

Blue Fundus Autofluorescence and Optical Coherence Tomography changes in unintentional retinal displacement with macular translocation after pars plana vitrectomy for retinal detachment

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Purpose

According to Dell’Omo et al. (2012), Fundus Autofluorescence (using Spectralis/HRA OCT) after standard vitrectomy for retinal detachment might show lines of increased or decreased autofluorescence, resulting from retinal folds, which in most cases might be easily identified using OCT.

Shiragami et al. (2010) concluded that Fundus Autofluorescence (using Topcon TRC-50DX) might be a valuable technique for the assessment of unintentional displacement of the retina after standard vitrectomy for retinal detachment. They found that hyperfluorescent lines, superiorly

parallel to retinal vessels within the vascular arcade, might indicate the previous position of the vessels.

We pretend to describe and analyze blue fundus autofluorescence (BFAF) and Spectral Domain Optical Coherence Tomography (SD-OCT) changes in a case of unintentional retinal displacement with macular translocation after pars plana vitrectomy for retinal detachment.

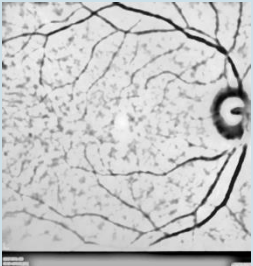
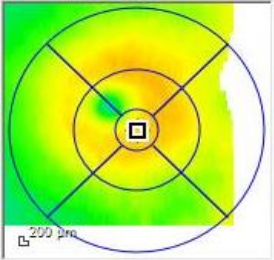
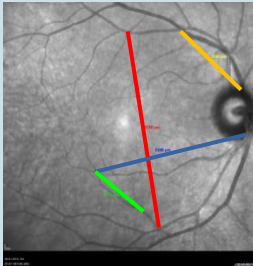
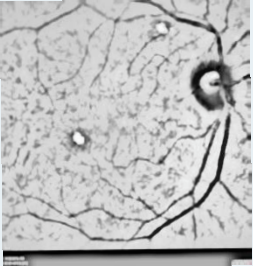
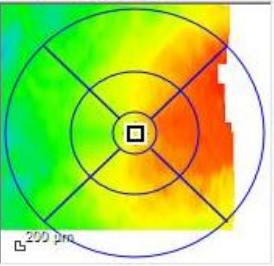
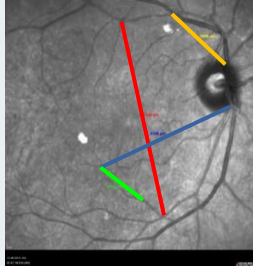
Shiragami C, Shiraga F, Yamaji H, Fukuda K, Takagishi M, Morita M, et al. Unintentional displacement of the retina after standard vitrectomy for rhegmatogenous retinal detachment. *Ophthalmology* 2010;117(1):86-92.

Dell’Omo R, Mura M, Lesnik Oberstein SY, Bijl H, Tan HS. Early simultaneous fundus autofluorescence and optical coherence tomography features after pars plana vitrectomy for primary rhegmatogenous retinal detachment. *Retina Phila. Pa* 2012;32(4):719-28.

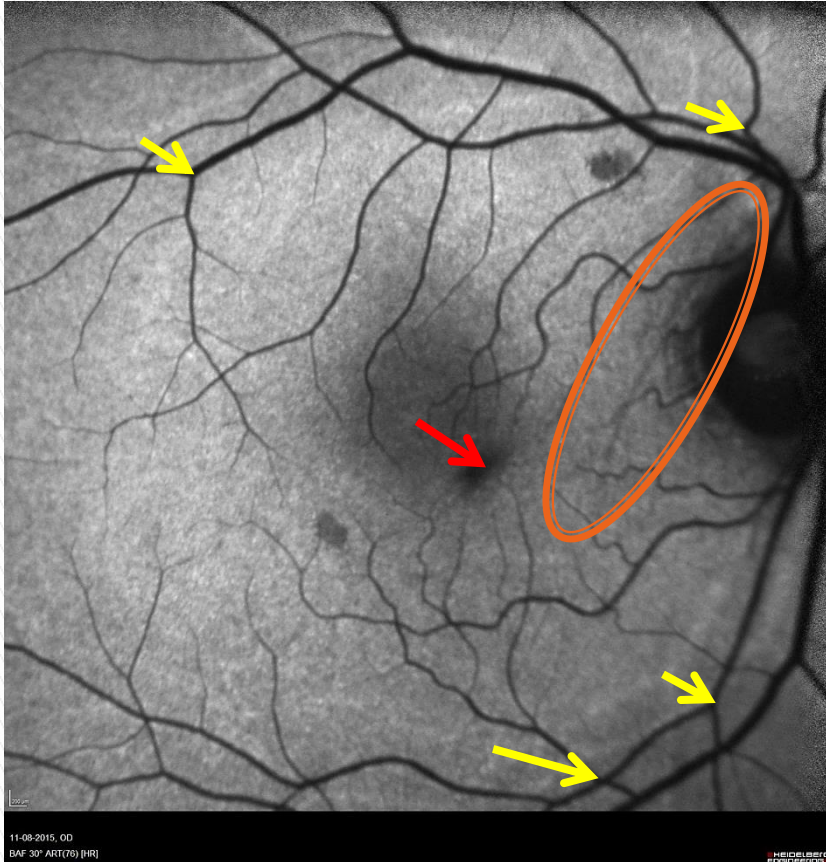
The Clinical Case

- ▶ 64yo female patient,
 - 24h after RE cataract surgery
 - Refers VA loss of RE
- ▶ VA = light perception
- ▶ IOP = 37 mmHg
- ▶ Fundus Exam
 - Inferior retinal Detachment
 - Off-Macula
- ▶ Submitted to PPV in 48H
- ▶ 24H after PPV
 - IOP 22mmHg; Applied retina 4Q
- ▶ 1M after PPV
 - RE VA = 20/125; IOP 15 mmHg
 - Refers some confusion using both eyes
- ▶ 2M pós-VVPP
 - RE BCVA = 20/50
 - Refers extreme confusion using both eyes

SD-OCT + BFAF

Results	SLO Image (Changed to highlight vascular network)	Macular Thickness	Changes in vascular network position
Before RD			 <p data-bbox="1595 328 1750 366">+473 μm</p> <p data-bbox="1595 437 1750 476">-170 μm</p>
After PPV			 <p data-bbox="1595 536 1750 574">-256 μm</p> <p data-bbox="1595 639 1750 678">-161 μm</p>
	<p data-bbox="484 809 794 918">It's evident that the vascular network has changed</p>	<p data-bbox="832 809 1203 956">We can see that retinal thickness has increased and foveal depression isn't present</p>	<p data-bbox="1244 809 1760 918">We can confirm that the retina is stretched vertically and retracted horizontally</p>

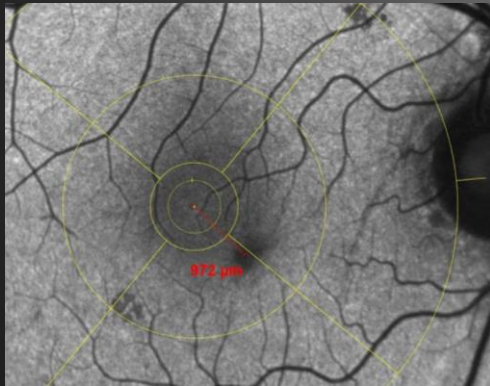
▶ Results – Blue Autofluorescence Findings



- Retinal Vessel Printings
 - The yellow arrows show the “movement” of the vessels (the previous position is evident as a hyperautofluorescent vessel)
- Retinal Fold
 - the orange area shows a line of decreased autofluorescence, result of an outer retinal fold
- Macular translocation
 - It can be observed a centered decreased autofluorescence circle with a darker inferior/nasal decentered decreased autofluorescence spot (macular pigment)

Discussion

Changes in autofluorescence caused by retinal vessel printings and outer retinal folds were found in the literature, but we didn't find anything related to macular translocation.



According to the literature, (HintonAndrew et al., 2013), the central area of decreased autofluorescence (blue) is caused by macular pigment absorption, but in this case, we can see that macular zone is quite abnormal, with the usual decreased autofluorescence circle (macular zone) but with a darker and inferior decentered decreased autofluorescence spot (macular pigment).

We believe that the macular area of decreased autofluorescence, in addition to the absorption by the macular pigment, has also an RPE cause. This decenteration of the macular pigment might be useful in quantifying macular translocation.