

## Endoillumination (chandelier) assisted scleral buckling for a complex case of retinal detachment

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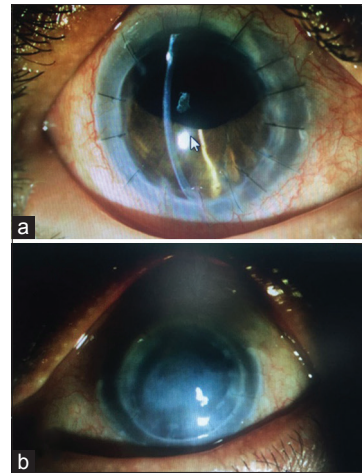
Endoilluminator-assisted scleral buckling combines the advantages of scleral buckling for its external approach and pars plana vitrectomy for its better visual visualization in the management of retinal detachment (RD). It has recently been proven to be safe and efficacious in simple cases. This report discusses successful management of a complex case of RD in a patient with the single functioning eye, where vitrectomy was expected to have a complicated course.

**Key words:** Endoilluminator-assisted scleral buckling, pars plana vitrectomy, retinal detachment

Endoillumination (chandelier) assisted scleral buckling (EASB) is a useful technique employed for management retinal detachment (RD), that combines the advantages of pars plana vitrectomy (PPV) and scleral buckling.<sup>[1,2]</sup> We discuss successful management of a complex case of RD with EASB, where PPV could have been detrimental to visual function.

### Case Report

A 61-year-old female presented with sudden painless loss of vision in the right eye (RE) for 7 days. She had been diagnosed to have bilateral aphakic bullous keratopathy, and penetrating keratoplasty had been done twice in the left eye (LE) and once in the RE 6 months back. Best-corrected visual acuity (BCVA) was hand motions close to face RE and only perception of light LE. Anterior segment revealed a clear corneal graft RE with interrupted sutures *in situ*, while the LE corneal graft had a leukomatous opacity suggestive of graft failure [Fig. 1]. The right pupil was grossly irregular, poorly dilating with superior anterior synechiae [Fig. 1a]. Fundus evaluation RE revealed a fresh total RD without proliferative vitreoretinopathy [Fig. 2a]. Despite repeated scleral depression and multiple examinations, a retinal break could not be identified. LE fundus could not be



**Figure 1:** (a) Clinical photograph under diffuse illumination OD. Corneal graft is clear with interrupted sutures. Note the graft-host junction and the hammock-shaped pupil (white arrow). (b) Clinical photograph under diffuse illumination OS. Leukomatous opacity is seen within the corneal graft suggestive of graft failure

visualized, and an RD was detected on ultrasound. Intraocular pressure was normal in both the eyes.

After detailed counseling, an informed written consent was obtained for EASB, with the possibility for converting to PPV in the event of failure to localize the causative retinal break. During the surgery, a 25-gauge endoilluminator (chandelier lighting system; Alcon, Fort Worth, TX, USA) was placed in superior nasal quadrant and a solitary retinal tear was visualized in the superior temporal quadrant after meticulous scleral depression under wide angle lens assisted visualization (Mini Quad; Volk, Mentor, OH, USA) [Fig. 2b]. The retinal break was marked, and cryopexy performed [Fig. 2c], followed by a quadrantic explant, an encircage and the surgery completed. No drainage or gas injection was performed. Minimal residual inferior subretinal fluid was present on the first postoperative day, which got absorbed by a week and the BCVA was 6/18 by 1 month of follow-up with attached retina, sealed retinal break, and normal intraocular pressure. The condition was stable till 3 months of follow-up [Fig. 3].

### Discussion

Being one-eyed aphakic, and with a history of multiple graft failures in the fellow eye, our patient was a poor candidate for PPV. The patient would have needed long-term tamponade with silicone oil due to the dysfunctional fellow eye and therefore another surgery for oil removal. PPV is known to be associated with chronic damage to the endothelial cells, and we have previously identified aphakic patients to be

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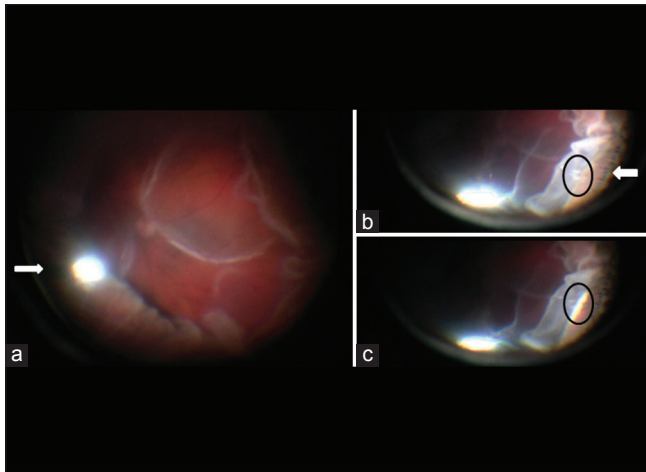
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**Figure 2:** (a) Intraoperative photograph OD depicting total retinal detachment. Chandelier endoilluminator can be seen (white arrow). (b) Intraoperative photograph showing localization of the peripheral causative retinal break (encircled). Ora Serrata is visible (white arrow). Note the indent due to scleral depression. (c) Intraoperative photograph showing procedure of cryopexy (encircled)

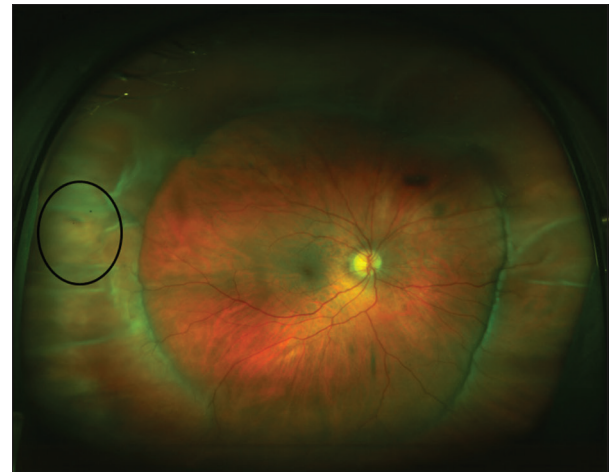
at particularly higher risk for endothelial loss.<sup>[3]</sup> Given the history of multiple graft failures in the LE, decision for EASB for RE was made after careful deliberation. Superior nasal quadrant was chosen as the site for the illuminator because of the up drawn hammock-shaped pupil [Fig. 1]. This would allow for better visualization and also easy maneuverability of the illuminator. EASB has been proven to be useful for intraoperative localization of retinal breaks otherwise obscured by peculiarities of the diseased eye.<sup>[1,4]</sup> In our case, visualization of the retinal periphery was severely hampered by the presence of graft-host junction, sutures, and dyscoria. It would appear from Fig. 2 that the retinal periphery could have been examined preoperatively with ultra wide retinal imaging. However, the same was not possible when the retina was detached, especially without scleral depression, and cryopexy during surgery would have been impossible.

EASB was first described by our center in 2012.<sup>[2]</sup> Recently, we have also discussed its long-term safety and efficacy.<sup>[1]</sup> In its evolution, various types of illumination systems were employed for EASB.<sup>[5-7]</sup> After early reports of surgical success with the chandelier endoilluminator<sup>[8]</sup> and overcoming initial concerns of complications such as endophthalmitis, iatrogenic tears, and lens touch,<sup>[9]</sup> EASB has now gained popularity as it obviates the need for intraocular surgery (PPV) and makes fundus visualization easier for the surgeon.<sup>[1,10,11]</sup> However, its applications, including our own experience,<sup>[1]</sup> till now have been limited majorly to simple cases of RD, without other ocular comorbidity. This case shows that EASB can be a good treatment modality for RD where PPV is expected to have a complicated course.

Hence, EASB is a useful technique that can be employed in eyes unfit for PPV due to multiple morbidities.

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Nil.



**Figure 3:** Postoperative ultra wide image depicting attached retina with retinal break sealed with cryopexy (encircled). Buckle and encirclage indent can also be seen

#### Conflicts of interest

There are no conflicts of interest.

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