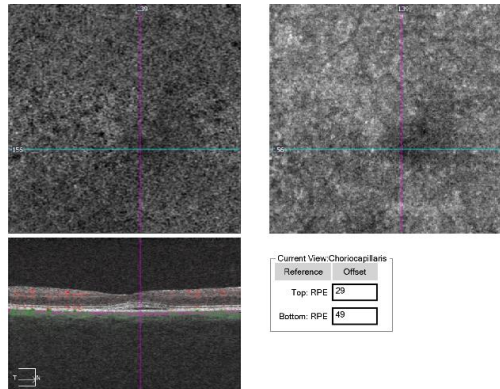
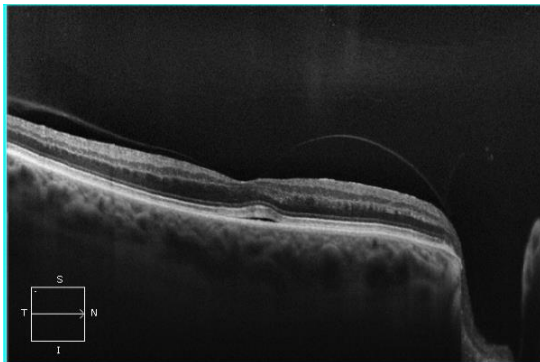
Vitreo macular traction and CSR like formation Shows though the Pigment elevation is not WET age related macular degeneration formation

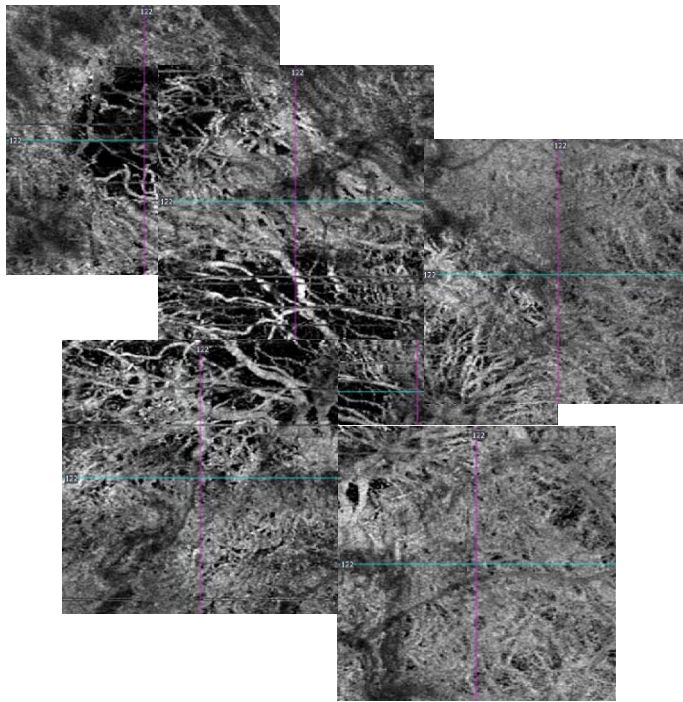
0.36

New symptoms



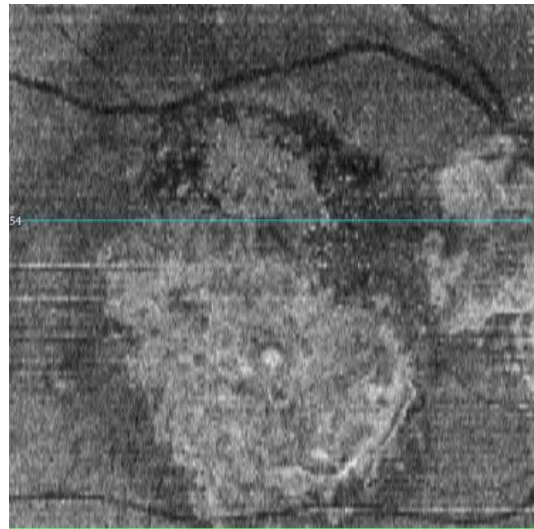
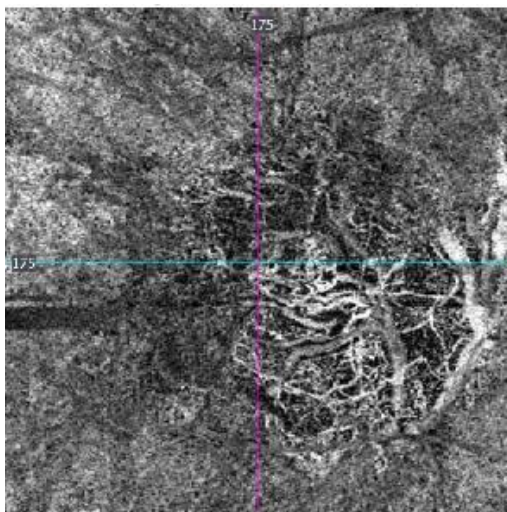
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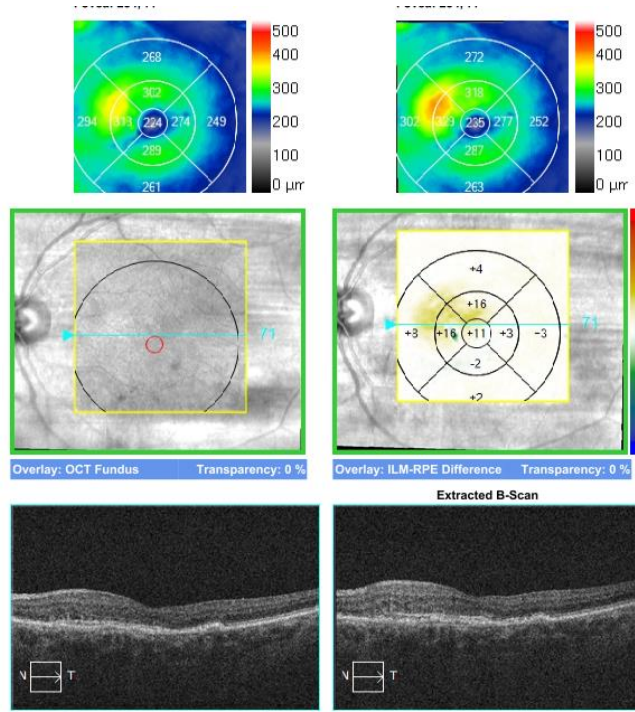
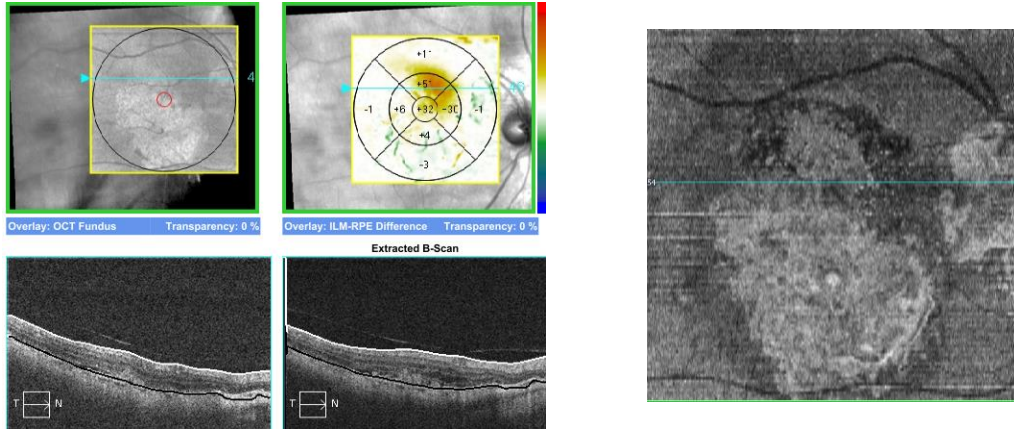
AngioPlex

& Enface Analysis on
Macular Cubes

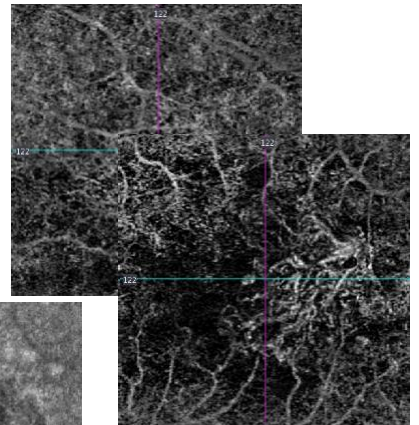
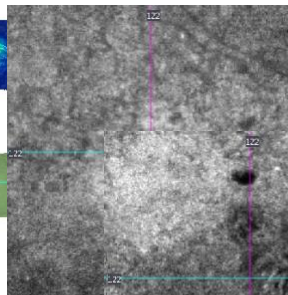
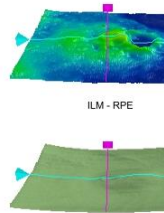
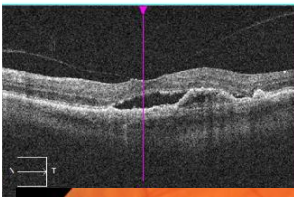
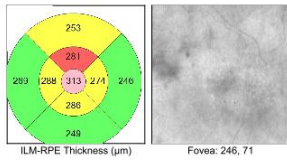
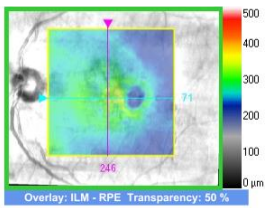
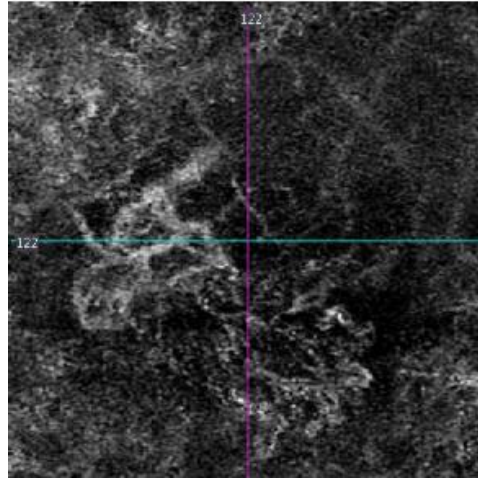
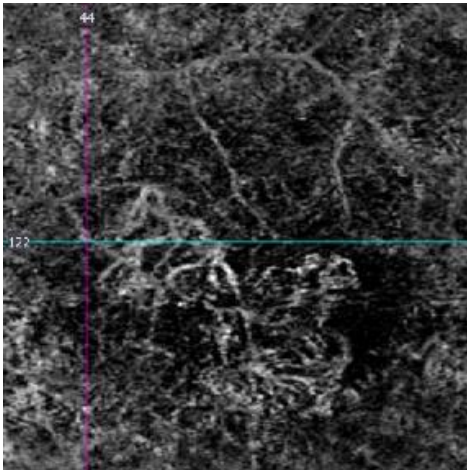


Macular cube vs Enface image

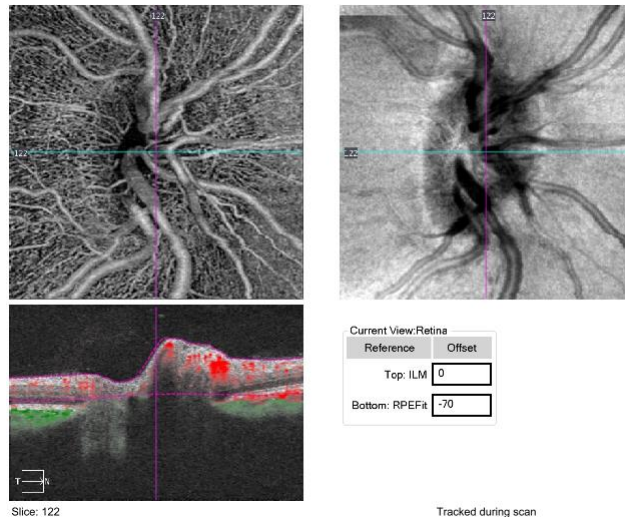
Enface may be done on Older Macular Scans



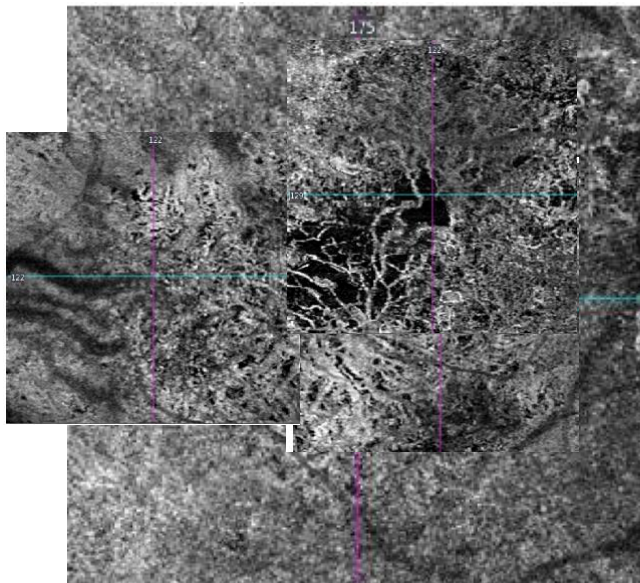
One Month apart – Dilation of the blood vessels Possibility to monitor change/growth

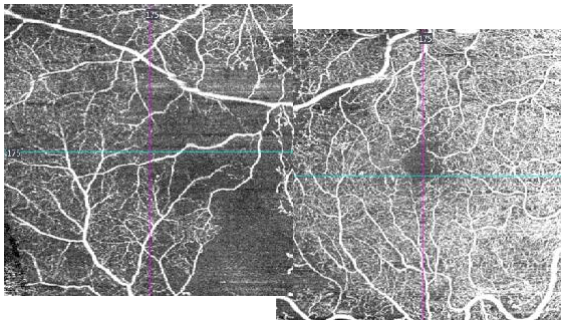
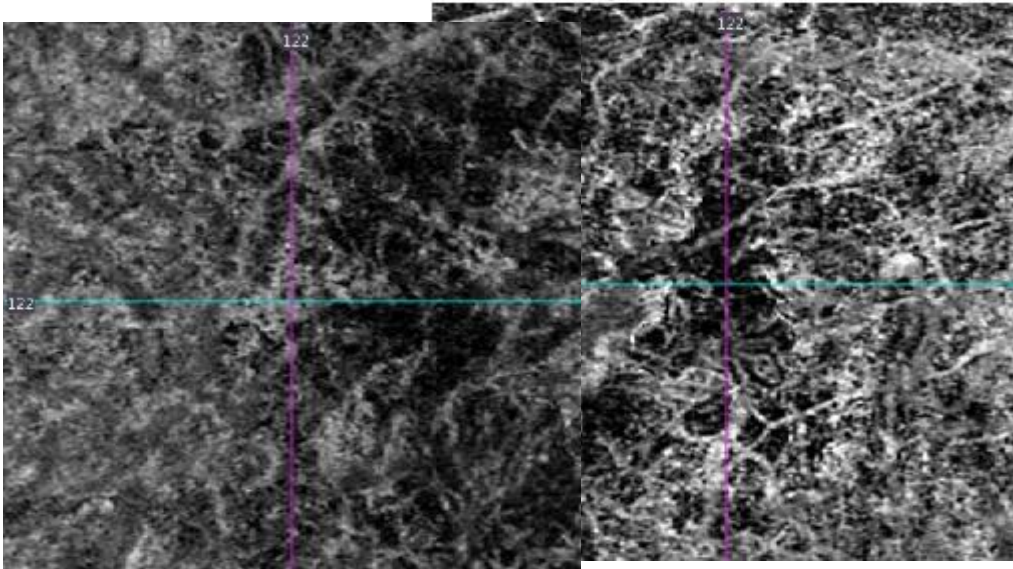


Naevus with wet age related macular degeneration off edge

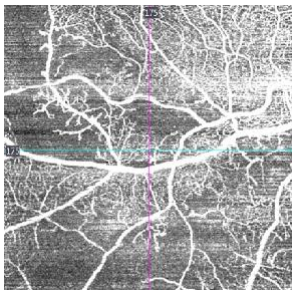


Overlay 3x3 on to 6x6 to enhance the detail

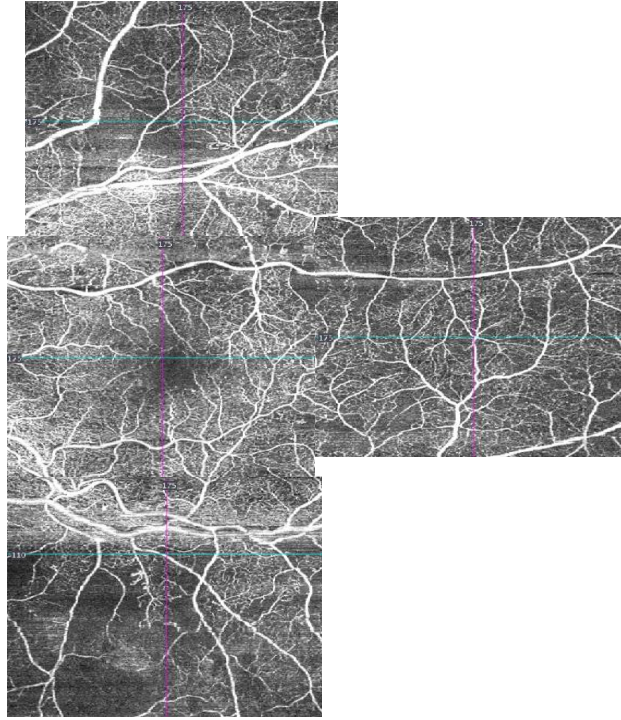




Diabetic Collage
Shows ischaemia very well
New vessels seen on VRI image as
highlighted black areas



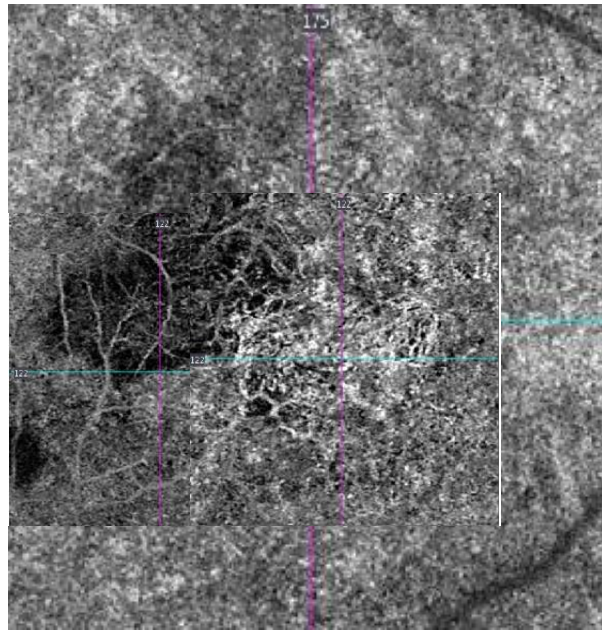
Diabetic Collage



43 LUCENTIS (ranibizumab) to the Left eye,
Since 2011

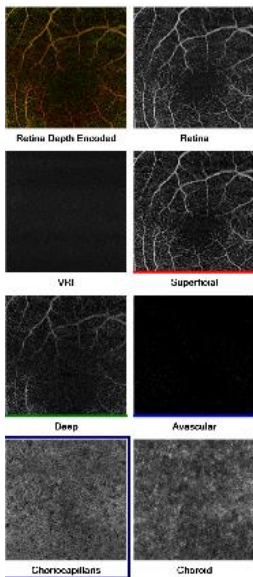
OCT-A shows good definition
 This is 6x6 with inserted/overlayed
 3x3 images

3x3 give high definition than 6x6

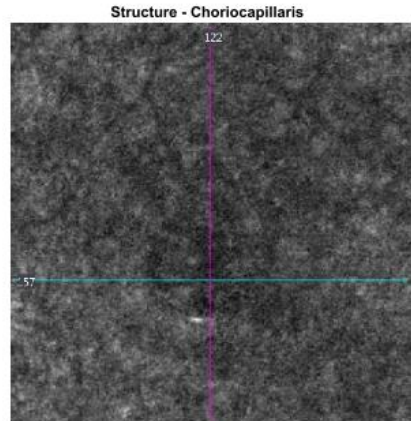
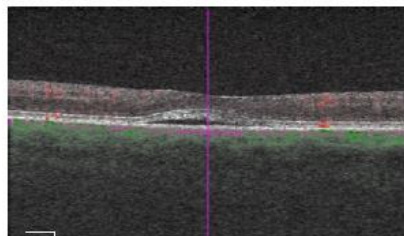
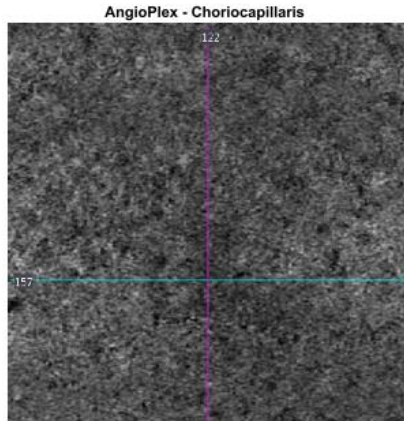


Angiography Analysis : Angiography 3x3 mm

OD OS



Pure PED



Current View:Choriocapillaris

Reference	Offset
Top: RPE	29
Bottom: RPE	49

Pure Pigment epithelial detachment

Cost Saving Vs FFA

- FFA
 - 2 nurses & 1 Photographer
 - Fluorescein and ICG Vials, Cannulars
 - Time 1 – 1.5 hours for patient
 - Side effects
 - Nausea
 - 1 in 300 Skin reaction
 - 1 in 1000 allergy
 - 1 in 250,000 death
 - View on line only
 - Costs
 - Capital ++ (50K)
 - Staff +++
 - Consumables ++
- OCT – A
 - 1 operator – HCA to Photographer
 - 2.8 seconds per scan
 - Full survey 9 fields under 5 minutes
 - Non – invasive
 - No side effects
 - Time few minutes only
 - View options
 - On line with Forum
 - On line on machine
 - Comprehensive Print outs/PDF
 - Costs (80K)
 - Capital +++
 - Staff +
 - Consumables Nil

Dawn of a New Era in Imaging

