Long-Term Outcomes of Bacillary Layer Detachment in Neovascular Age-Related Macular Degeneration

- **Purpose**: To evaluate the clinical characteristics, multimodal imaging features, and long-term treatment outcomes of eyes with neovascular age-related macular degeneration (nAMD) and bacillary layer detachment (BALAD) treated with intravitreal anti-VEGF therapy.
- **Study Design**: Retrospective, longitudinal case series.
- **Participants**: 30 treatment-naive patients with nAMD showing BALAD on optical coherence tomography (OCT) and undergoing anti-VEGF therapy.
- **Methods**: Clinical records and multimodal imaging results were reviewed for up to 4 years after diagnosis.
- **Main Outcome Measures**: Best-corrected visual acuity (BCVA) values over time, cumulative risk of subretinal fibrosis, and associated risk factors assessed using Cox regression analyses.

Results:
- **Macular Neovascularization (MNV) Subtypes**:
  - Type 1: 63%
  - Type 2: 27%
  - Mixed Type 1 and 2: 3%
  - Type 3: 3%
  - Aneurysmal Type 1: 3%

- **Visual Acuity Outcomes**:
  - BCVA significantly improved after the anti-VEGF loading phase (Snellen equivalent: from 20/118 to 20/71, P = 0.03).
  - However, BCVA returned to baseline levels at 4 years (Snellen equivalent: 20/103, P = 0.6).

- **Cumulative Risk of Subretinal Fibrosis**:
  - The cumulative risk of subretinal fibrosis was **77%** at 4 years.

- **Risk Factors for Subretinal Fibrosis**:
  - Hemorrhagic BALAD: Adjusted hazard ratio (aHR) = 2.02 (95% CI: 1.54–3.22, P < 0.01).
  - Presence of subretinal hyperreflective material: aHR = 1.83 (95% CI: 1.35–3.14, P < 0.01).

Conclusions:
- BALAD was observed in association with all types of MNV in patients with nAMD.
- Long-term observation revealed poor functional outcomes due to the high risk of subretinal fibrosis.
- Early identification of risk factors such as **hemorrhagic BALAD** and **subretinal hyperreflective material** may help guide treatment strategies to mitigate fibrosis progression.

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