



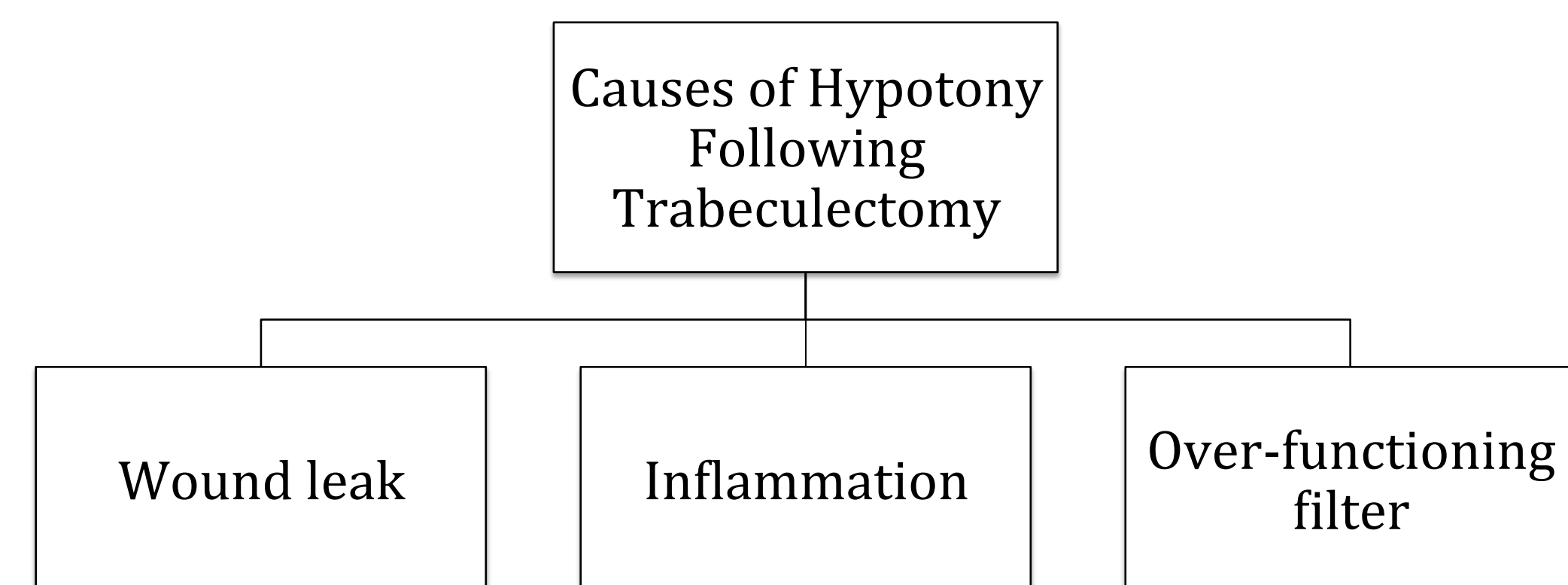
# A Closer Look at Epiretinal Membrane in a Patient with Hypotony

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## BACKGROUND

Hypotony is a condition that arises when the intraocular pressure is too low for adequate anatomical and physiological function of the eye. When the pressure falls below a healthy range, vision can be compromised by keratopathy, cataract formation, flat anterior chamber, choroidal effusion, optic nerve edema, and hypotony maculopathy. Hypotony maculopathy occurs when the scleral wall collapses and causes the choroid and retina to fold inward. It is an uncommon complication of ocular surgery, although there has been an increase in incidence since the use of antifibrotic agents with glaucoma filtration surgery. Specifically, hypotony after trabeculectomy arises from one of three sources:



By assessing the anterior chamber for signs of inflammation and testing for Seidel sign, it can be concluded that the low pressure is secondary to over-function of the filter.

## CASE REPORT

A 65-year-old white male presented for a follow-up for primary open angle glaucoma. He had previously undergone a trabeculectomy in both eyes seven years prior and was no longer taking topical glaucoma medication. Examination revealed the following findings:

	OD	OS
Visual Acuity	20/40	20/40
Intraocular Pressure	2 mmHg	5 mmHg
Optic Nerve	0.60V (I.20, S.20)	0.40V (I.30, S.30) pallid superior rim
Conjunctiva	Large, cystic, functioning blebs OU	
Anterior Chamber	Deep and quiet OU	
Macula	Retinal folds previously thought to be from epiretinal membrane OU	

## CASE REPORT

Optical coherence tomography (OCT) revealed chorioretinal folds consistent with hypotony maculopathy. The patient was started on topical steroids four times a day and atropine once a day in both eyes in an attempt to increase intraocular pressure.

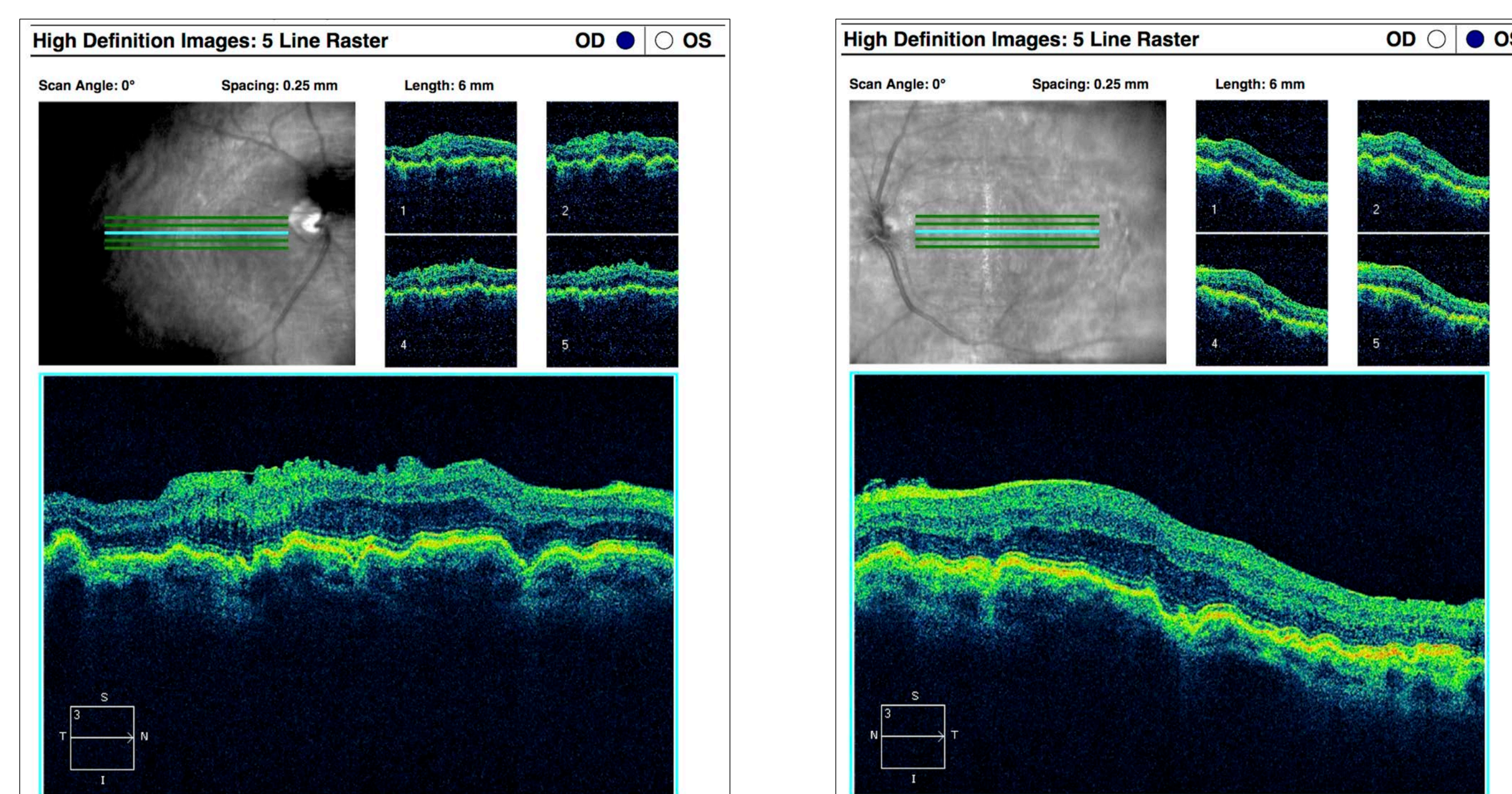


Figure 1 and 2: 5 Line Raster OCT of right eye and left eye demonstrate chorioretinal folds secondary to hypotony maculopathy

## DISCUSSION

Hypotony maculopathy should be considered when retinal folds are observed in a patient with hypotony, especially after glaucoma surgery. The OCT aids in the viewing of both the retina and choroid for proper diagnosis. Before the OCT was available, fluorescein angiography was the primary method of discerning retinal folds from chorioretinal folds in cases of hypotony maculopathy. The OCT has provided a safe and simple method for diagnosis and continued care of patients with hypotony maculopathy.

The single most important risk factor for hypotony maculopathy following glaucoma filtration surgery is scleral rigidity. Younger patients and those that are myopic have thinner and more flexible scleral walls that put them at a greater risk of scleral wall collapse and subsequent chorioretinal folds in the macula. The patient in this case was both myopic and considered to be at a younger age at risk for developing hypotony maculopathy.

The most important factor in treatment is first identifying the cause of hypotony. In patients that have undergone trabeculectomy, the list can be narrowed down to three causes: wound leak, inflammation, or over-functioning filter. In this case, the patient was treated with topical steroids and atropine to reduce any underlying inflammation and to provoke a steroid response to increase the intraocular pressure. Referral back to the surgeon for additional surgical management would also be warranted. Early detection, appropriate management and treatment are essential to preserve vision, as permanent chorioretinal changes can ensue with prolonged hypotony.

## CONCLUSION

This case highlights the importance of considering hypotony maculopathy when epiretinal membrane is observed in patients with particularly low intraocular pressure, especially after glaucoma filtration surgery.

## REFERENCES

1. Akova, Y.A., Dursun, D., Aydin, P., Akbatur, H., Duman, S. Management of hypotony maculopathy and a large filtering bleb after trabeculectomy with mytomycin C: Success with argon laser therapy. *Ophthalmic Surgical Lasers & Imaging*. 2000;31(6): 491-494.
2. Costa, V.P., Arcieri, E.S. Hypotony maculopathy. *Acta Ophthalmologica Scandinavica*. 2007; 85(6): 586-597.
3. Edelson, E. Aggressive treatment often needed for hypotony maculopathy. *Ophthalmology Times*. 2004; 29(19): 19-20.
4. Fannin, L.A., Schiffman, J.C., Budenz, D.L. Risk factors for hypotony maculopathy. *Ophthalmology*. 2003;110(6): 1185-1191.
5. Williams, B.K., Chang, J.S., Flynn, H.W. Optical coherence tomography imaging of chorioretinal folds associated with hypotony maculopathy following pars plana vitrectomy. *International Medical Case Reports Journal*. 2015; 8:199-203.

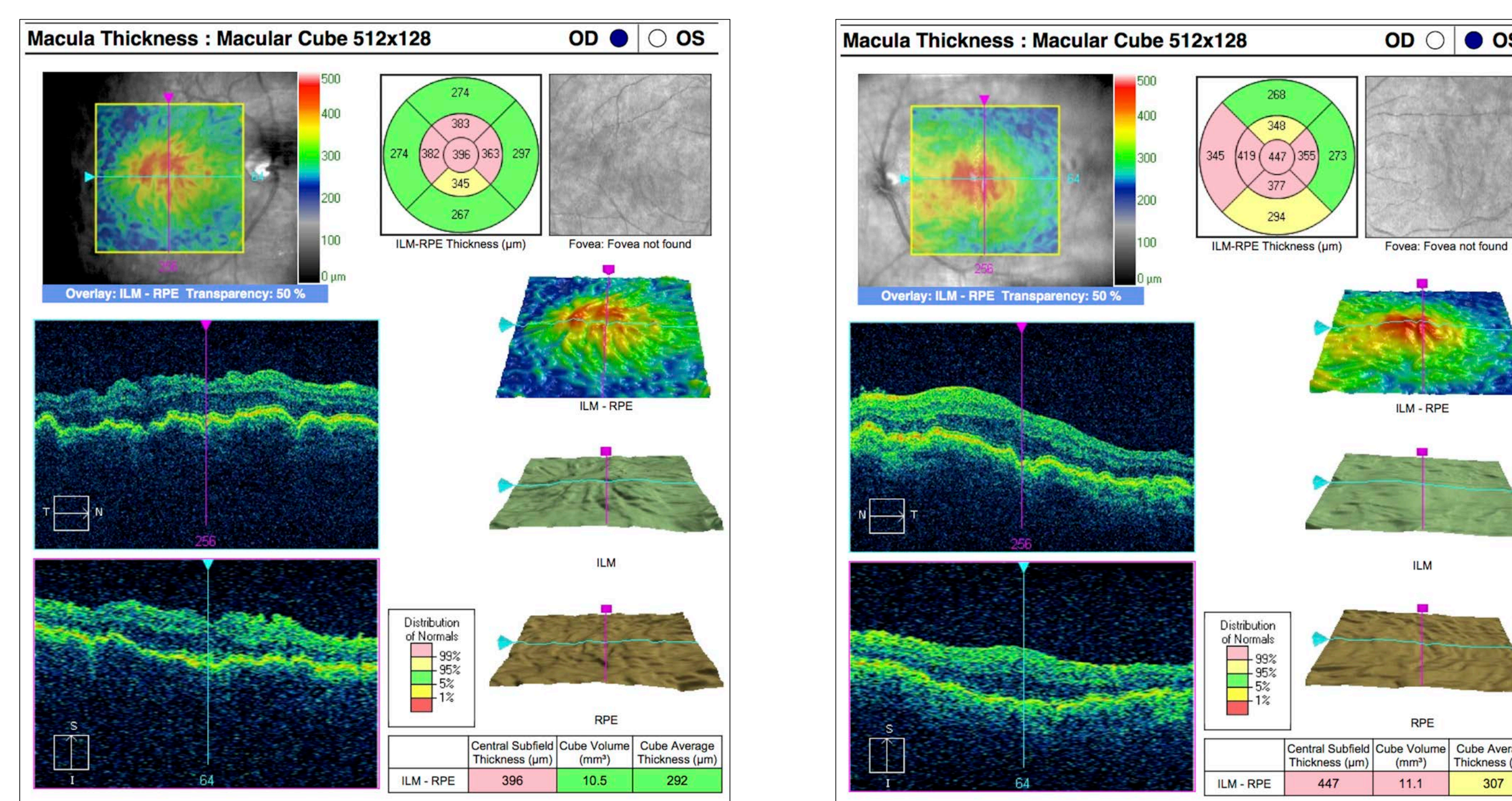


Figure 3 and 4: Macular cube OCT of right eye and left eye show increased macular thickness with chorioretinal folds