JOJ Ophthalmology
ISSN: 2473-5477

Juniper Publishers
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Case Report
Volume 13 Issue 3 - September 2025
DOI: 10.19080/JOJO.2025.13.555864

JOJ Ophthalmol

Postoperative Retinal Fold as a Cause of Prolonged Morbidity: A Case Report

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Submission: September 12, 2025; **Published:** September 23, 2025

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Abstract

Retinal folds are an uncommon but impactful complication following rhegmatogenous retinal detachment (RRD) surgery with gas instillation. We report on a 56-year-old male who developed a persistent macular edema with intra- and subretinal fluid due to leakage from a retinal fold. A combined approach using intravitreal Faricimab and laser retinopexy led to full anatomical and functional recovery, avoiding major revision surgery.

Keywords: Retinal Fold; Macular Edema; Serous Retinal Detachment; Faricimab; Laser Retinopexy; Pars Plana Vitrectomy

Abbreviations: CRT: Central Retinal Thickness; ILM: Internal Limiting Membrane; OCT: Optical Coherence Tomography; PFCL: Perfluorocarbon Liquide; RRD: Rhegmatogenous Retinal Detachment; BSCVA: Best Spectacle Corrected Visual Acuity; WHO: World Health Organization

Introduction

Macular edema is a known postoperative complication of retinal detachment surgery (peak incidence: 30–180 days post-op, 10.6%) as well as cataract surgery [1,2]. While retinal folds are rare [3], they can lead to significant visual impairment and prolonged recovery if not promptly identified and treated. This case report highlights the importance of recognizing retinal fold leakage as the cause of persistent macular edema and outlines a successful minimally invasive treatment strategy.

Case Presentation

A 56-year-old Caucasian male underwent pars plana vitrectomy, endolaser photocoagulation, and gas tamponade for a temporal rhegmatogenous retinal detachment (RRD) in his right eye on 10 October 2024 at another institution. On 22 December 2024, he presented with complaints of persisting blurred vision in the operated eye (BSCVA: OD 0.4). (Table 1) Clinical examination revealed a complicated cataract, mild macular edema and a temporal superior retinal fold. On 20 January 2025, cataract surgery was successfully performed. However, on 15 March 2025, the patient returned with complaints of significantly decreased vision in the right eye (BSCVA: OD 0.2). Optical coherence tomography (Cirrus 5000™) revealed a significant macular edema with intra- and subretinal fluid accumulation (Figure 1a, 1b). Intravitreal Faricimab was administered resulting in some improvement in visual acuity. However, two months later, the patient returned with significantly blurred vision in the right eye. Wide-field imaging and peripheral OCT (Silverstone™) showed internal limiting membrane wrinkling and discreet subretinal fluid emanating from the retinal fold and reaching into the macula. Optical coherence tomography confirmed the recurrence of macular edema (CRT 515µ) and thus the retinal fold was identified as the source of leakage. Laser retinopexy was performed around the fold and followed by a second intravitreal injection of Faricimab (Figure 2a, 2b). This combined approach led to the permanent resolution of the macular edema and complete recovery of visual acuity (Figure 3a, 3b).

Discussion

Retinal folds may involve the inner or outer retina or be full thickness. Whereas serous retinal detachment, cystoid macular edema (peak 30-180days postOP, incid 10.6% [2], epiretinal traction membrane formation and vision reduction due to structural changes are generally not related to surgical technology, retinal folds may result from incomplete drainage of subretinal fluid, incorrect perfluorocarbon liquid (PFCL) volume, insufficient or excessive amount of gas instillation, uneven retinal stretching (especially when ILM is not peeled),

finalizing the procedure before the retina is fully attached or poor postoperative positioning [4,5]. While surgical revision is mostly considered for macular and chorioretinal folds and epiretinal traction membranes [1,3], peripheral folds may respond well to medical resp. laser treatment [1,3]. In the patient reported here, laser retinopexy combined with Faricimab injections provided a successful outcome. Thus, the risks of retinal redetachment and reattachment, which are technically difficult, time-consuming, and provide uncertain results were avoided. However, identifying and addressing the root cause of the condition in a timelier manner could have prevented temporary vision loss and prolonged rehabilitation.

Table 1: Chronological events resulting in resolution complications of a of retinal fold.

22 December 2024	**OD:** • BSCVA:0.4 • Complicated cataract • Mild macular edema (CRT: OD 360µ OS 347µ) • Superotemporal retinal fold • HbA1c: 6.1%; BP: 144/77 mmHg
20 January 2025	**OD:** • Uneventful cataract surgery with pcIOL implantation • post-op BSCVA: 1.0
15 March 2025	**OD:** • BSCVA drop to 0.2 • massive macular edema with intra- and subretinal fluid (CRT: OD 510µ /+150µ)
19 March 2025	**OD:** • Intravitreal Faricimab injection • BSCVA improved to 0.8 after 2 weeks
25 May 2025	**OD:** • Increase of macular edema with intra- and subretinal fluid (CRT: 515 µ/+13 µ)
29 May 2025	**OD:** • Laser retinopexy around the fold
19 June 2025	**OD:** • Faricimab injection
01 July 2025	**OD:** • CRT reduced to 365 µ; macula reattached • BSCVA restored to 1.0

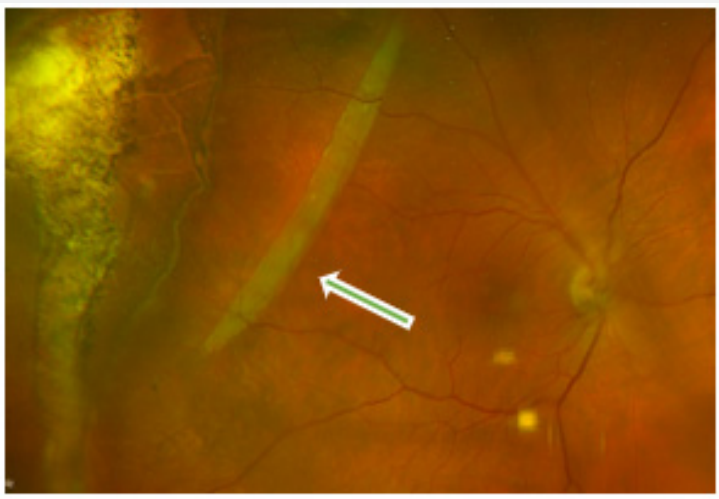

Figure 1a: A 56-year-old man with a history of rhegmatogenous retinal detachment (RRD) surgery on 10 October 2024 and cataract surgery on 20 January 2025 presented on 15 March 2025 with reduced visual acuity. Best spectacle-corrected acuity (BSCA) was 0.2. Fundus imaging reveals a superior temporal retinal fold.

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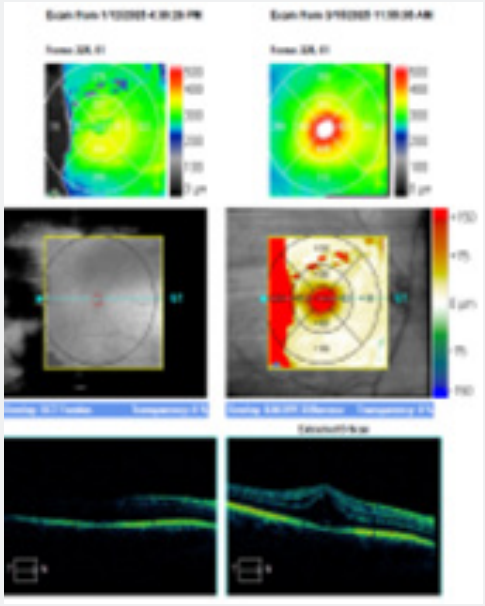

Figure 1b: OCT macula shows massive macular oedema (CRT: 510µ), an intraocular injection of FARICIMAB was administered.

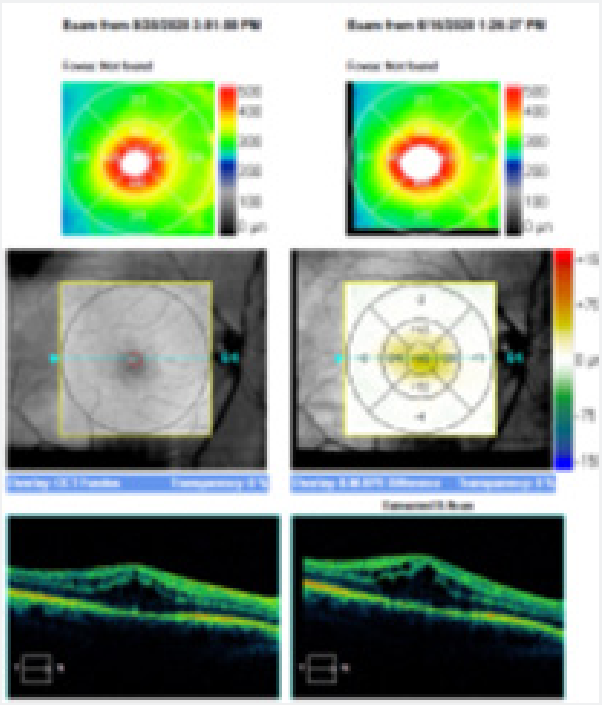

Figure 2a: On 25 May 2025, the patient returned with blurred vision in the right eye following the faricimab injection. OCT macula revealed recurrence of macular oedema (CRT: 515 µ).

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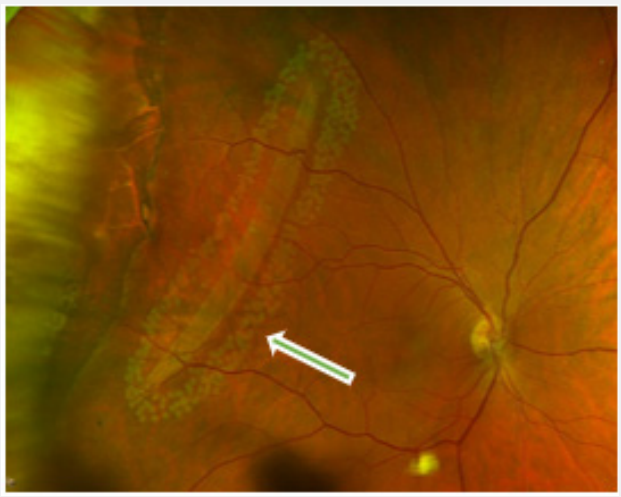

Figure 2b: Recurrent oedema and serous detachment (CRT: 515 µ); retinal fold confirmed as leakage source. Laser retinopexy performed around the retinal fold and second injection of FARICIMAB was administrated on 19th June 2025.

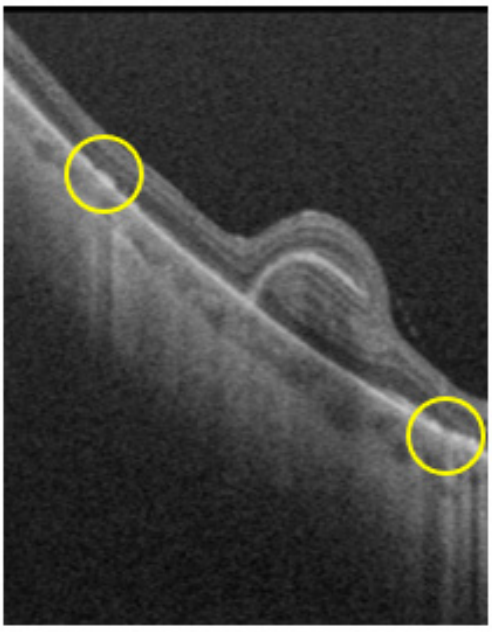

Figure 3a: The patient presented on 1st July 2025 with significant improvement of the vision acuity, OCT of the retinal fold shows the laser scars around it.

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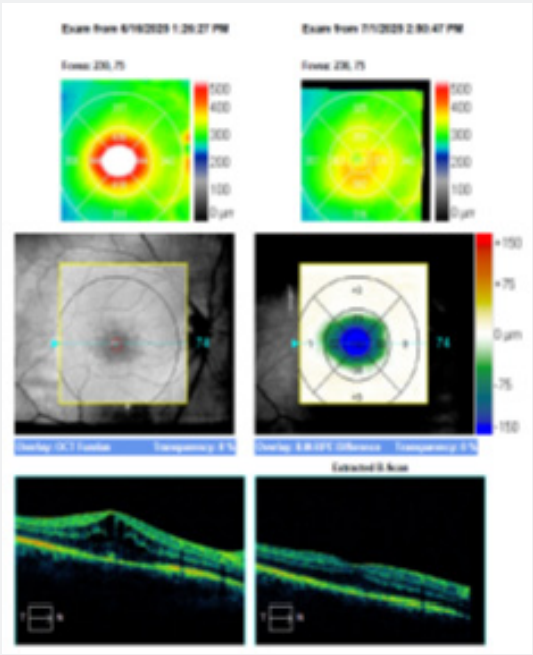

Figure 3b: OCT macula shows in early significant reduction of the macular oedema, CRT 365 µ.

Conclusion

Persistent macular edema following RRD surgery with gas may be due to leakage from a retinal fold. Identifying and treating the underlying cause is essential for optimal recovery. This case demonstrates excellent anatomical and functional outcomes utilizing a minimally invasive approach.

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