

Restoration of Outer Retinal Layers After Aflibercept Therapy For Exudative AMD: Prognostic Value 5384-A0233

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INTRODUCTION

- The dissociation between CMT and BCVA
 - highlights the need for OCT parameters, which could
 - better indicate the functional success of therapy
- Our attention has been directed to lesions of ELM and EZ

PURPOSE

- To evaluate the Outer Retinal Layers Changes:**
 - Disruption of the ELM and the EZ**
 - Swelling of the EZ
 - Sub-retinal Hyper-reflective Exudation as sub-retinal "dirty gray" hyper-reflective lesion (SHE)
- To correlate to the BCVA and to fluid re-absorption**

METHODS

- Retrospective study of 50 eyes**
 - affected by active « naïve » exudative AMD
 - treated by intravitreal Aflibercept
 - 18 month follow up, with
- BCVA (EDTRS), OCT, FA and ICGA;
- The sub-foveal alterations of EZ and ELM**
 - Were evaluated in the 2000 µm
 - Cross-Line EDI B-Scan (20° - 100 frames)
 - centered on the foveal depression

RESULTS

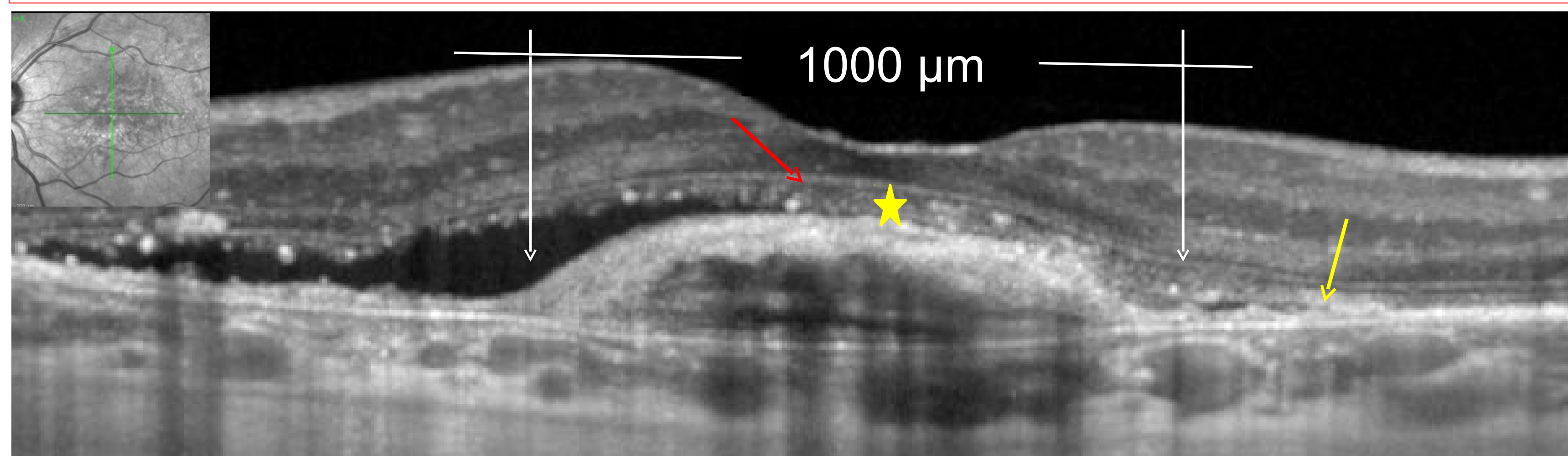
Morphological Results: Outer Layers Changes

- EZ disruption, ELM disruption, EZ Swelling and SHE
- improved significantly at 18 months (p=0.001)
- EZ and ELM restoration are correlated (p=0.035)
- EZ Swelling decreased from 72% to 30% (p=0.001)
- SHE decreased :52% to 6% in 18 months (p=0.001)
- VA gain correlates with ELM restoration (p=0.018)**
- BCVA gain : + 5,8 letters (p=0.001)
- SFR, CME, PED, CM, PED diminished (p=0.001)

REFERENCES

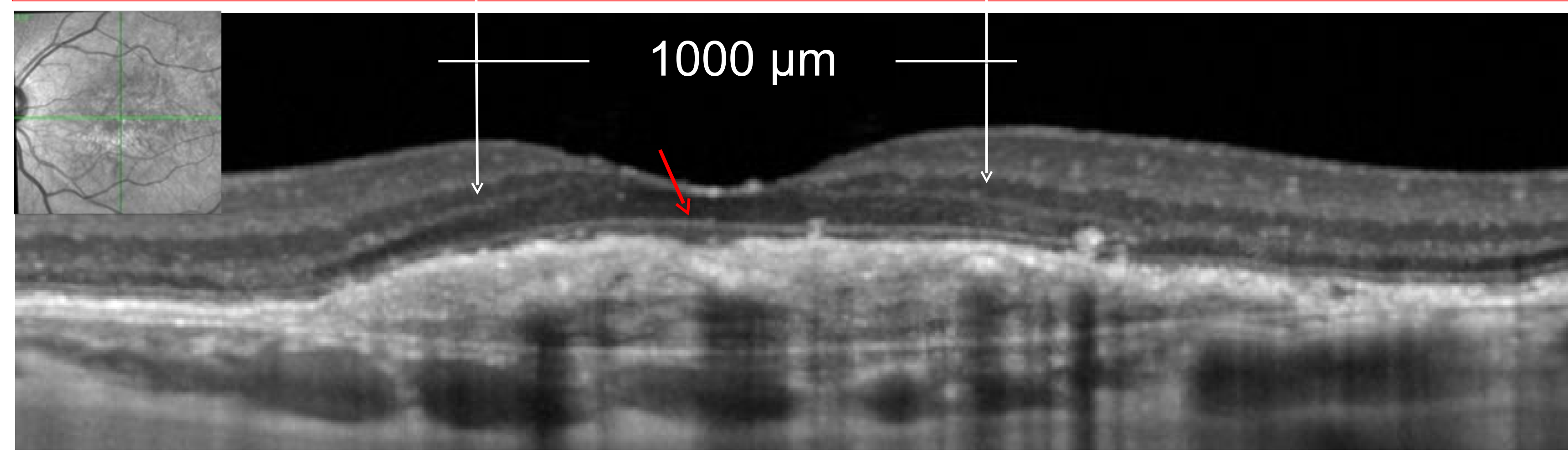
1-Gray hyper-reflective subretinal exudative lesions in exudative AMD. Ores R, et al. AJO 2014
 2-Sub-retinal hyper-reflective exudation associated with neovascular AMD. Shah VP, et al. Retina. 2014

Fig 1A: OCT: Naive Exudative AMD with Type I CNV



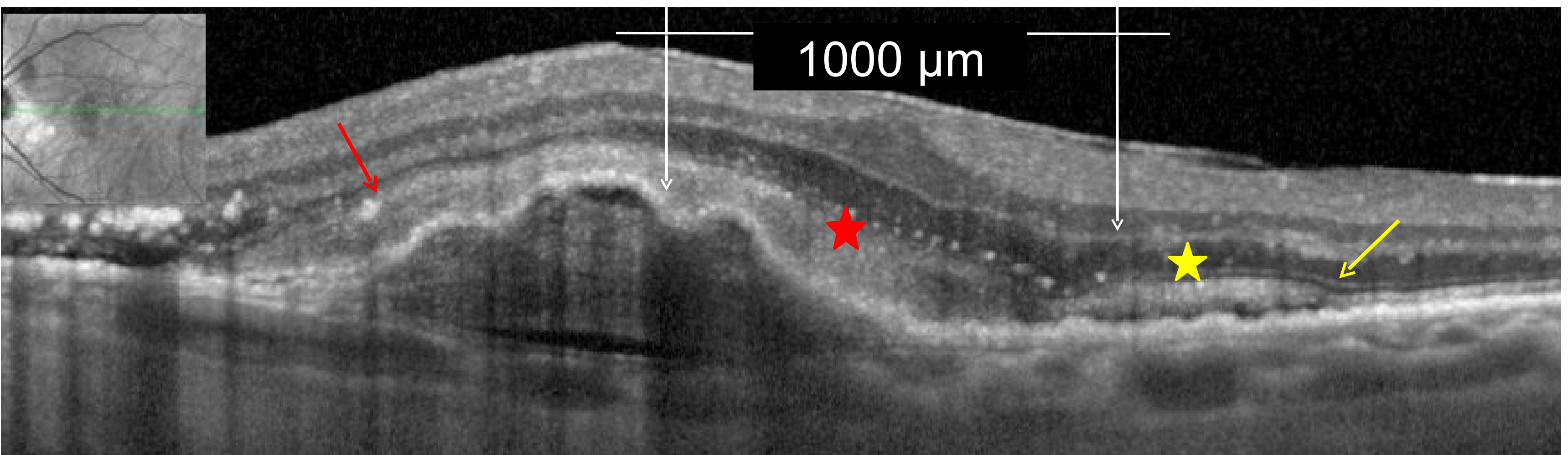
Normal retro-foveal External Limiting Membrane (red arrow). Ellipsoid Zone (yellow arrow) shows change in reflectivity with fragmentation, hyper reflective spots and increase of thickness: typical Swelling of Ellipsoid Zone (yellow star),

Fig 1B: OCT : same patient 18 months Aflibercept



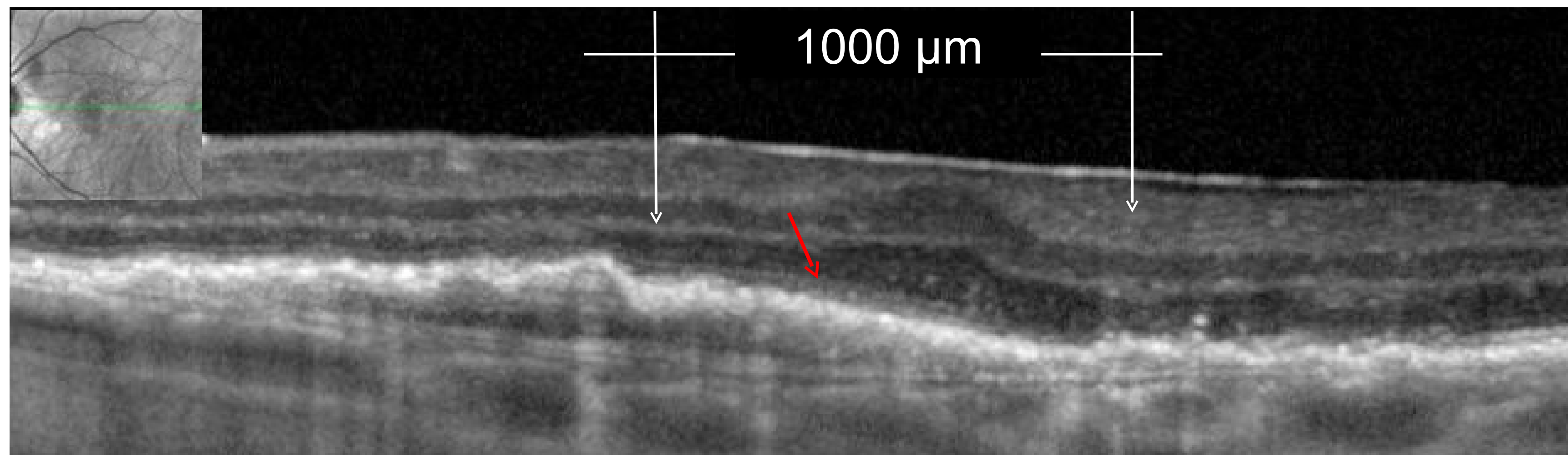
Complete restoration of retro foveal ELM (red arrow).
 No swelling EZ
 Subfoveal EZ which is not detectable
 No additional sub hyper-reflective exudation.

Fig 2A: OCT: Naive exudative AMD with Type I CNV



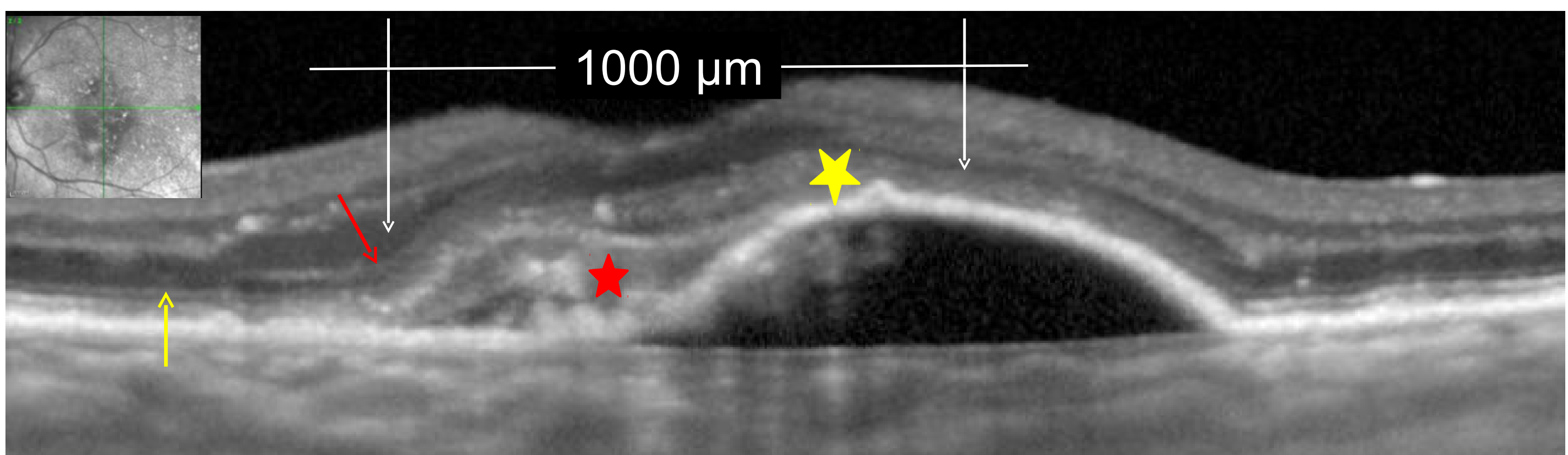
No retro-foveal External Limiting Membrane (red arrow). Ellipsoid Zone (yellow arrow) shows change in reflectivity /fragmentation, hyper reflective spots and increase of thickness: typical Swelling of Ellipsoid Zone (yellow star). large band of hyper reflective exudative material.(red star)

Fig 2B: OCT : same patient 18 months Aflibercept



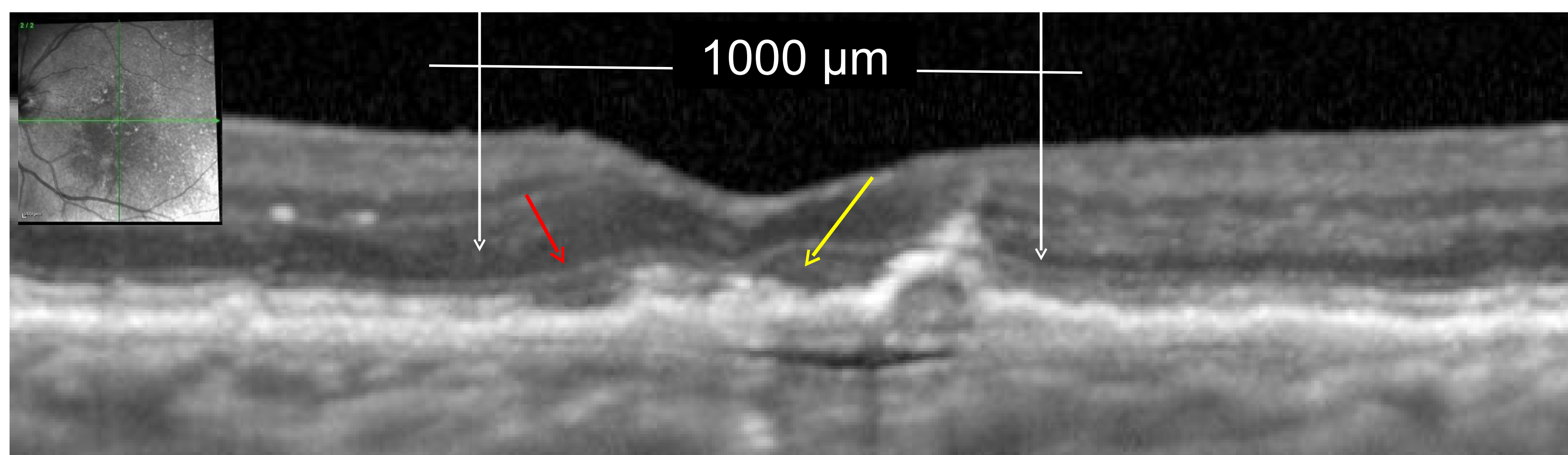
Partial restoration of sub foveal External limiting Membrane
 Complete absence of sub hyper reflective material
 No swelling of Ellipsoid Zone
 No restoration of Ellipsoid Zone

Fig 3A: OCT: Naive exudative AMD with Type I CNV



ELM (red arrow): no detectable and EZ (yellow arrow) is still visible associated with a large band of hyper reflective exudative material (SHE) and Swelling of EZ (red star)

Fig 3B: OCT : same patient 18 months Aflibercept



Partial recovery of ELM and EZ.
 No swelling.
 Absence of the large band of hyper reflective exudative material (SHE)

DISCUSSION AND CONCLUSION

The altered retinal outer layers can restore after anti-VGF treatment in wet AMD.
The initial state of the ELM is correlated to the final BCVA
 The involvement of EZ is usually correlated to the ELM involvement but without evident correlation to final BCVA
 The condition of the ELM probably represents the integrity of photoreceptor cell bodies while
 The EZ may rather reflect the integrity of the Outer Segments.
 Therefore, the initial state of ELM Appears as an interesting predictor for photoreceptor restoration and final BCVA