Prechoroidal cleft characteristics in neovascular age-related macular degeneration

Dr. Naama Lippin, Dr. Alexander Rubowitz , Dr. Einav Baharav, Prof. Ori Segal

Purpose and background:

Certain OCT features, like retinal pigment epithelial detachment (PED), are linked to the progression of neovascular age-related macular degeneration (nAMD). The prechoroidal cleft (PCC), a hyporeflective space beneath the PED, is observed in 8.1% to 22% of cases. Studies show PCC often enlarges with macular neovascularization (MNV) and reduces after anti-VEGF treatment,and in some researches indicating a poor prognosis, with increased risk of RPE tears and subretinal hemorrhage. However, its impact on visual acuity is debated, and the formation mechanism remains unclear. This research aims to describe the **behavior of PCC as a spectrum**, evaluating its correlation with other OCT features and assessing its **relationship with visual acuity and prognostic outcomes**.

Methods and Results:

- Analyzed 81 eyes of 80 patients with PCC.
- Average follow-up duration: 45.8 ± 31.8 months.
- Average anti-VEGF injections per patient: 27.01 ± 23.31.
    - 37 patients – only Bevacizumab.
    - 44 patients switched to other therapies.
- Average patient age at presentation: 79.93 ± 8.01 years.
- Average visual acuity at presentation: 0.64 ± 0.51 LogMAR.
- No significant correlation found between PCC cleft depth and BCVA.
- **Cleft length showed correlation with BCVA.**
- Identified a spectrum of PCC behavior: Passive structural formations due to traction from enlarged PEDs. Cases indicating exudative processes.
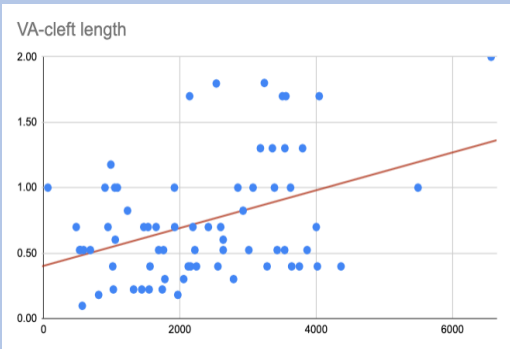
VA-cleft length

A **longer cleft** was significantly correlated to **worse visual outcomes**

Time after cleft appearance	VA 3M	VA 6M	VA 12M	FINAL VA
Cleft length at appearance	0.2287 p=0.054	0.4025 p=0.00045	0.2953 p=0.0116	0.2596 p=0.0338

Dec, 2022- 6/15

Nov, 2023- 6/12

Sep, 2024- 6/12

Conclusion: A spectrum of behavior

In our extensive follow-up at the retina clinic, involving 81 eyes with prechoroidal cleft, 44 clefts exhibited a biconcave shape (as exemplified by the case on the right), while 23 were either dome-shaped or flat. Any cleft observed with a biconcave shape at any point during the follow-up was classified as biconcave. The two populations exhibited distinct behaviors. The biconcave group presented with poorer visual outcomes and a trend towards worse baseline visual acuity. On average, the biconcave group received 29.9 injections, compared to 24.1 injections in the other group, over periods of 1,464 days and 1,377 days, on avarage respectively. **Final visual acuity differed significantly** between the groups, with a logMAR of 0.8 for the biconcave group and 0.6 for the flat group (p=0.40).

Mar, 2015 – 6/15

Apr, 2015- 6/18

June 2015- 6/45