Acquired tractional retinoschisis with giant outer – layer break underneath macula

Kshitiz Kumar, Santosh Balasubramaniam1, Coimbatore Sekar Geetha1, Amar Agarwal2

Key words: Inner – layer holes, outer – layer break, retinoschisis, schisis-detachment

A 41-year-old female patient of Zambian nationality presented with right eye (RE) best-corrected visual acuity (BCVA) counting fingers ½ meters. Fundus showed clear media, neurosensory detachment with schisis-detachment (SD) with a large outer layer break (OLB) involving the macula. On fundus imaging using Zeiss Visucam camera, the OLB with underlying SD was roughly 5-6 DD in greatest linear dimension, had one edge of the break as scrolled band of tissue attached to the RPE superiorly above the arcade, whereas the other edge was lifted off and attached to inner retina inferiorly as a wavy yellow line. Adjacent to SD was localized retinal detachment upto the inferior arcade and little beyond. Supero-temporal to this schisis—retinal detachment (RD) complex were 3 large inner layer breaks 1-1.5 DD in size. The entire lesion was lifted by a band of fibrovascular tissue running supero – temporally and ending at parsplana [Fig. 1]. No other pathologic finding was seen in the other parts of RE retina or in the left eye (LE) fundus. A diagnosis of acquired tractional retinoschisis as a sequelae of healed idiopathic peripheral occlusive vasculitis was made. Meticulous 25 gauge pars plana vitrectomy (PPV) was done.
with posterior hyaloid dissection followed by transection of fibrovascular band post cautery and then resection of inner schisis cavity was completed. Barrage endolaser around the lesion under perfluorocarbon liquid and silicone oil endotamponade was done to attach the retina [Fig. 2]. Three weeks postsurgery foveal contour was good with complete re-attachment of inner – retinal layers. BCVA improved to 20/120 with + 3.5 DS. After 3 months, silicone oil removal was done. At final visit retina was stable with 20/120 BCVA in OD.

**Discussion**

Acquired retinoschisis (RS) is an abnormal splitting of neurosensory retina at the level of outer plexiform layer with a prevalence of 1.65% to 7%.\(^{1,2}\) OLB usually are round or oval and

---

**Figure 1:** Fundus images of the right eye showing: (a) Montage image of central and supero – temporal quadrant showing the entire retinoschisis - schisis detachment - retinal detachment complex with tractional fibrovascular band, (b) posterior pole image, (c) 3 large inner layer breaks (red arrows), (d) extent of large outer layer breaks (blue arrows), (e) extent of schisis-detachment below the outer layer breaks (blue arrow) and (f) extent retinal detachment beyond schisis-detachment underneath macula

---

**Figure 2:** Intra operative photos captured on smartphone from TV monitor showing (a) Parsplana core vitrectomy, (b) Peripheral and shave vitrectomy, (c) endodiathermy to inner layer breaks and the fibrotic band, (d) trans-section of fibrotic band by cutter, (f) PFCL injection to flatten retina and (g) Barraged retinoschisis with flattened retina following silicone oil injection
measure 1–3 disk diameters and have a prevalence of 11–24%.[3]

Excluding this case, only 9 known instances of giant (>3DD) OLB have been reported in RS but none underneath macula.[4]

Schisis-detachment results from movement of schitic fluid through outer layer breaks to cause an area of localized retinal detachment. Mostly it is asymptomatic as the typical behavior of schisis-detachment is that only a limited amount of fluid passes into the subretinal space, probably because of the very viscous nature of the intracytic fluid. However, especially if very large outer layer break occurs, progressive retinal detachment results as evident in this case. The ratio of the occurrence of asymptomatic “schisis-detachment” to the progressive symptomatic variety which requires surgery is about 17:8 to 1.[3] RS with progressive, frank, RD is a rare complication affecting 1 in 2000 patients associated with breaks in both layers, or with only outer layer breaks.[1,3] Surgical intervention in the form of PPV is indicated for RS with progressive RD and for SD with rare posterior extension of schitic fluid.[3] This case becomes atypical in its presentation by having a traction element to the RS-SD-RD complex, apart from a rare giant outer layer break underneath macula.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

References
1. Byer NE. Long-term natural history study of senile retinoschisis with implications for management. Ophthalmology 1986;93:1127-37.
2. Buch H, Vinding T, Nielsen NV. Prevalence and long-term natural course of retinoschisis among elderly individuals: The Copenhagen city eye study. Ophthalmology 2007;114:751-5.
3. Byer NE. Perspectives on the management of the complications of senile retinoschisis. Eye 2002;16:359-64.
4. Giansanti F, Bitossi A, Giacomelli G, Abbruzzese G, Giuntoli M, Menchini U. Acquired retinoschisis with giant outer layer break and retinal detachment. Eur J Ophthalmol 2013;23:761-3.