Peripapillary Retinoschisis (PPRS) in Glaucoma
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Patient Information

75-year-old Caucasian male
Chief Complaint: near blur

Ocular History:
1. Open angle glaucoma OD>OS
2. Pseudophakia OD, Cataract OS since 06/2017
3. s/p trabeculectomy OD 01/2019

Medical History:
1. Hypertension
2. Diabetes mellitus type 2
3. Neurocognitive disorder

Past Medical History:
1. Asthma
2. Cholelithiasis

Imaging

Optic Nerve Photos 06/2017

Posterior Pole OCT Series:
No presence of PPRS and its resolution by 07/2020.

RNFL OCT Series: Pay attention to the temporal & inferotemporal sectors of the TSNIT

06/2016: No retinoschisis. Very thin IT sector.

06/2017: Notice the intraretinal cystic spaces IT and T sectors.

03/2018: The retinoschisis increased in thickness. IT sector thin.

09/2019: Retinoschisis improves. ST sector continues to thin.

07/2020: Retinoschisis resolved. IT/ITN thinner compared to 2019.

Discussion

Retinoschisis is abnormal splitting of sensory retina.
Differential diagnosis of peripapillary retinoschisis: optic nerve malformation (optic pit, optic nerve coloboma, etc) high myopia, glaucoma, vitreomacular traction. PPRS may be associated with severe glaucoma and faster glaucoma progression. Patients with PPRS may have more advanced and faster progressing glaucoma compared to controls (patient with glaucoma but without PPRS). Patients with glaucoma and peripapillary retinoschisis demonstrate global RNFL thinning, not just thinning within the area of retinoschisis, suggesting it is not directly causative of RNFL damage, but further study is needed. Treatment may include glaucoma surgery. Some studies recommend glaucoma surgery to stabilize IOP and reduce diurnal fluctuation. Others suggest pars plana vitrectomy should be performed, even if there is no visible vitreous traction, and will result in resolution of retinoschisis. If peripapillary retinoschisis involves the macula, vitrectomy should be performed to improve vision.

Exam Findings

Visual Acuity: 20/20 20/20
IOP: 10 mmHg 10 mmHg
Optic Nerve: 0.85 very thin inferior 0.80 thin inferior
Posterior Pole: unremarkable unremarkable, PPRS resolved
RNFL OCT 62um avg, thin IT; borderline thin ST/IN, stable to 2015
62um avg, thin IT (area of resolved PPRS); borderline thin IT; significant superior & inferior thinning from 2015
Macula OCT unremarkable unremarkable, PPRS resolved
HVF 24-2 absolute superior arcuate defect, stable to 2015

depressing of superior arcuate defect compared to 2005 corresponding to region of PPRS

Conclusion

PPRS is associated with severe glaucoma and faster glaucoma progression, but it is unknown if it is causative.

Glaucma patients with peripapillary retinoschisis develop global RNFL thinning not just thinning within the area of retinoschisis, suggesting PPRS does not directly cause RNFL damage, but further study is needed.

Peripapillary retinoschisis may be indicative of large IOP fluctuations, so IOP control should be interpreted with skepticism. Some studies recommend glaucoma surgery. In this patient, despite good IOP control, PPRS resolution revealed confirmed RNFL thinning both within the affected inferotemporal sector and in the superior quadrant.

Bibliography