

*Research Article***Optical coherence tomography findings in Vogt-Koyanagi-Harada disease.****Yehia M. Khairat, Azza A. Shehab, Ahmed M. Sabry, Heba R. Atallah and Rasha S. Gamal El-Deen**

Department of Ophthalmology, El-Minia Faculty of Medicine

Abstract

Purpose: To prospectively study optical coherence tomography findings in Vogt-Koyanagi-Harada disease (retinal, choroidal and peripapillary retinal nerve fiber layer). **Methods:** Forty eyes of twenty five patients of Vogt-Koyanagi-Harada disease included to investigate changes occur in the macula, choroid and RNFL using spectral domain OCT. **Results:** Central subfoveal thickness (CSFT) was 608.9 ± 236.2 , Choroidal thickness was 429.9 ± 38.4 and average RNFL was 100.7 ± 14 . serous retinal detachment represents 60% while mixed type represents 40%. **Conclusion:** Vogt-Koyanagi-Harada disease causes increased choroidal, macular, and RNFL thickness.

Keywords: Vogt-Koyanagi-Harada, RNFL, macula, choroid.**Introduction**

VKH syndrome is an uncommon multisystem disease of presumed autoimmune etiology that is characterized by chronic, bilateral, diffuse, granulomatous panuveitis with accompanying integumentary, neurologic, and auditory involvement⁽¹⁾.

Posterior segment manifestations of Vogt-Koyanagi-Harada (VKH) disease are the earliest and extensively studied findings by OCT; Subretinal fluid (serous retinal detachment), intraretinal cystoid spaces in the outer retina, membranous structures (septa), and choroidal thickening.

Patient and methods

Twenty eyes of fifteen patients of VKH disease to investigate changes occur in the macula, choroid and RNFL using spectral domain OCT.

Careful history taken, visual acuity assessment, anterior segment (using slit lamp examination) and posterior segment examination (fundus examination, F.A, and OCT).

Results

CSFT was 608.9 ± 236.2 , Choroidal thickness was 429.9 ± 38.4 and average RNFL was 100.7 ± 14 . serous retinal detachment represents 60% while mixed type represents 40%.

Table 1: Mean±SD of CSFT, cube average thickness, choroidal thickness and average RNFL in VKH disease.

OCT parameter	Mean ± SD	Range
CSFT	608.9 ± 236.2	305-1116
Cube average thickness	445.5 ± 133.2	281-762
Choroidal thicknes	429.9 ± 38.4	370-481
Average RNFL	100.7 ± 14	88-130

Table 2: Macular edema type in Vogt-Koyanagi-Harada.

Macular edema type	
SRD	6 (60%)
Mixed	4 (40%)

Table 3: Outer retinal layers affection in Vogt-Koyanagi-Harada.

Outer retinal layer	
ELM disruption	
Intact	1(10%)
Disrupted	9(90%)
ISOS disruption	
Intact	2(20%)
Disrupted	8(80%)
COST disruption	
Intact	2(20%)
Disrupted	8(80%)
RPE changes	
Intact	2(20%)
Disrupted	8(80%)

Discussion

In 2012, Nakayama M et al, found that eyes with new onset acute disease manifest markedly increased choroidal thickness this agrees strongly with our study⁽³⁾.

Fong et al, in 2011 studied twelve eyes of six patients with acute and chronic VKH and reported a significant increase in choroidal thickness of $424 \pm 50.1 \mu\text{m}$ during the acute stage of the disease with a loss of the hyperreflective dots in the inner choroid. That was the case in our study as we found increased subfoveal choroidal thickness in VKH group which was $429.9 \pm 38.4 \mu\text{m}$. But that was away from Abeir Baltmr et al, who studied EDI-OCT scans during the acute stage of VKH in 2014 and reported a marked increase in the average subfoveal choroidal thickness in sixteen eyes of eight patients ($805 \pm 173 \text{ mm}$)⁽⁴⁾.

In 2016, K.S Shin and his colleagues investigated central macular thickness (CMT) and RNFL in twelve eyes of six

patients with acute VKH disease associated with optic disc swelling and serous retinal detachment and they reported increased CMT and RNFL in initial visits and this agrees with our study as we found CMT $608.9 \pm 236.2 \mu\text{m}$ and average RNFL $100.7 \pm 14 \mu\text{m}$ ⁽⁵⁾.

Olga Garcia-Garcia and her colleagues in 2016 investigated 18 eyes of nine patients of acute VKH and found the mean VA in the VKH group was 0.61 ± 0.3 (range 0.2-0.9) while in our study we found more drop of vision with mean VA was 0.1 ± 0.05 (range 0.1-0.2). They also reported CMT of $427 \pm 314 \mu\text{m}$ which is similar to our results which was $608.9 \pm 236 \mu\text{m}$. Subfoveal choroidal thickness in their study was $667 \pm 258 \mu\text{m}$ but in ours, it was $429.9 \pm 38.4 \mu\text{m}$ ⁽⁶⁾.

In 2009, Gupta et al, used SD Cirrus HD-OCT to study the structural alterations in the retina and RPE corresponding to the choroidal striations seen on FA in the acute

uveitic phase of VKH disease and they observed thickening or irregularity of the IS/OS junction in all eyes with acute VKH disease⁽⁷⁾.

Fong et al. in 2011, used EDI SD OCT to examine the choroid of VKH patients in the acute and convalescent stages and to compare the findings with control subjects. The authors observed multiple hyperreflective dots in the inner choroid that increased in number towards the Bruch membrane in normal control eyes and speculated that these hyperreflective dots represent cross-sectional views of parallel-lying pericapillary arterioles and venules. EDI SD OCT highlighted a reduction of inner choroidal hyperreflective foci in VKH patients in the acute and convalescent stages of the disease. In our study cases we could hardly see few hyperreflective foci in the inner choroid⁽⁴⁾.

References

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