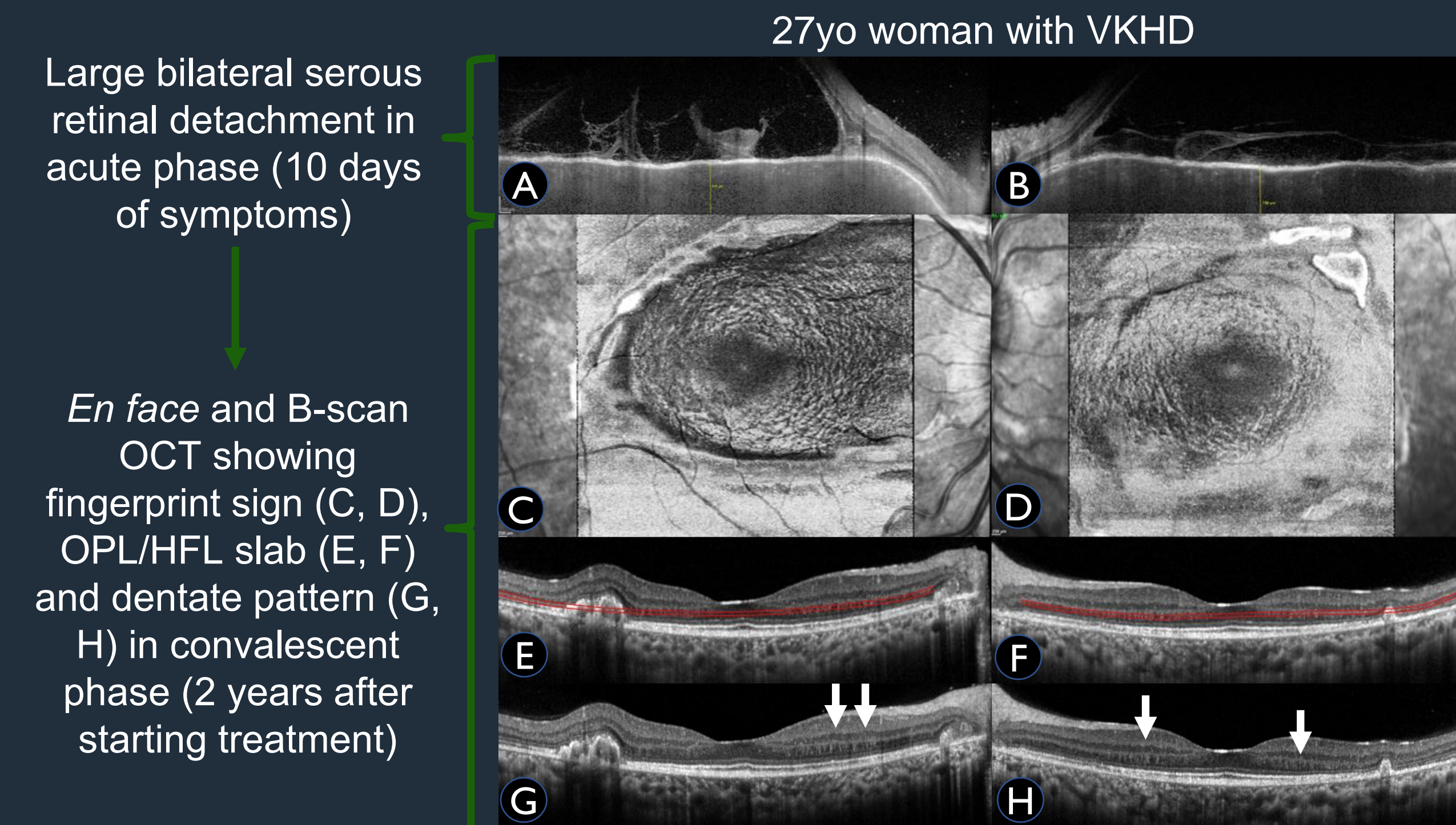# Dentate pattern of the outer plexiform layer (OPL)/Henle fiber layer (HFL) interface in Vogt-Koyanagi-Harada disease (VKHD): a longitudinal analysis of 66 eyes

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Introduction

- VKHD is a granulomatous autoimmune disease that affects melanocytes

- Ocular involvement, characterized primarily by stromal choroiditis, is its most important feature

- Dentate pattern is a macular B-scan optical coherence tomography (OCT) finding that consists of a hyperreflective tooth-like appearance in the interface between OPL and HFL

- This pattern is believed to be caused by tractional forces applied irregularly to the retina generating disruption of the photoreceptor axons and their associated Müller cells

- Corresponding concentric macular rings in *en face* OCT of the same layers, denominated Fingerprint sign, can be seen in eyes with dentate pattern

- Our study aims to report the frequency of dentate pattern and its associations with other OCT findings and clinical outcomes in patients with VKHD

27yo woman with VKHD

Large bilateral serous retinal detachment in acute phase (10 days of symptoms)

En face and B-scan OCT showing fingerprint sign (C, D), OPL/HFL slab (E, F) and dentate pattern (G, H) in convalescent phase (2 years after starting treatment)

Methods

33 PATIENTS (66 EYES)

RETROSPECTIVE COHORT

FOLLOW-UP

ACUTE ONSET → AT LEAST 1 YEAR

BASELINE (M0), MONTH 1 (M1), M3, M6, M9 and M12 after starting treatment

SYSTEMATIC CLINICAL EXAM AND IMAGING (Spectralis® HRA + OCT)

- Generalized estimating equations of binomial distribution and logit link function with interchangeable correlation between eyes and moments were carried out

- The study was approved by the Institutional Ethics Committee.

Results

- Dentate pattern was present in 81.8% of eyes in the first year

- The average detection time of these lesions was 5.2 months (1 to 12 months)

Characteristics	
Gender (M/F)	4/29
Mean age at diagnosis (years)	33.6 ± 10.8
Time from symptoms to treatment start (days)	24.5 ± 16.0
Treatment type in acute phase (S, S+IMTe, S+IMTl)	S= 10 (30.3%) S+IMTe= 11 (33.33%) S+IMTl= 12 (36.4%)

Table 1. Demographic and clinical characteristics. Continuous variables are described as mean ± standard deviation; M = male; F = female. S= high-dose steroids; S+IMTe= steroids + early immunosuppressive therapy (IMT); S+IMTl= steroids + later immunosuppressive therapy (IMT).

- Significant associations occurred between the presence of dentate pattern and better visual acuity (VA) at M1 (median 0.175 vs 0.35 logMAR; p=0.006) and M12 (median 0 vs 0.14 logMAR; p=0.004) and greater CT at M1 (473.5 vs 352.5; p=0.031)

- Eyes with dentate pattern had worse initial indocyanine angiographic scores and evolved with more fibrosis and *sunset glow fundus,* without statistical significance

	Dentate pattern (number of eyes)		
	Present (n=54)	**Absent (n=12)**	**p**
Visual acuity, logMAR, median (range)			
M0	1.8 (0-2.3)	1.4 (0-2.3)	0.832
M1	0.175 (0-2)	0.35 (0-2.3)	**0.006¶**
M12	0 (0-0.7)	0.14 (0-0.4)	**0.004¶**
Subfoveal choroidal thickness, μm, median (range)			
M1	473.5 (222-784)	352.5 (218-594)	**0.031¶**
M3	356 (205-981)	327.5 (274-532)	0.636
M6	353.5 (208-797)	413 (203-501)	0.791
M9	357 (243-650)	367.5 (163-523)	0.612
M12	341 (122-762)	281 (152-450)	0.261

Table 2. Association of dentate pattern OCT finding with functional and structural characteristics in VKHD patients. M: month(s) since disease; ¶Generalized estimating equations (GEE) of binomial distribution and logit link function with interchangeable correlation between eyes and moments
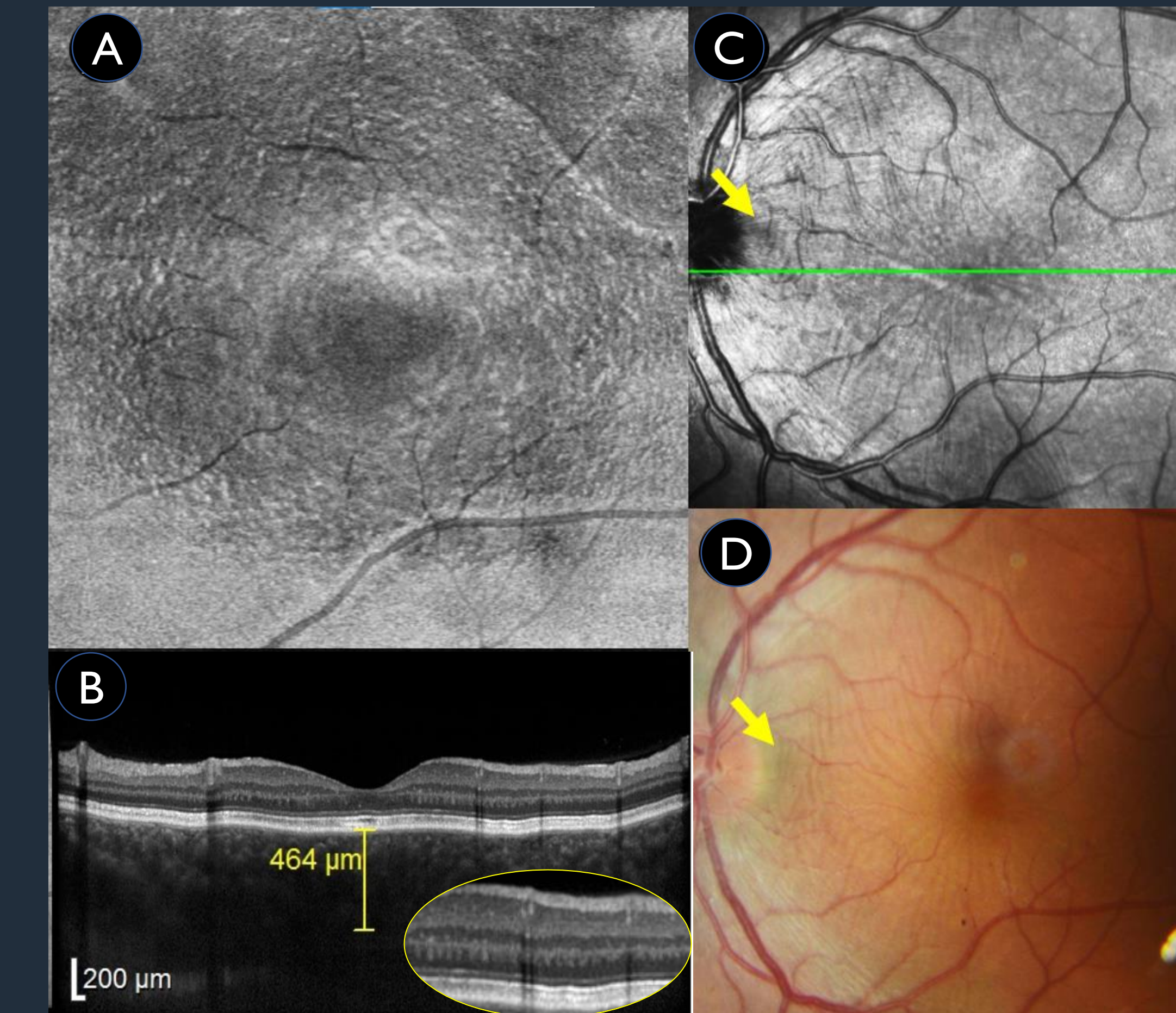

Figure. Woman, 42yo. Non-acute *en face* OCT with *fingerprint sign* at M6 (**A**); OCT B-scan at M6 shows the dentate pattern and thickened choroid (**B**); Infrared imaging (**C**) and fundus photography shows the Paton's folds (yellow arrows) (**D**) at M0.

Discussion

- Dentate pattern is a common finding during the first year of VKHD and was associated with better long-term visual acuity

- This pattern might result from a protective mechanism that prevents force vectors on the vertical axis from pulling on the foveolar cones, preserving their integrity and central vision

- Tooth-like lesions at the OPL/HFL junction were described in different macular diseases, but it is unclear whether they all have a common pathogenesis and prognostic value

- The longitudinal aspect and correlations shown in our study can help understand these findings. The small sample size and overall good final VA may have limited the associations found

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