

Introduction

- Irvine-Gass syndrome** is a common post-cataract complication (1–2% clinically significant).
- Pathophysiology: Multifactorial inflammatory origin; surgical trauma releases mediators like VEGF, impairing the blood-retinal barrier.
- Management: Typically topical NSAIDs/steroids; refractory cases use anti-VEGF or intravitreal steroids.

References

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Case Details

- 75-year-old male, **12 weeks post-uncomplicated cataract surgery (LE)**.
- Visual deterioration (**VA 6/24-1**).
- Significant CMO** with Central Macular Thickness (CMT) of **717µm**.
- No ophthalmic treatment** was initiated due to a **concurrent diagnosis of primary lung adenocarcinoma**.

Oncological Treatment For Lung Cancer

- Patient started systemic chemotherapy: **Pembrolizumab, Pemetrexed, and Carboplatin**.
- Received **3 cycles over 3 months**.
- Pembrolizumab is an **immune checkpoint inhibitor (ICI)** which uses monoclonal antibodies to target the **programmed cell death protein 1 (PD-1)**.

3 months following pembrolizumab treatment

Baseline CMT: 717µm
Post-Pembrolizumab CMT: 289µm
Reduction: -428µm (approx. 60%)

One day following the third cycle of **Pembrolizumab-containing chemotherapy**, the patient returned for ophthalmic review.

Key Finding: Complete resolution of CMO without any topical or intravitreal ocular therapy.

Proposed Mechanisms

Mechanism 1: Immune Modulation
Through the regulation of the immune microenvironment, pembrolizumab may have contributed to the **reduction of intraocular inflammation**

Mechanism 2: Vascular Normalisation
ICIs are known to **reduce vascular permeability** and restore the blood-retinal barrier

Conclusion

- This case provides clinical evidence that **ICIs can restore the blood-retinal barrier in Irvine-Gass Syndrome**.
- Further study into these immunotherapies may provide new avenues for **treating refractory retinal vascular conditions**.