

*Thanks to invite me to participate to this Symposium
I wish to discuss with you about some*

Clinical Cases of CNV related to AMD with Triton Swept Source OCT-Angiography



Satellite meeting : The clinical advantages of

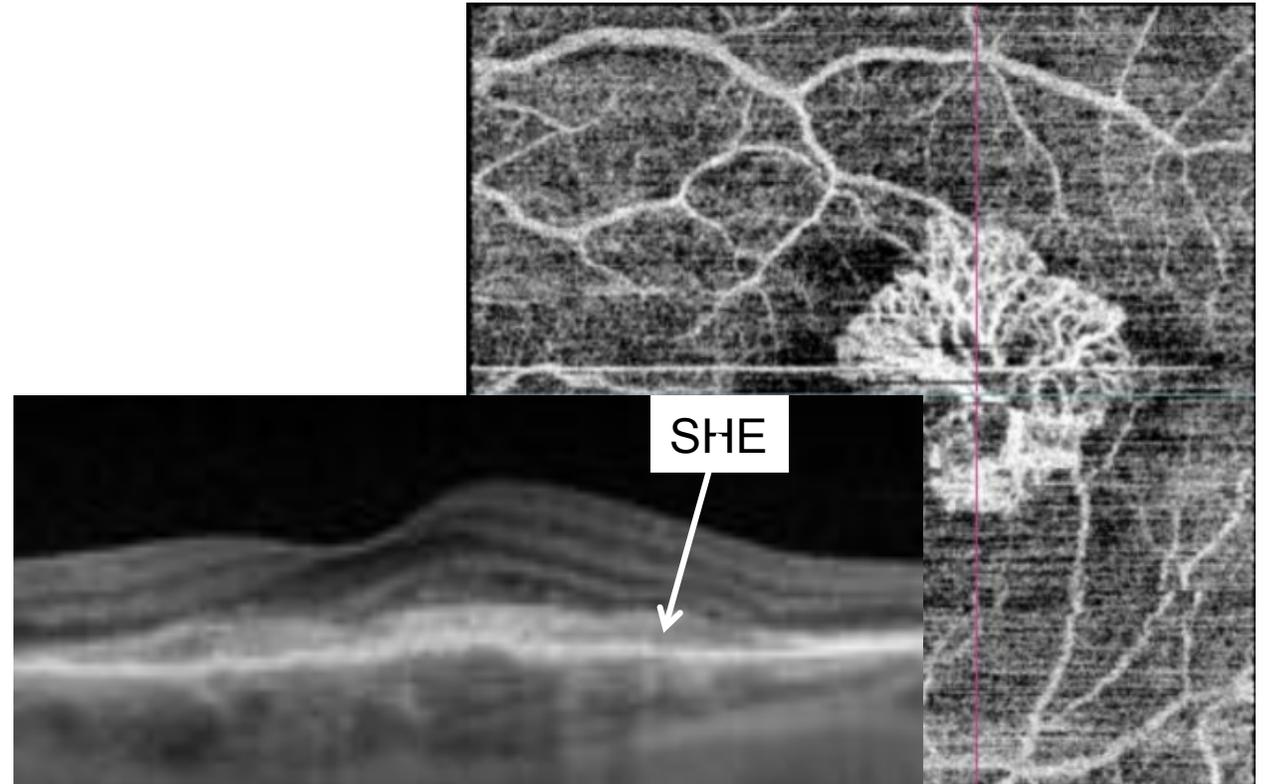
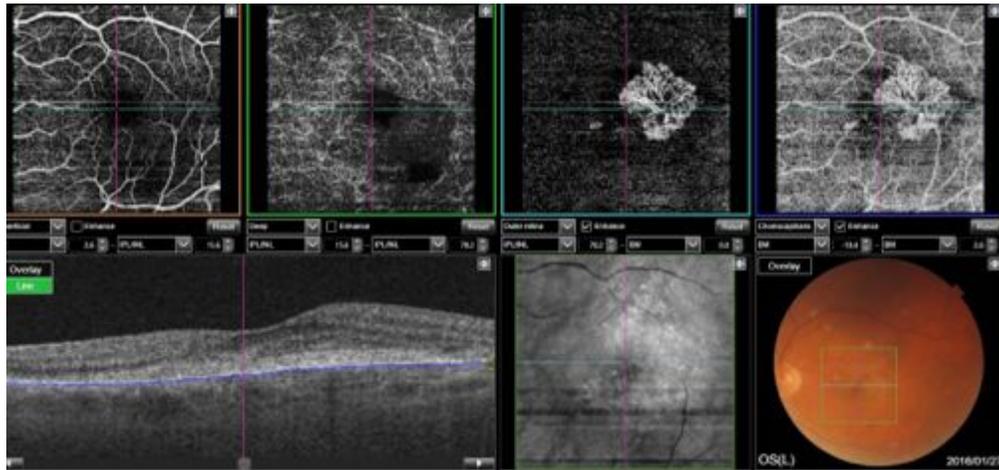
Swept-Source OCT-Angiography

Conflicts

- Bayer
- Roche
- Novartis
- Allergan
- Topcon
- Heidelberg: FA, ICG and structural OCT included in this pptx

We will analyse a
Multimodal imaging of retrofoveal and active type II CNV

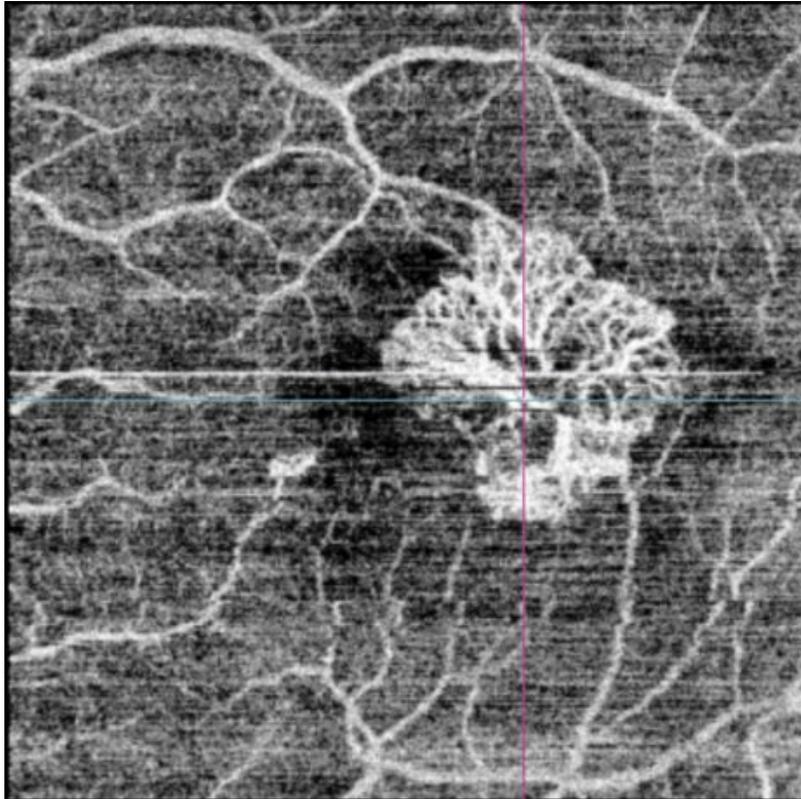
Let's look at the OCT-A



- FA shows leakage, ICG-A eliminates RAP or PVC
- Structural OCT-B shows :
 - **PED** and **subretinal hyperelective exsudation (SHE)** on this high resolution section B
- OCT-A shows the B-Scan (low resolution) and 4 CScan (SCP;DCP; Avascular, CC) color pictures and

- **Topcon OCT-A gives a wonderful hyper-flow signal in few secondes,**
- **with good tracking**

Activity Criteria OCT-A



Let's talk about « OCTA criteria »
as described by Pr GC

Five essential criteria

1. Lacy-wheel Shape
2. Multiples Anastomosis and Loops
3. Branching
4. Peripheral arcade
5. Perilesional Halo

- These criteria were described by Pr Coscas, in Retina, last year with Heidelberg technology (73 eyes, 2 observers)
- The sensibility and the specificity were excellent **94.9 % (IC: 85.4% - 98.7%)/ 85.7% (IC: 64.3% - 95.7%)***

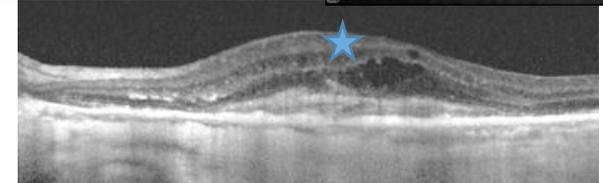
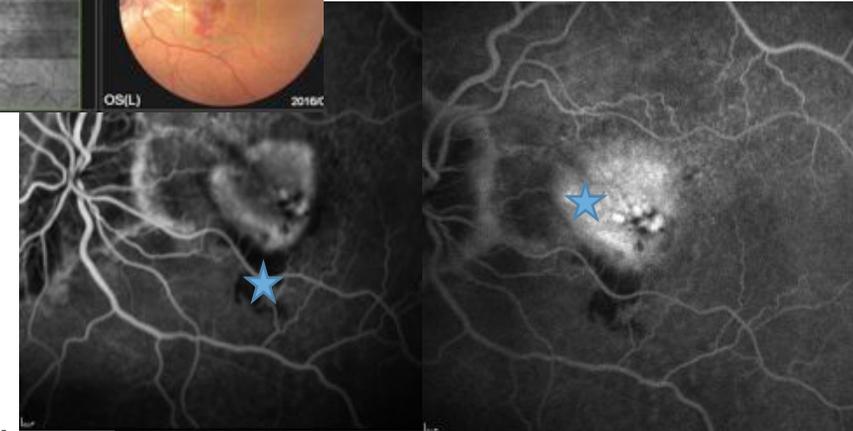
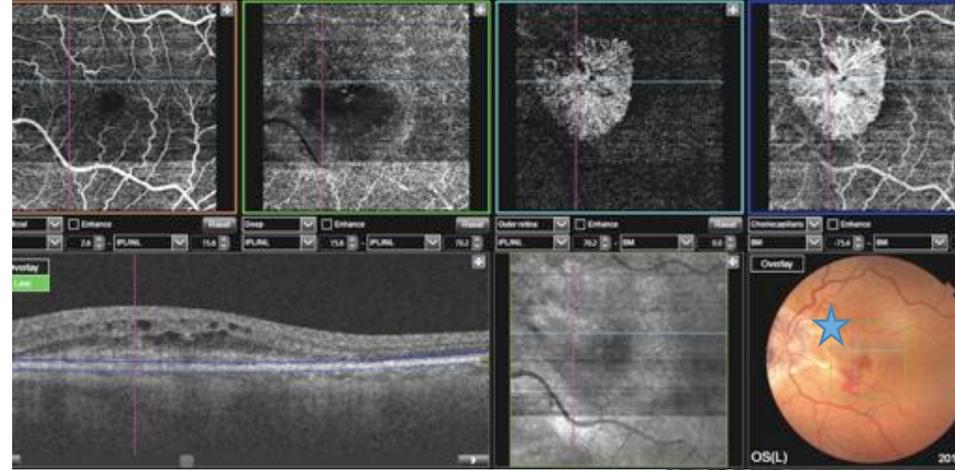
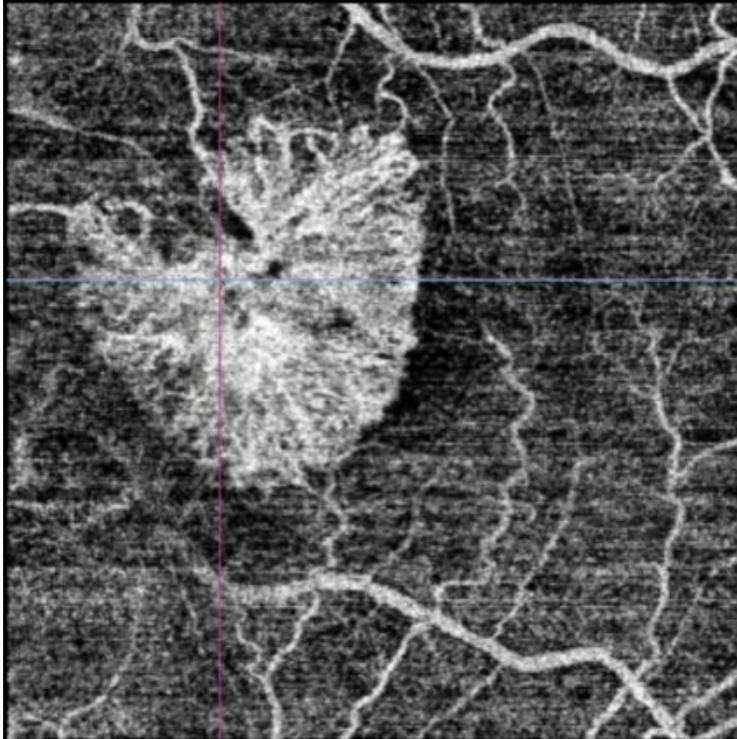
We founded the same parameters with Topcon instrument, using the full spectrum algorithm

- Shape is well-defined,
- With presence of anastomoses and loops,
- CNV have numerous branching and tiny capillaries,

* Coscas F, presented Nice Retina, 2016
COFT1; IOVS 2016 (SAADA: 66,7%)

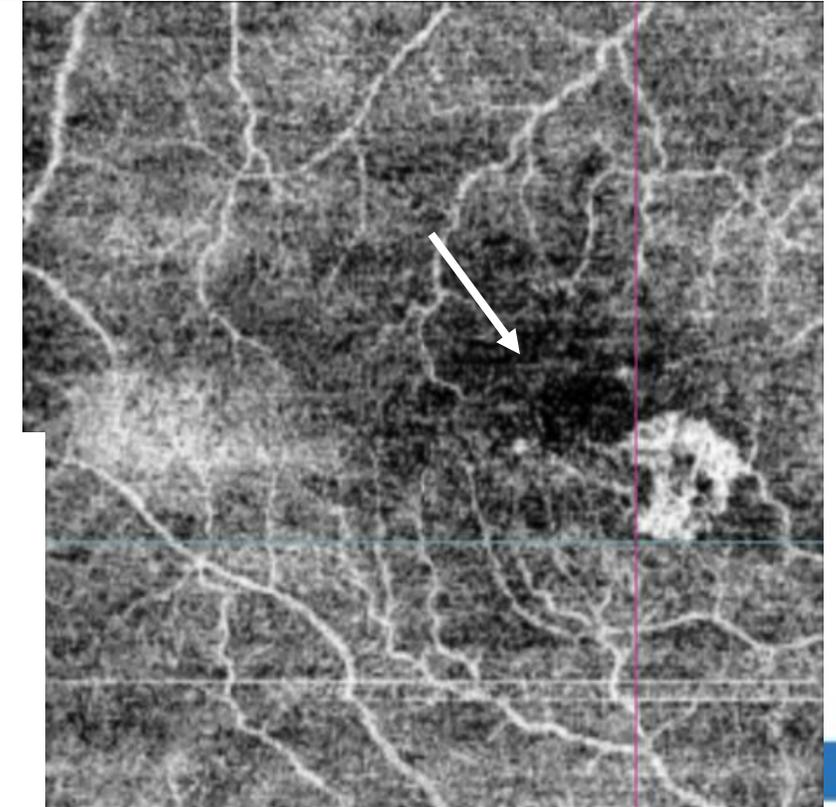
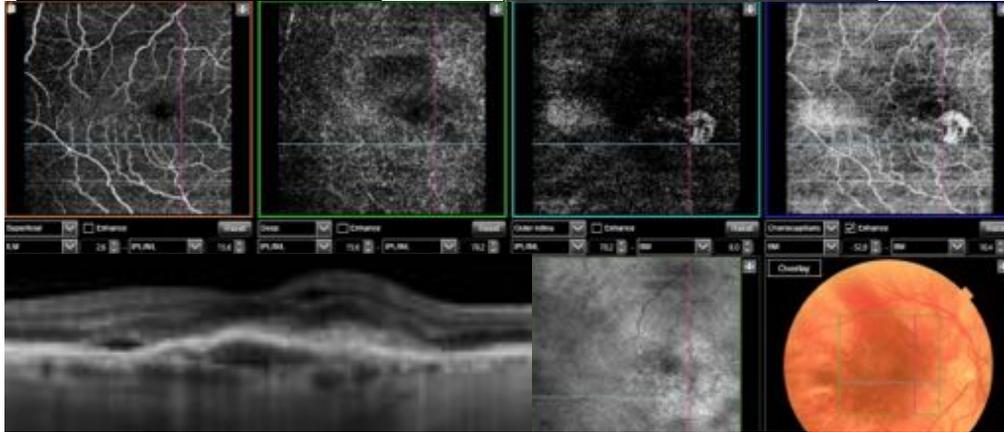
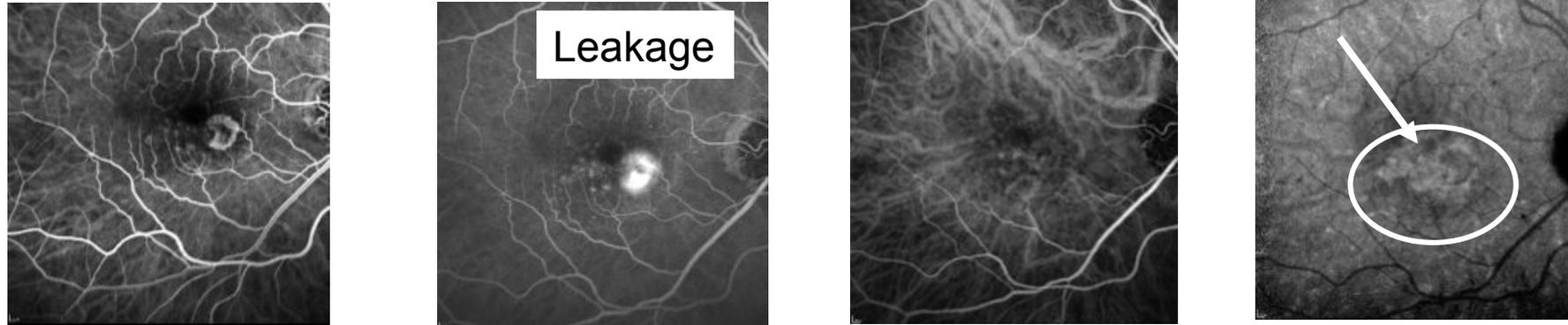
- The morphology of the vessel termini, assesses the presence of a peripheral arcade,
- With presence of a perilesional hypo-intense halo, on Bruch segmentation.

This is Another type II CNV



This sea-fan shaped CNV have dense branching and numerous tiny capillaries with anastomoses, loops and complete peripheral arcade and hypo intense halo
Moreover, Hemorrhages are visible on the color picture!!!
Fluid is visible on OCT-B and FA, which are included in Triton

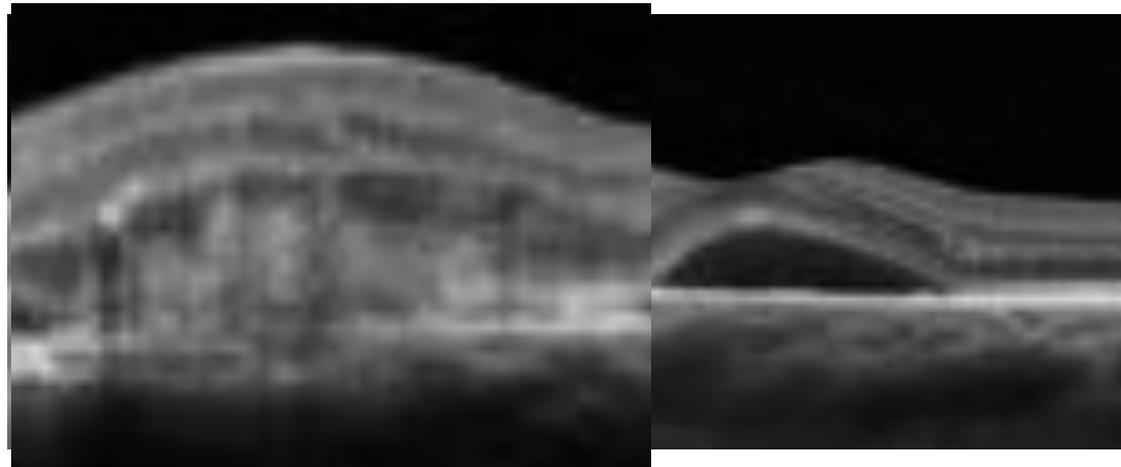
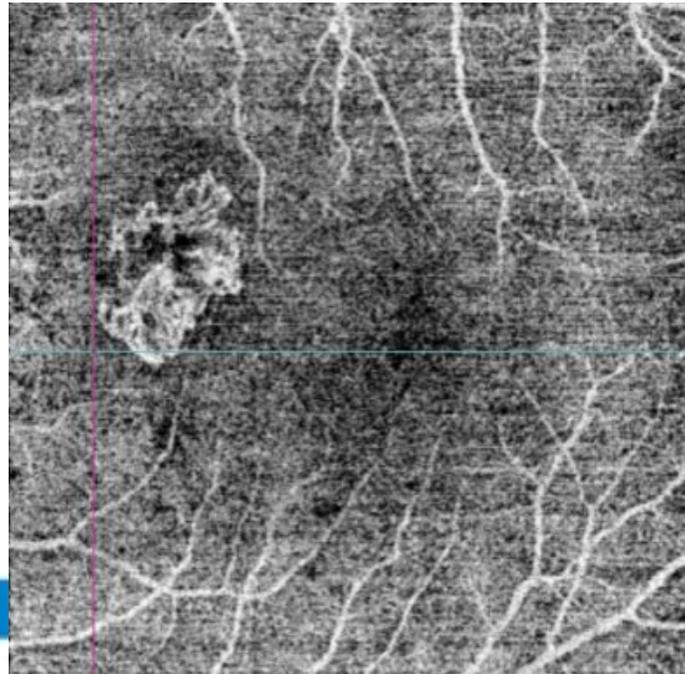
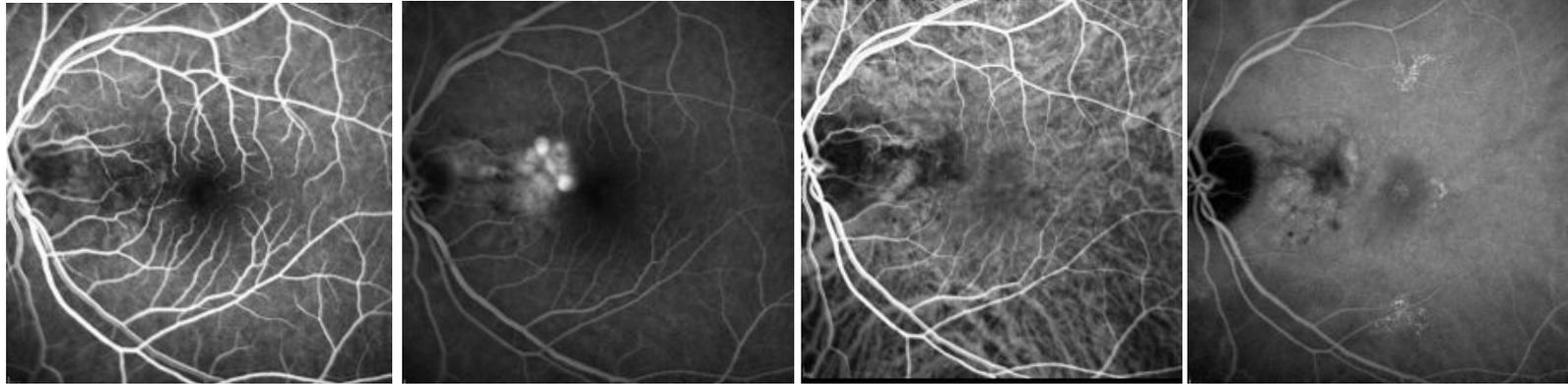
Another case Minimally Classic CNV



- Structural and high resolution OCT-B is mandatory to identify exudative reaction and
- ICG-A to have the exact total CNV extension
- **The hyper-flow signal corresponding to active CNV, is obtained fastly, easily and without dye**
- **Type II CNV is proeminent,**
- as you can see, it also possible to observe
- **Type I CNV, which are detectable on a deeper segmentation.**

Another disease : **Extrafoveal (interpapillomacular bundle) CNV with pachychoroid :**

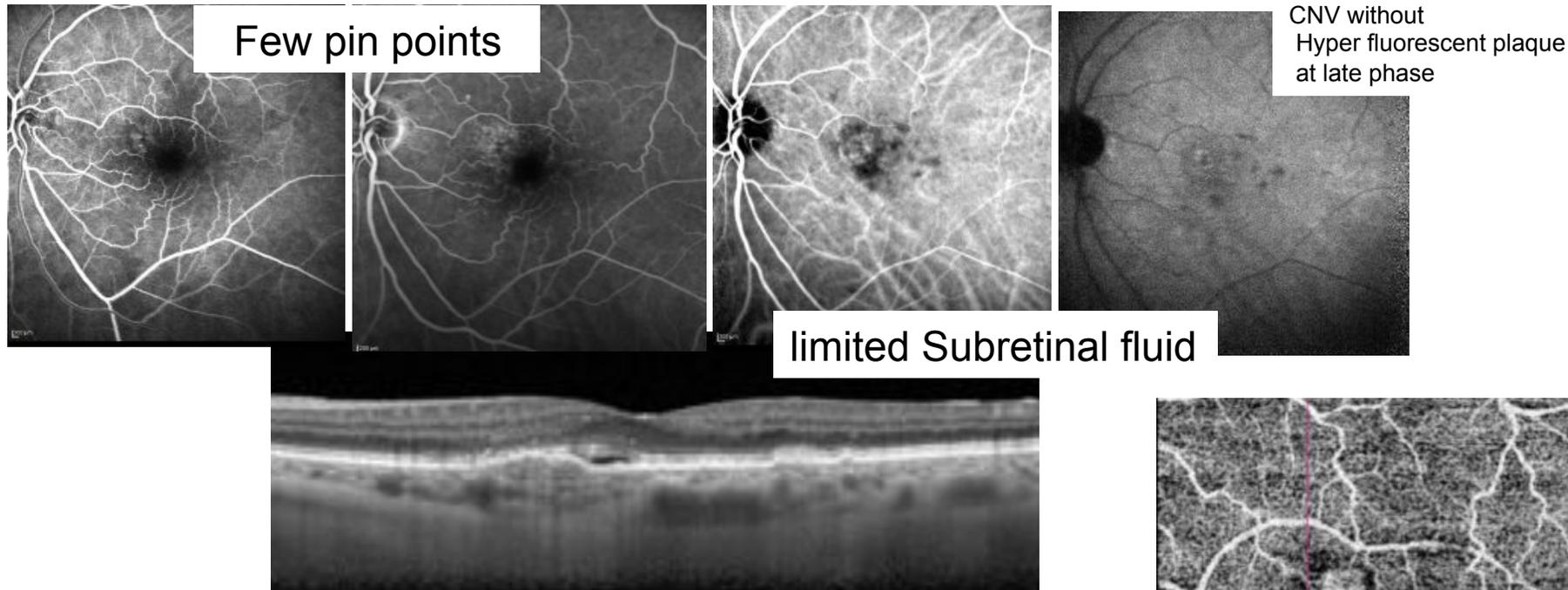
the diagnosis is uncertain between polyps and CNV on FA and OCTB



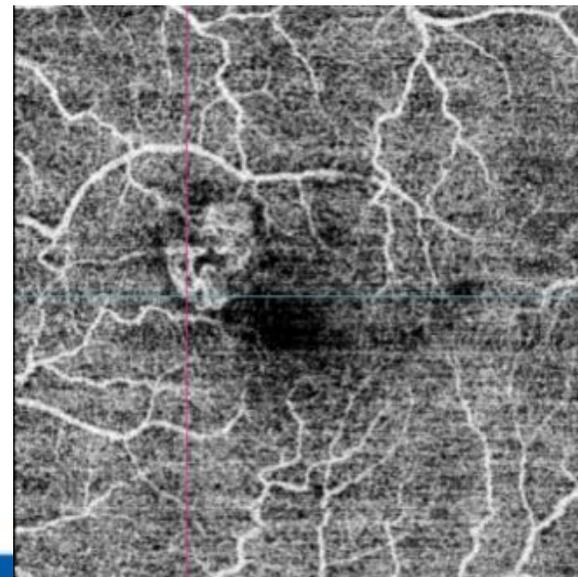
But we have our five essential

criteria of activity of CNV

Can OCT-A provide criteria of quiescence?: these type I CNV have:



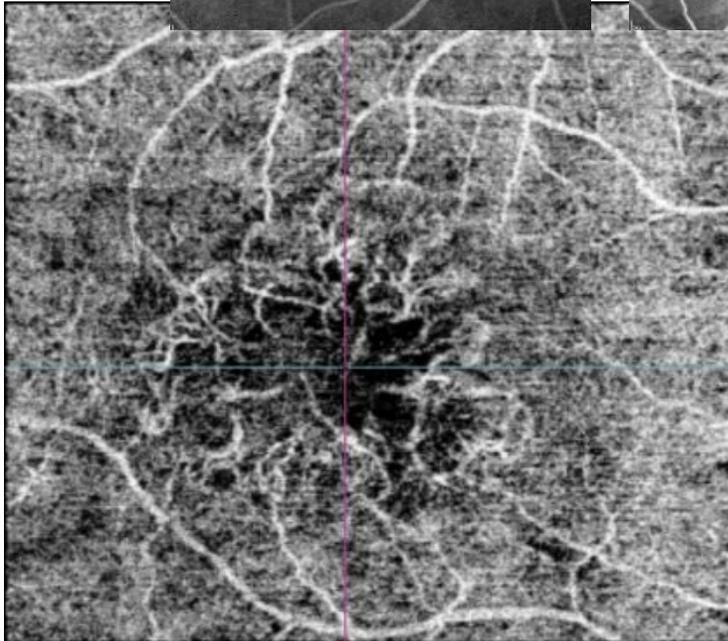
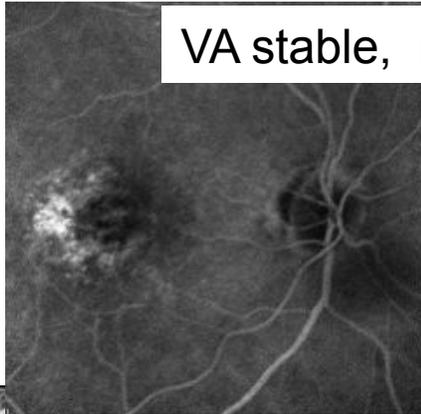
On OCT-A: We have all five essential criteria of activity!!!
(Well defined shape, branching, anastomosis, peripheral arcade and hypo intense halo)



→retreatment is needed

Is this treated lesion still active?

VA stable, no leakage, few pin points, small PED with fluid?

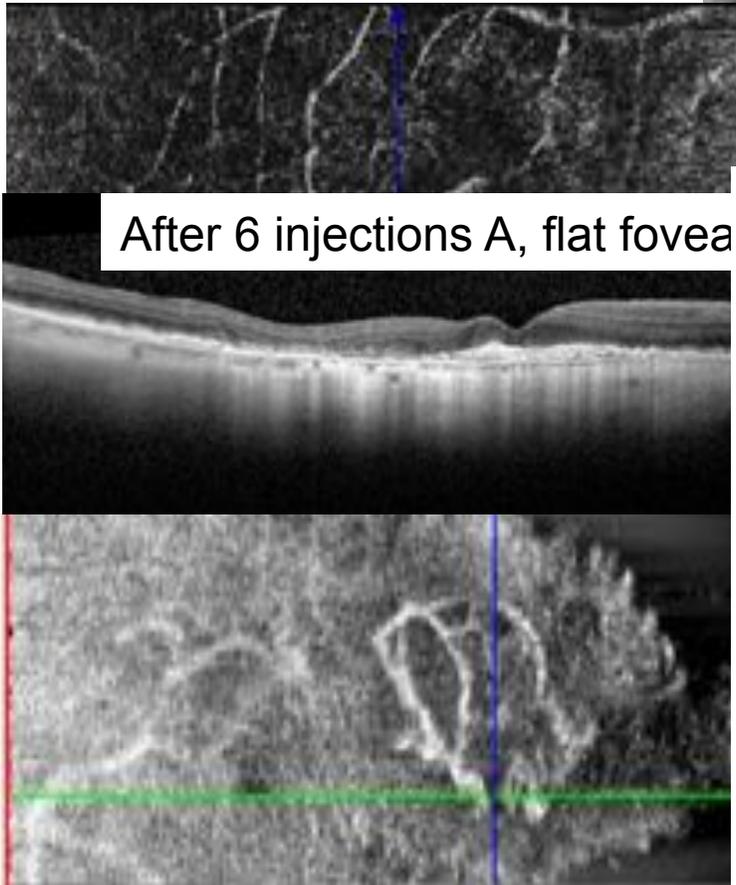
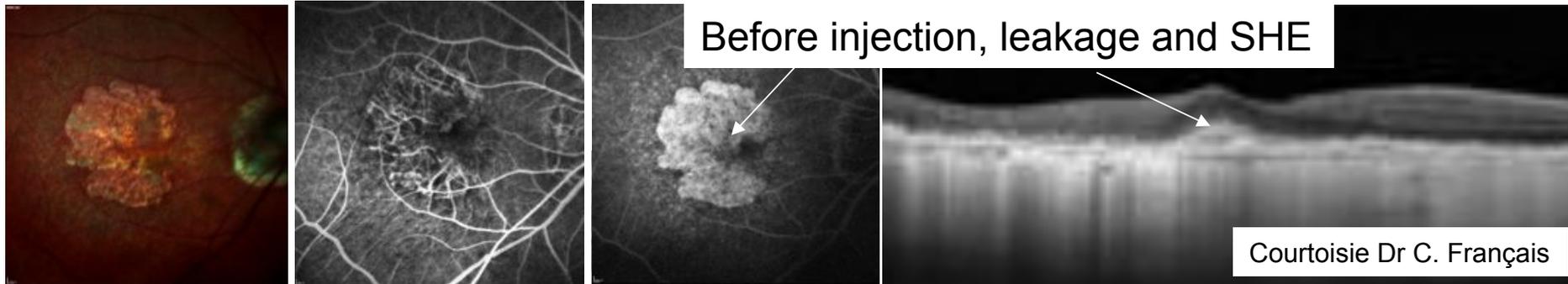


Can we check together the criteria?

1. Well defined Shape : **YES**
2. Anastomosis and Loops: **YES FEW**
3. **NO** branching: **large mature vessels**
4. Peripheral arcade: **YES Partial**
5. **NO** Peri lesionnal Halo

These CNV are still **active** with **3 out 5 essential criteria** corresponding to fluid persistence on OCT-B, we consider that treatment is needed

In this case: CNV complicating Atrophic AMD



Five essential criteria of activity

Five criteria of quiescence

1. No well defined Shape
2. No branching: large mature vessels
3. No Anastomosis, No Loop
4. No arcade: « Dead tree » aspect
5. No Perilesional Halo

we consider that no re treatment was needed

→ No retreatment is needed

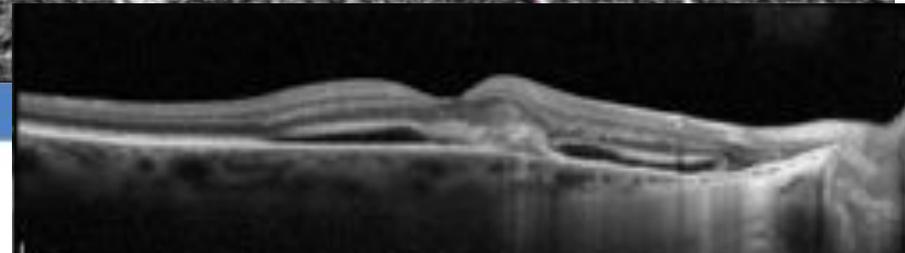
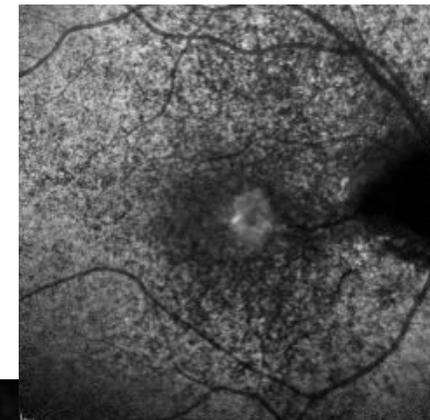
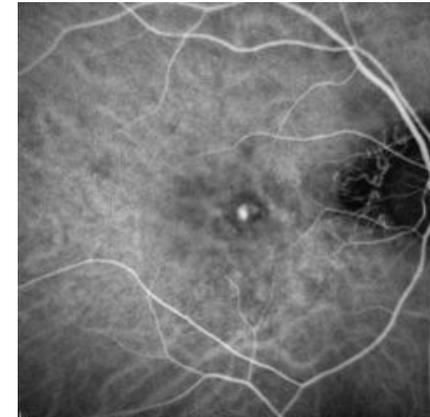
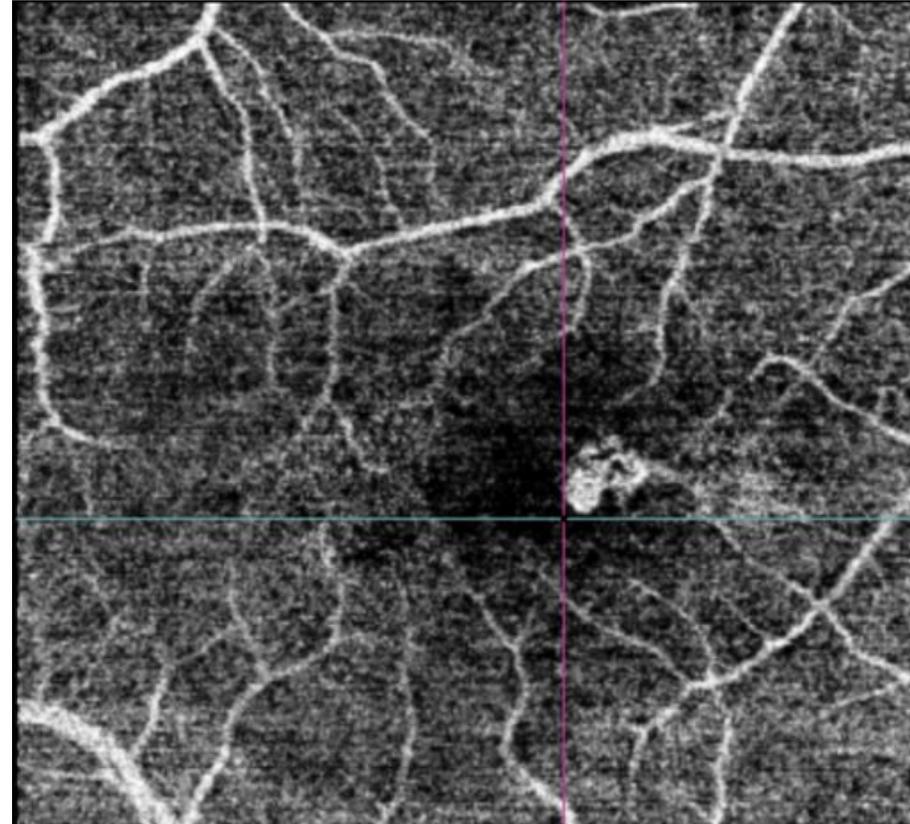
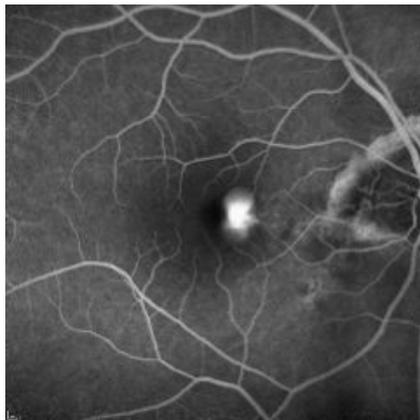
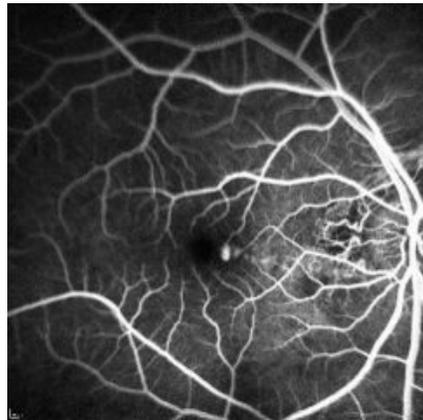


Now I'll show you some

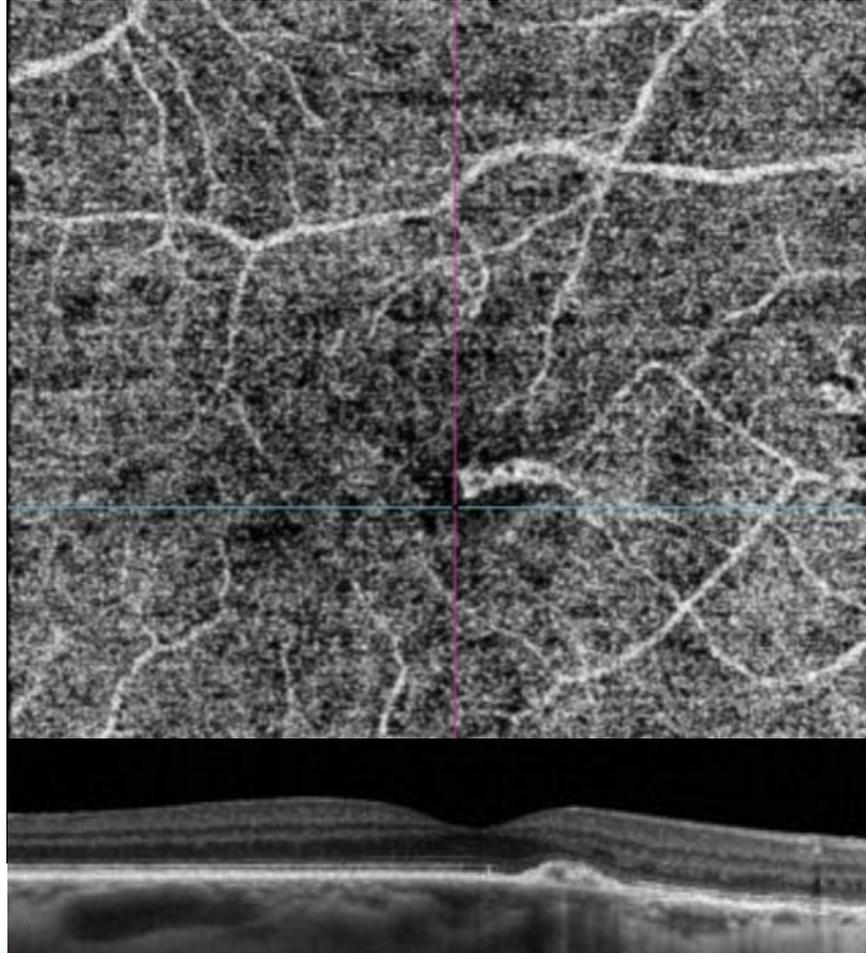
Follow up with Triton OCT-A

VA :20/32 M+

Initial new multimodal imaging: active mixed type I and II CNV



3 months later with Aflibercept Injections
(loading dose), dramatic decrease of hypersignal
significant increase of VA: +3 lines

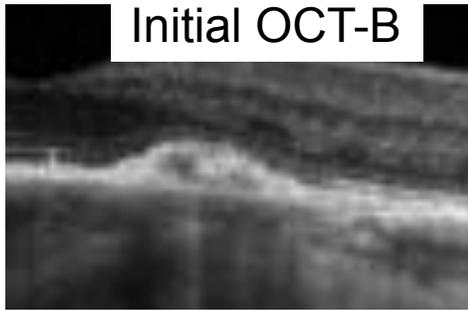


Courtesy Dr Favard

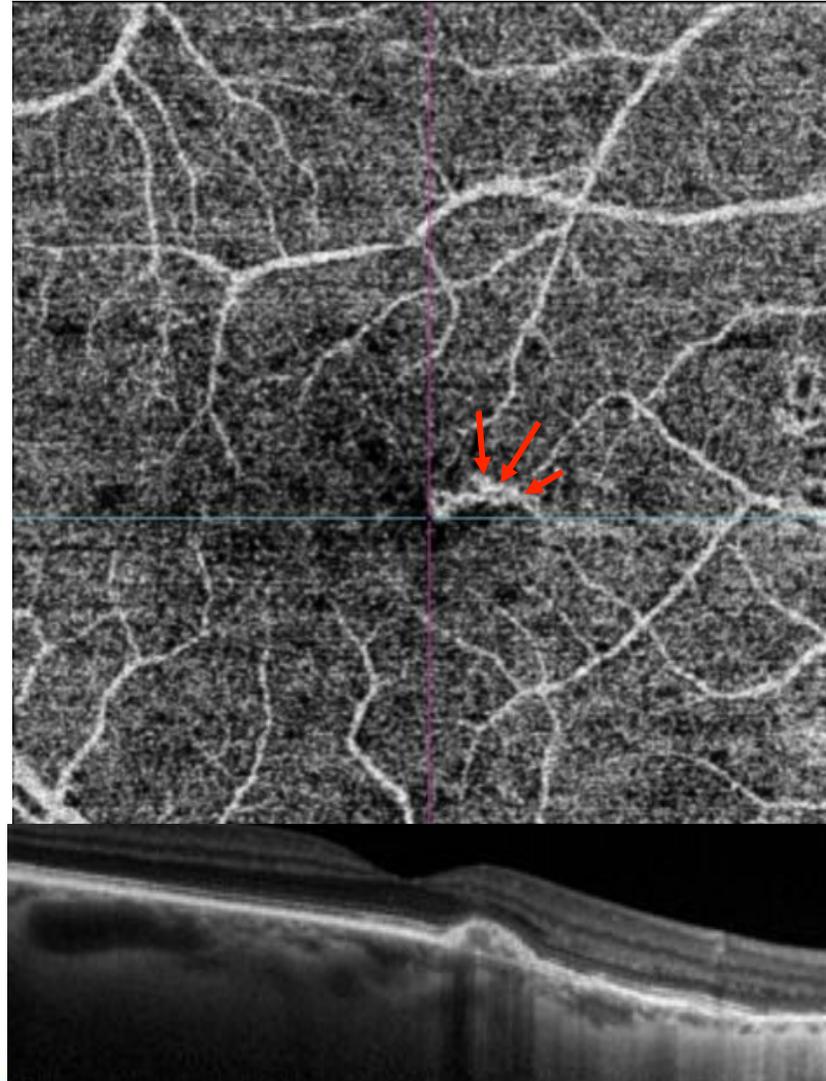
We decided to observe for 2 months

2 months later, is an enlargement of hyperflow signal?

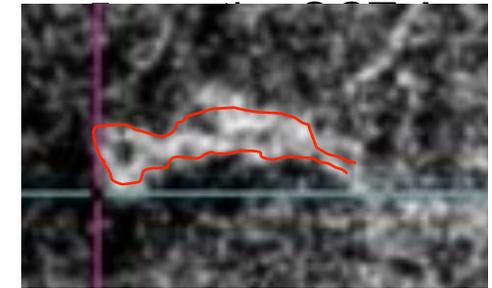
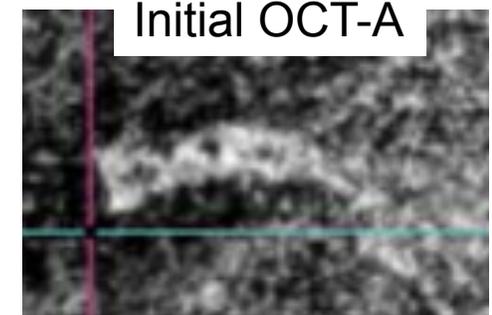
left



On OCT-B:
Increase of PED
EZ is less visible



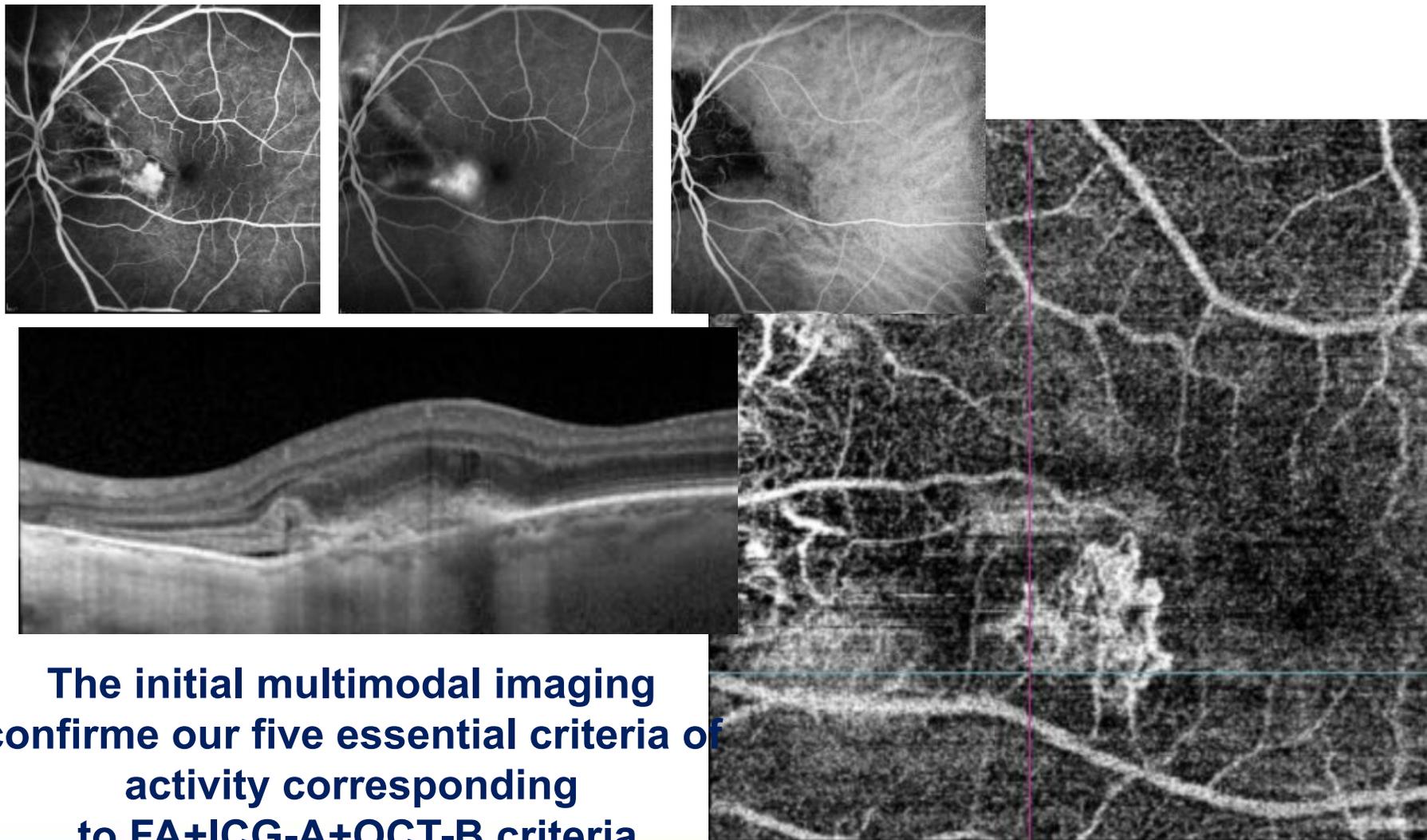
right



On OCT-A
Increase of tiny vessels
More interconnections
Presence of halo
**It's certainly
the beginning of a
recurrence**

This example:

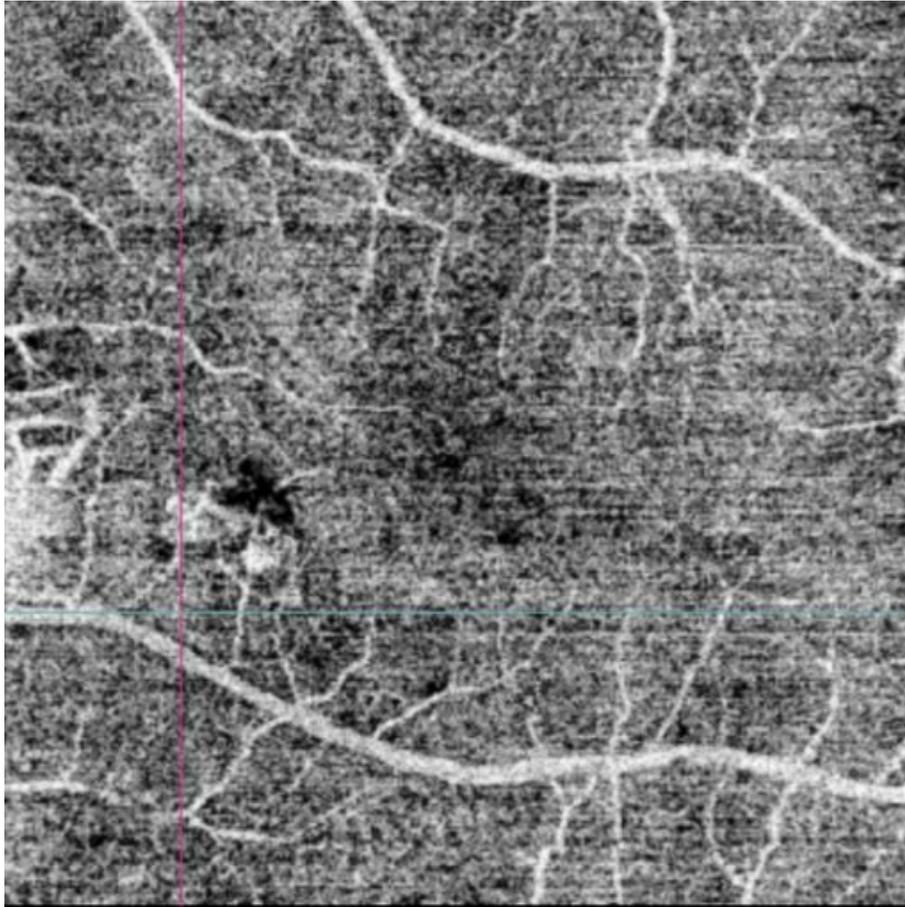
CNV on degenerative streak with good VA and M+



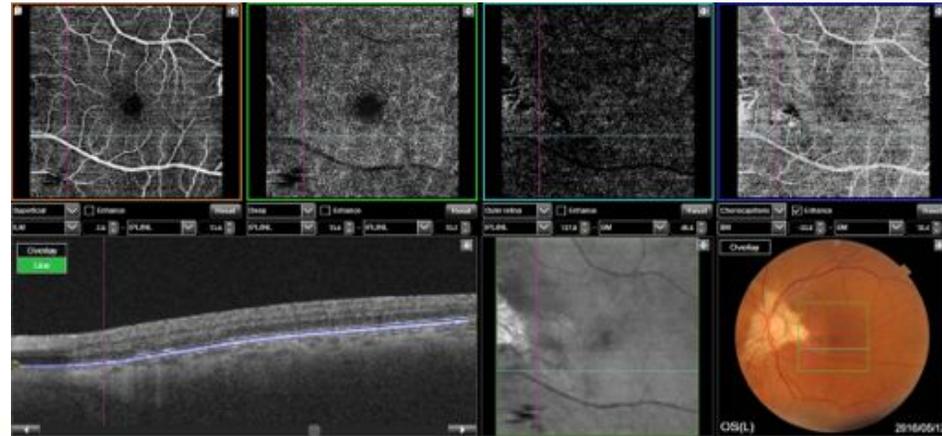
**The initial multimodal imaging
confirme our five essential criteria of
activity corresponding
to FA+ICG-A+OCT-B criteria**

Courtesy Dr Favard

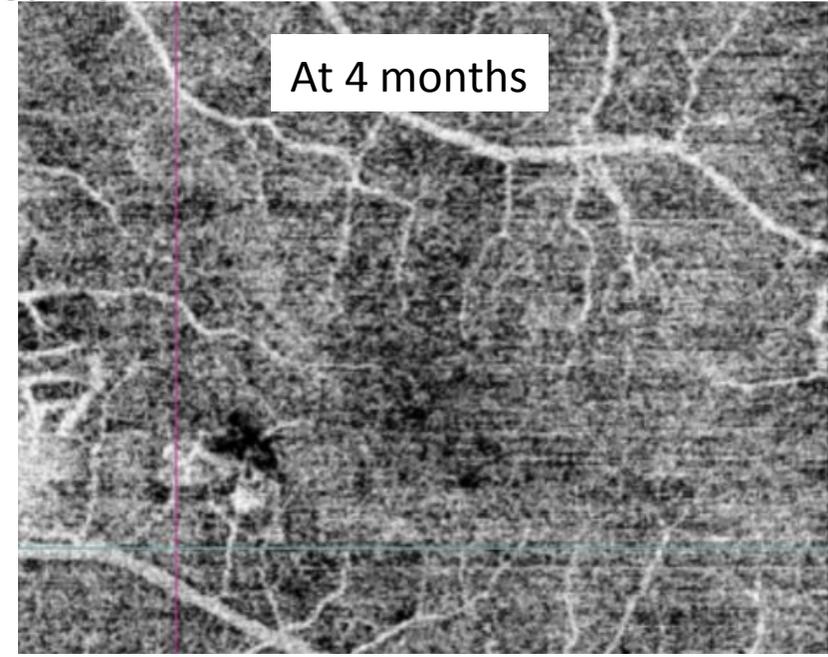
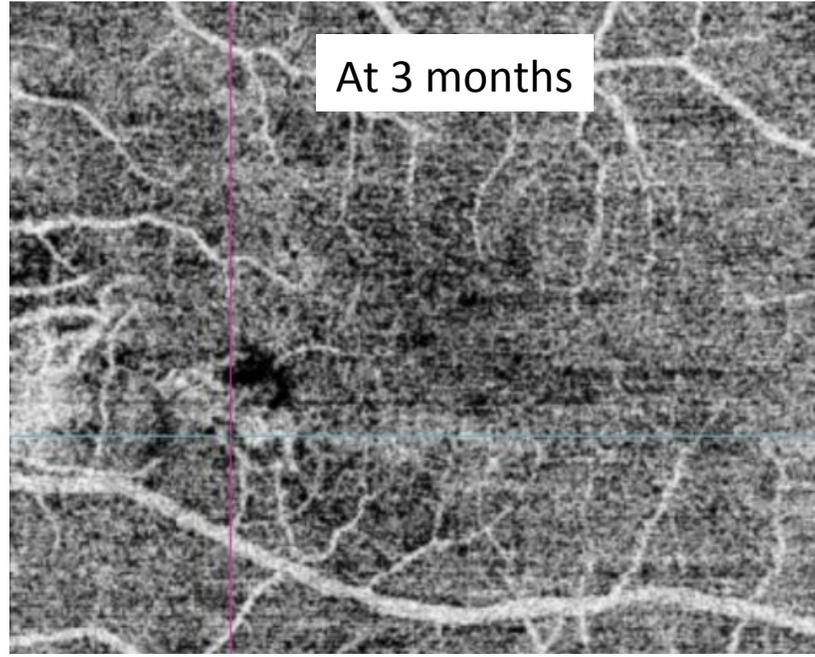
3 months later after loading dose of
Ranibizumab, decrease of hypersignal
VA: 20/25, disappearance of Metamorphopsia



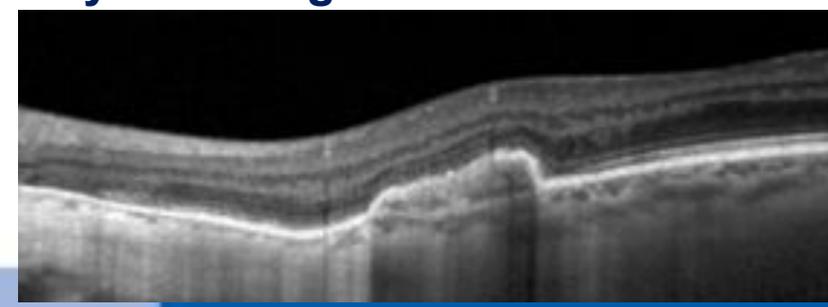
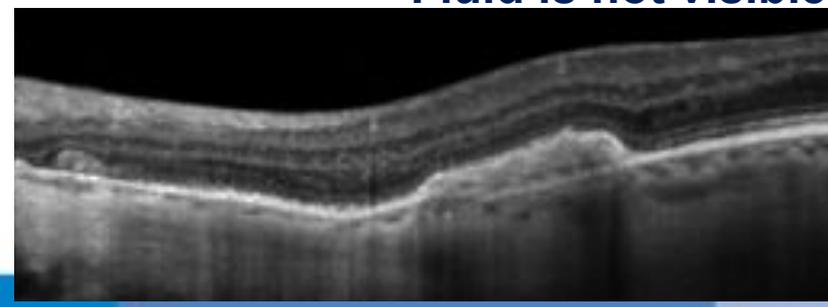
- ? Out 5 essential criteria
1. Well defined shape : **YES**
 2. **FEW** Anastomosis and Loops
 3. Branching : **YES**
 4. **Partial** Peripheral arcade
 5. **Partial** Perilesionnal Halo
 6. → the decision is open



We decided to inject
one month later, No recurrence
VA : 20/25 M-

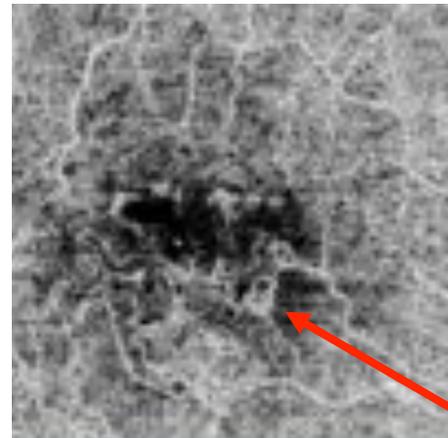
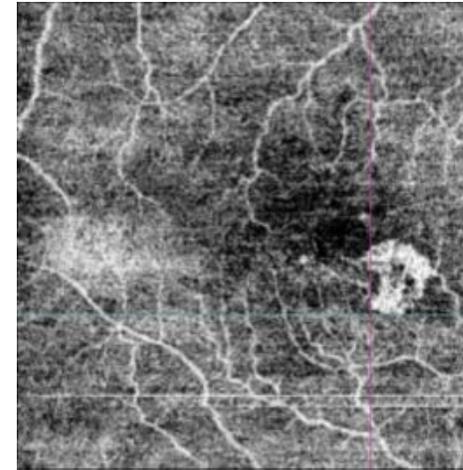
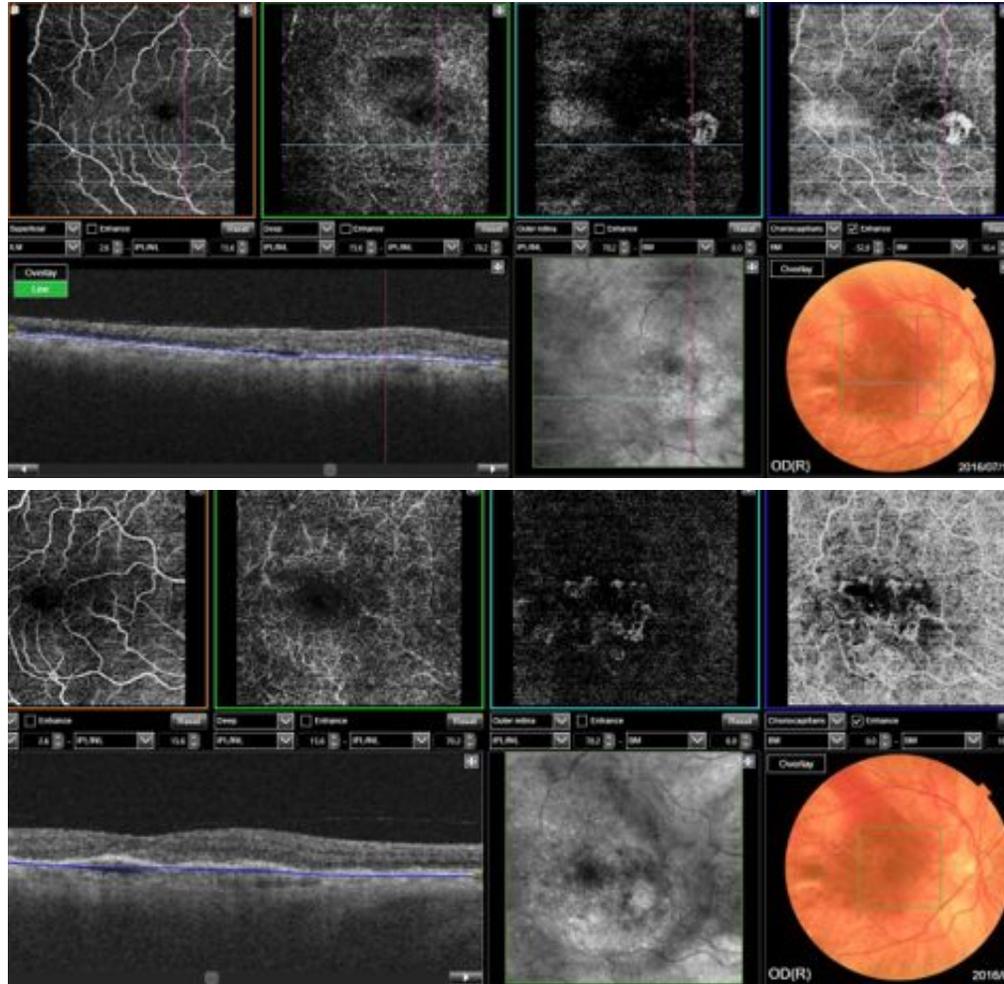


Hypersignal is stable
Fluid is not visible on “eye tracking“ OCT-B



→ Adapt the rythm of injection

and one case of Persistence of activity after 4 Aflibercept injections
at top Active CNV and at bottom, you can observe, we have loops,
▲ tiny capillaries et peripheral arcade, we continue to inject



In conclusion, Swept Source OCT-A

- **New** Multi modal imaging method with
 - Fast acquisition
 - Color picture
 - High resolution line or radial OCT-B were associated
- OCT-A allows excellent diagnosis and follow up
 - After initial FA included in Triton and ICG-A

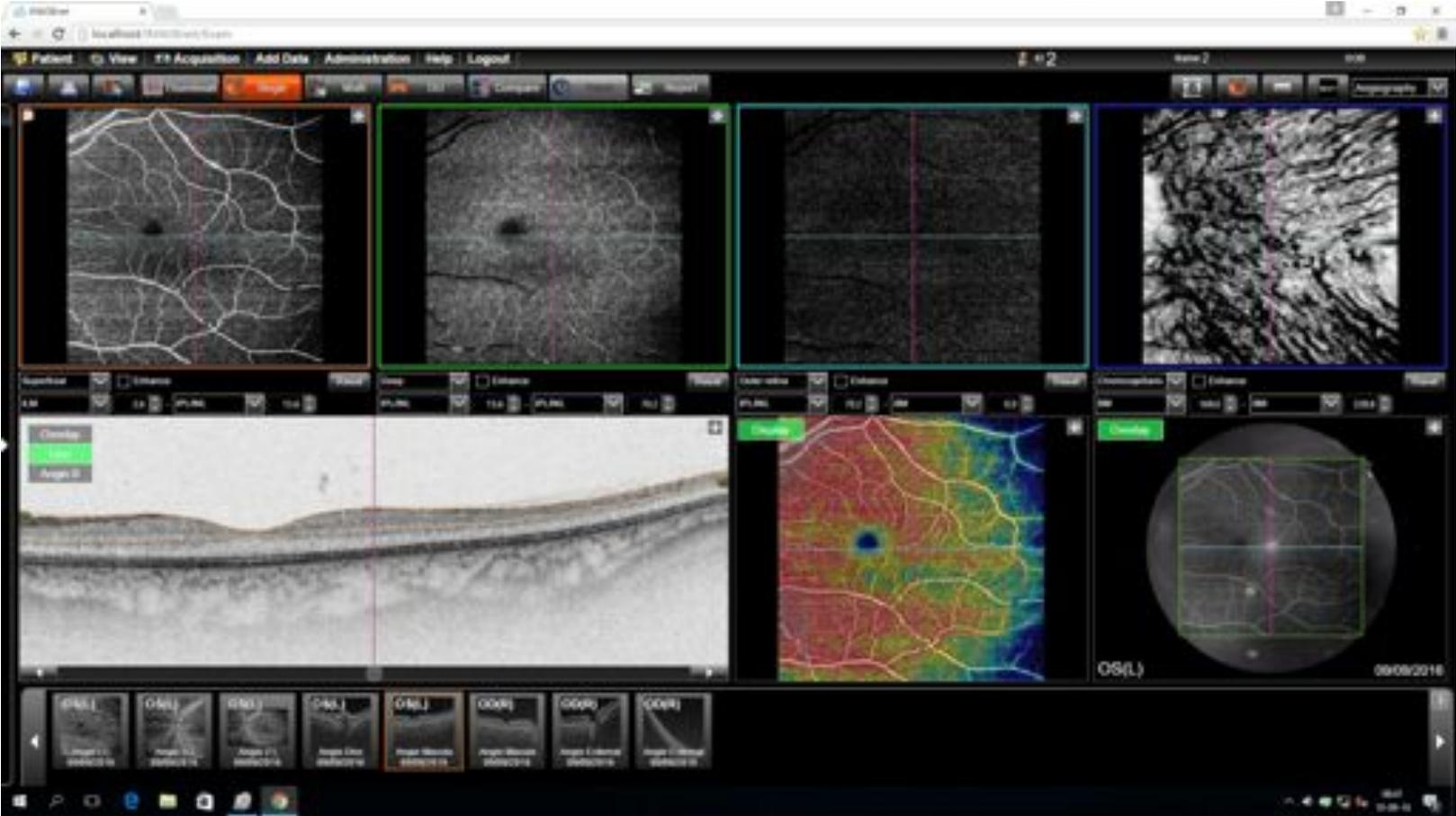
**Swept source OCT-A is a useful tool in
clinical practice**

Thank you for your attention

Amélioration des segmentations



Amélioration de la visibilité du Swept Source OCT



Ultra grand champ en Mosaïque

