

Intravitreal Triamcinolone Acetonide: Reviving Vision in Pseudophakic Cystoid Macular Edema – A Retrospective Case Series

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STRUCTURED ABSTRACT

Background: Pseudophakic cystoid macular edema (PCME) is an important cause of visual impairment following cataract surgery. Chronic or refractory cases may require intravitreal therapy.

Aim: To evaluate the anatomical and functional outcomes of intravitreal triamcinolone acetonide (IVTA) in patients with PCME.

Methods: A retrospective case series of six patients treated with a single intravitreal injection of triamcinolone acetonide (2 mg/0.05 mL) between October 2024 and June 2025. Best-corrected visual acuity (BCVA), central macular thickness (CMT), and intraocular pressure were evaluated before and after treatment.

Results: Five of six eyes demonstrated improvement of at least two Snellen lines. Median LogMAR visual acuity improved from 1.48 to 0.60 ($p=0.028$). Median CMT decreased from 401 μm to 281 μm ($p=0.027$). No serious adverse events were observed.

Conclusion: IVTA is an effective and accessible second-line treatment for chronic PCME, producing significant anatomical and functional improvement.

Keywords: Pseudophakic cystoid macular edema; Irvine–Gass syndrome; Intravitreal triamcinolone acetonide; Central macular thickness; Visual acuity

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INTRODUCTION

Pseudophakic cystoid macular edema (PCME), also known as Irvine–Gass syndrome, remains one of the most common causes of reduced vision following uncomplicated cataract surgery. Although many cases respond to topical therapy, chronic disease may require intravitreal corticosteroid treatment. Intravitreal triamcinolone acetonide provides high intraocular drug concentrations and has demonstrated efficacy in refractory PCME.

MATERIALS AND METHODS

This retrospective case series was conducted in the Department of Ophthalmology, Government Villupuram Medical College and Hospital, from October 2024 to June 2025. Six patients with pseudophakic cystoid macular edema who underwent a single intravitreal injection of triamcinolone acetonide (2 mg/0.05 mL) were included.

Clinical evaluation included best-corrected visual acuity, intraocular pressure measurement, slit-lamp

biomicroscopy, fundus examination, fundus photography, and optical coherence tomography.

Statistical analysis was performed using the Wilcoxon signed-rank test. A p value <0.05 was considered statistically significant.

RESULTS

The majority of patients (66.7%) were aged 61–70 years, and females constituted 66.7% of the study population. At presentation, four patients had visual acuity worse than 6/60. All patients demonstrated increased CMT on OCT.

Following IVTA treatment, no patient remained in the $<6/60$ category. Four patients achieved visual acuity of 6/18 or better. Five of six patients demonstrated a reduction in CMT of at least 100 μm .

Wilcoxon signed-rank analysis demonstrated significant improvement in visual acuity ($p=0.028$) and CMT ($p=0.027$).

DISCUSSION

The present study demonstrated significant anatomical and functional improvement following IVTA in chronic PCME. These findings are consistent with previous studies by Karacorlu et al., Conway et al., Antcliff et al., and Yanyali et al., which reported substantial reductions in macular thickness and improvement in visual acuity after intravitreal corticosteroid therapy. The observed correlation between reduction in CMT and improvement in visual acuity further supports the effectiveness of IVTA.

The principal limitation of this study is the small sample size and retrospective design. Longer follow-up studies are required to evaluate recurrence rates and long-term safety.

CONCLUSION

Intravitreal triamcinolone acetonide is an effective second-line therapy for chronic pseudophakic cystoid macular edema. It provides significant visual and anatomical improvement and remains a cost-effective option in resource-limited settings.

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TABLES

Table 1. Distribution of Patients by Age

Age Group	No. of Patients
50–60 years	1
61–70 years	4
>70 years	1

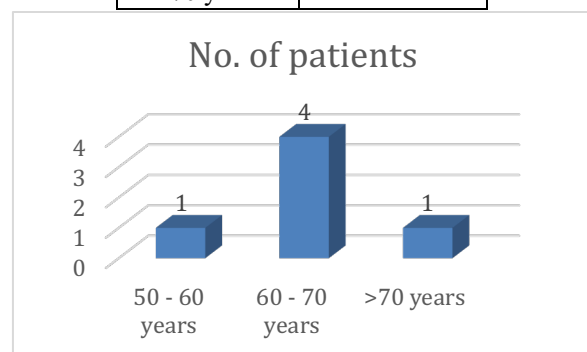


Fig.1. Distribution of Patients by Age

Table 2. Distribution by Sex

Sex	No. of Patients
Female	4
Male	2

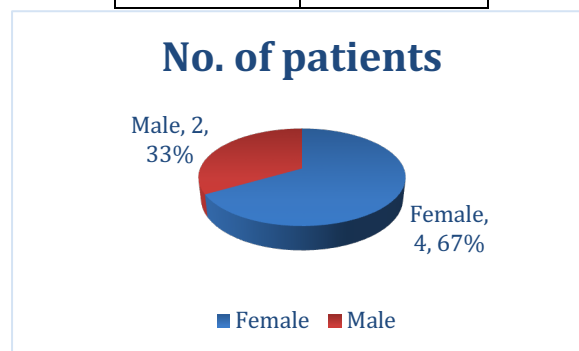


Fig.2.Distribution by Sex

Table 3. Visual Acuity at Presentation

Visual Acuity	No. of Patients
<6/60	4
6/60–6/24	1

6/18–6/12	1
>6/12	0

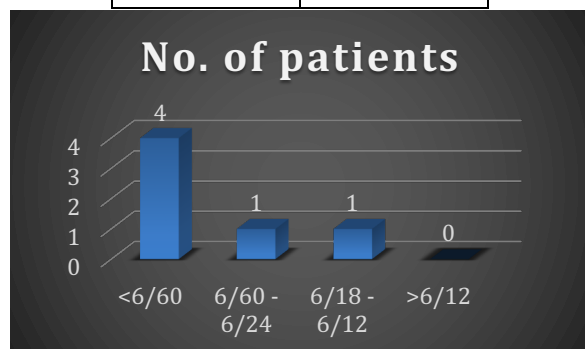


Fig.3. Visual Acuity at presentation

Table 4. Central Macular Thickness at Presentation

CMT	No. of Patients
200–300 μ m	0
301–400 μ m	4
401–500 μ m	1
>500 μ m	1

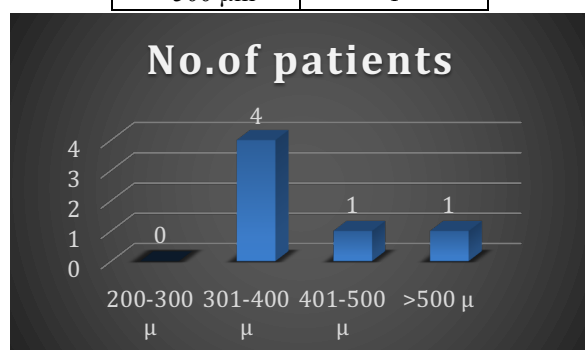


Fig.4. Central Macular Thickness at presentation

Table 5. Visual Acuity Following IVTA

Visual Acuity	No. of Patients
<6/60	0
6/60–6/24	2
6/18–6/12	3
>6/12	1

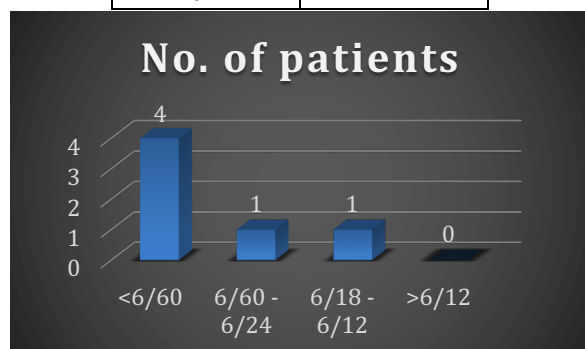


Fig.5. Visual Acuity Improvement following IVTA

Table 6. Reduction in Central Macular Thickness Following IVTA

Reduction	No. of Patients
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<50 μ m	0
51–100 μ m	2
101–200 μ m	3
>200 μ m	1

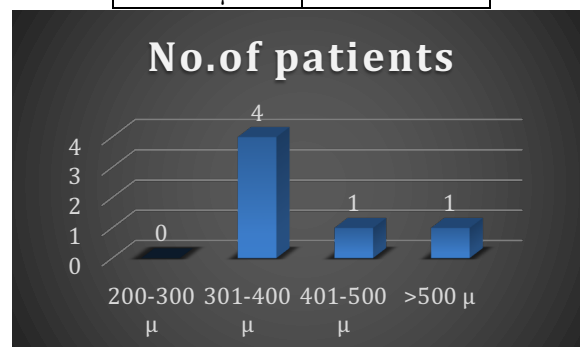
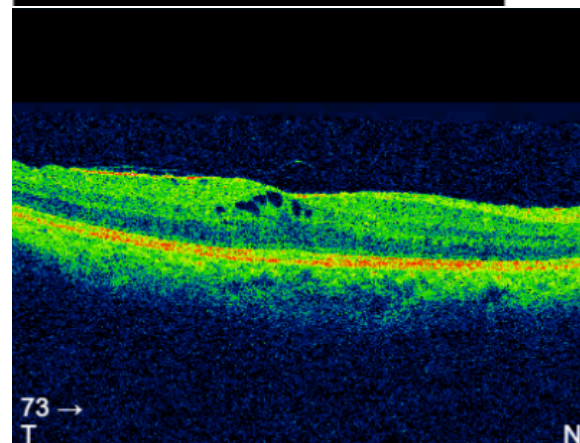


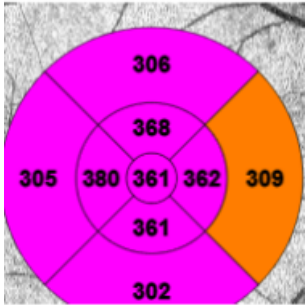
Fig.6. Reduction of Central Macular Thickness following IVTA

Figure Legends

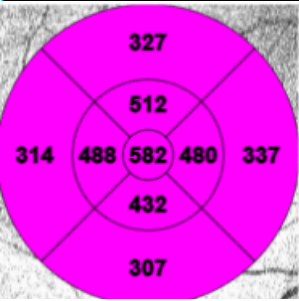
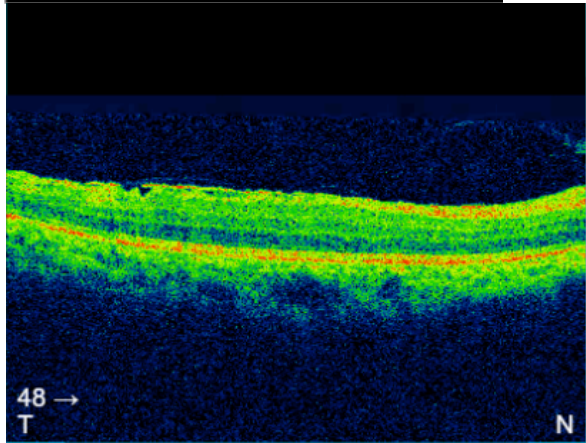
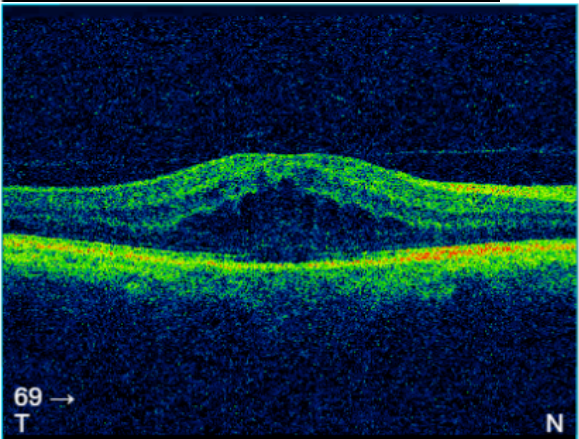
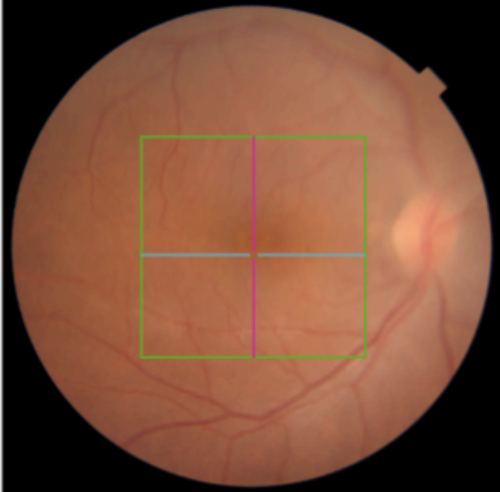
Case 1

Pre procedure





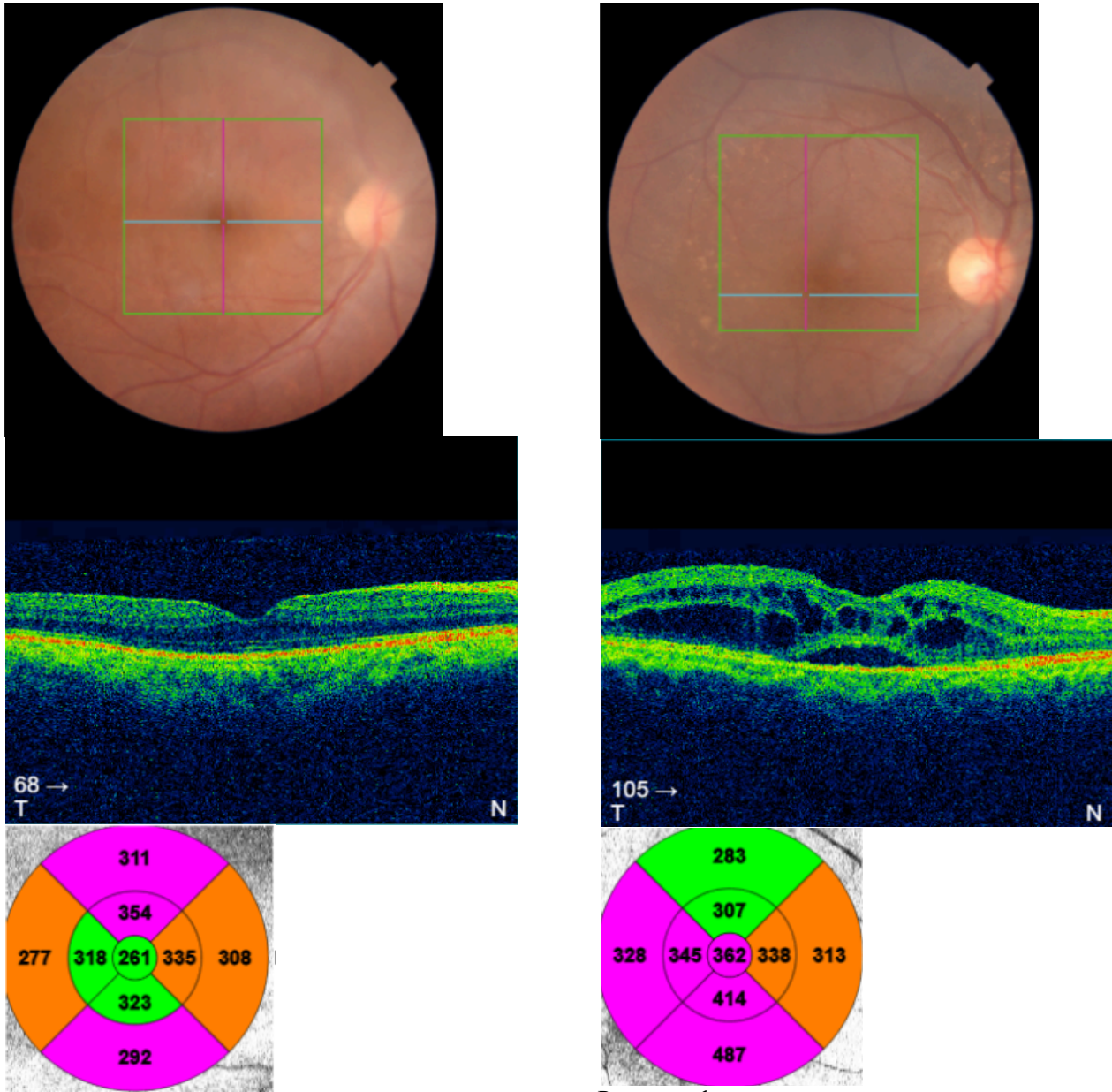
Post procedure



Post procedure

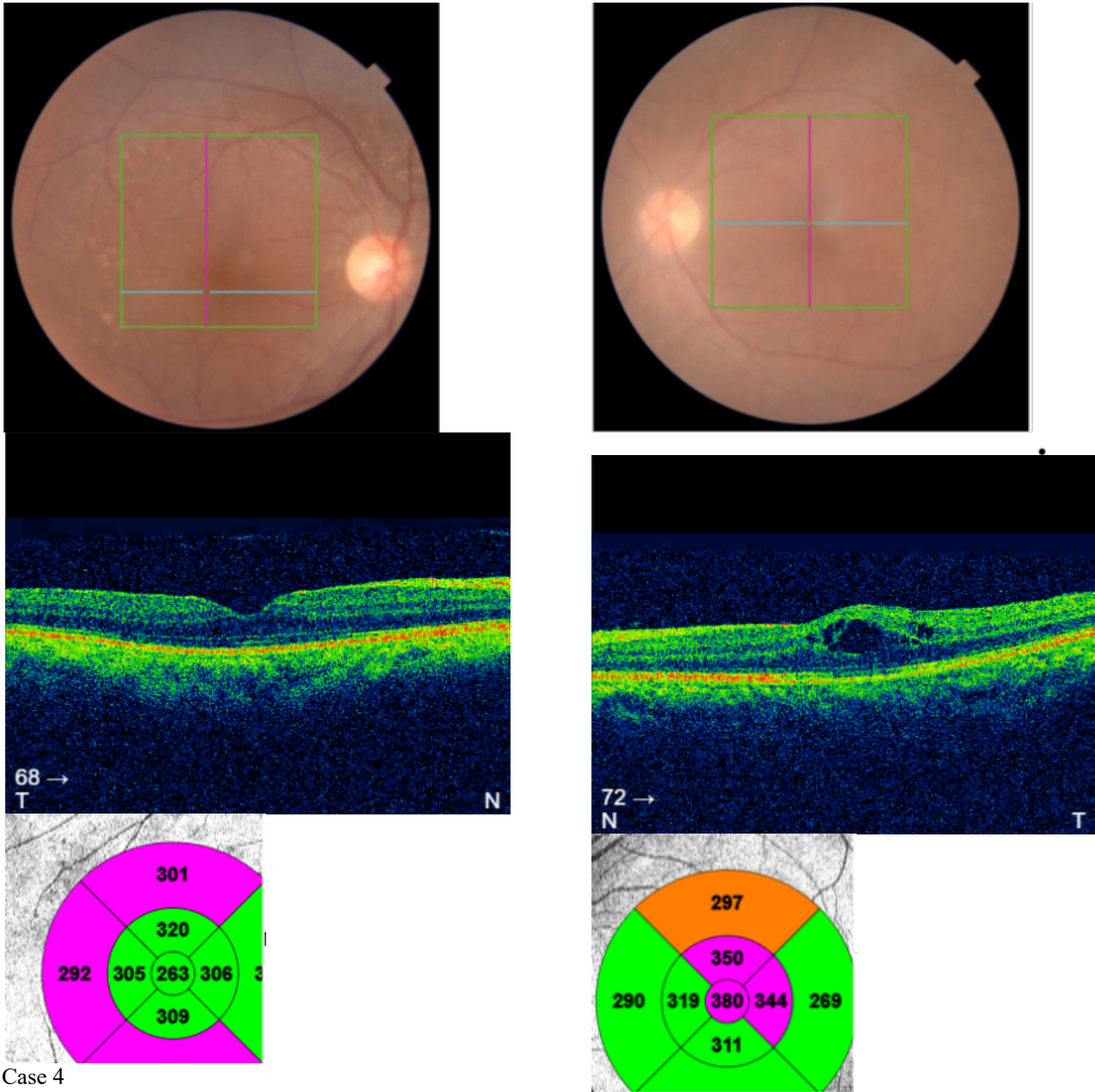


Case 2
Pre Procedure



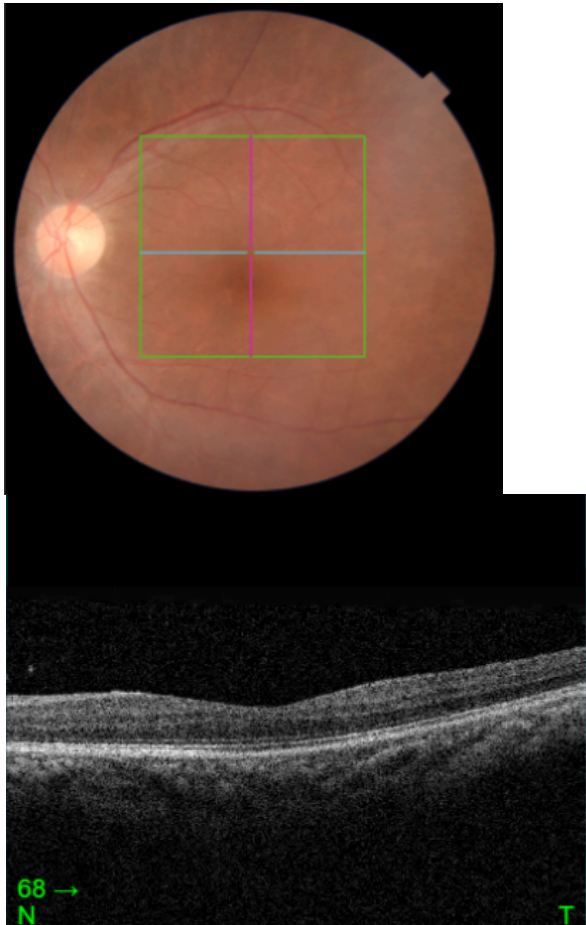
Case 3
Pre pocedure

Post procedure

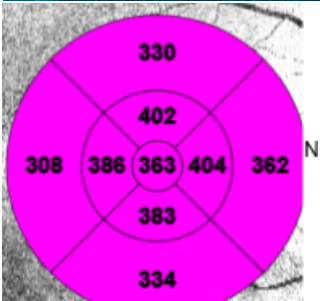
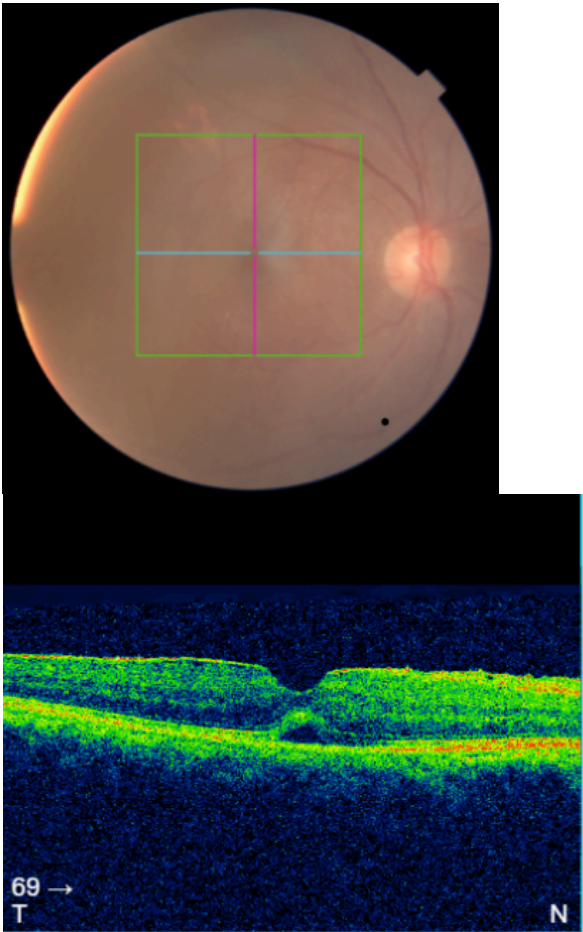


Case 4
Pre procedure

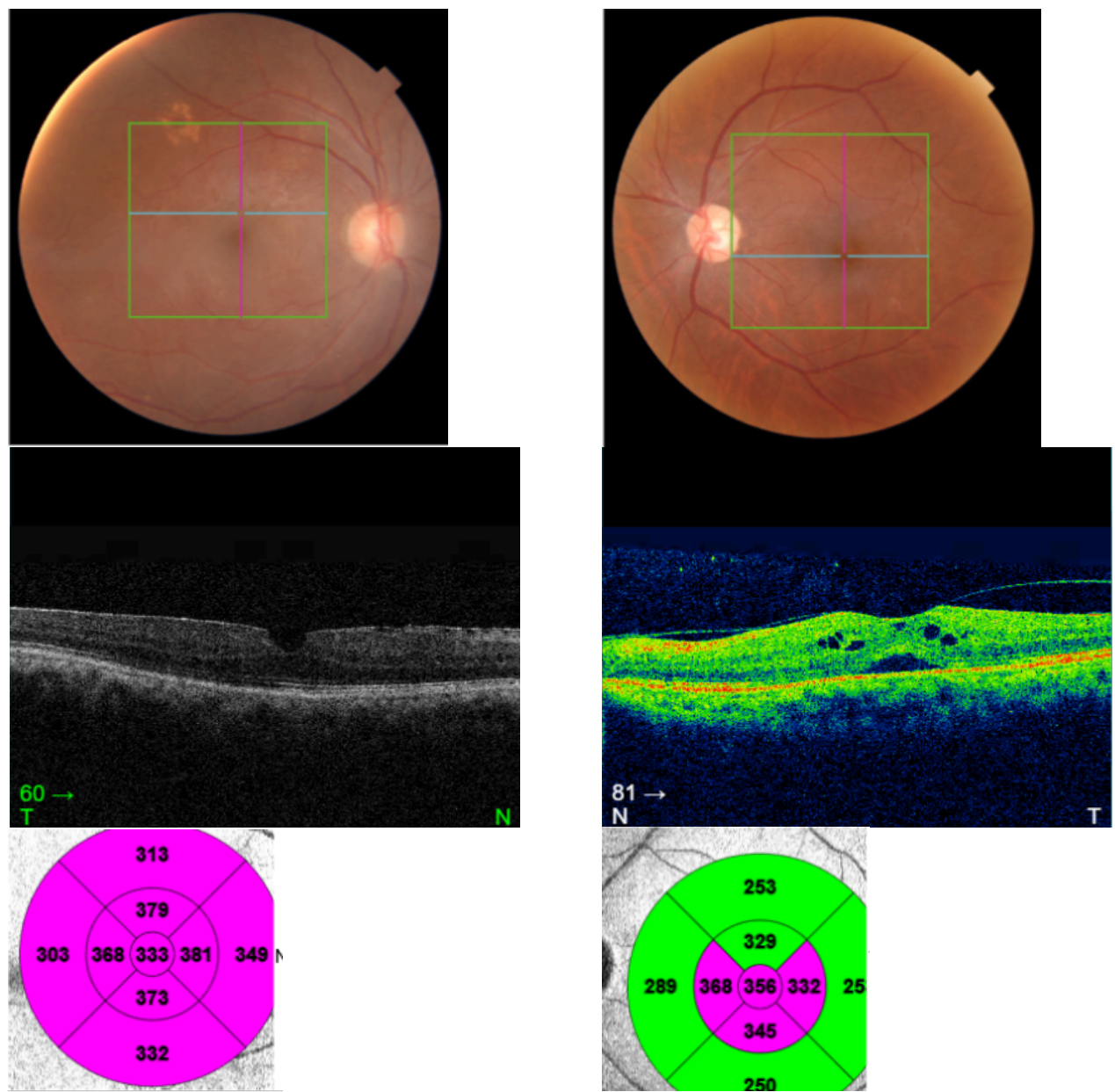
Post procedure



Case 5
Pre procedure



Post procedure



Case 6
Pre procedure

Post procedure

