Superior Retinal Reattachment Outcomes with Scleral Buckle Vitrectomy Compared with Vitrectomy Alone

Geoffrey G. Emerson, MD, PhD1 - Minneapolis, Minnesota
Edwin H. Ryan, MD2 - Edina, Minnesota

Echegaray et al1 (see pg 169) present a retrospective series of 488 retinal detachment (RD) repairs, comparing the single-operation anatomic success (SOAS) for pars plana vitrectomy (PPV) alone with scleral buckle (SB) with PPV (SB+PPV). They found higher SOAS for the SB+PPV approach (92%) as compared with the PPV alone approach (81%), statistically significant for the overall cohort and also statistically significant in the phakic subgroup. A similar trend was noted, but was not statistically significant, for the pseudophakic subgroup. This study is timely, because the recent Primary Retinal Detachment Outcomes (PRO) Study, a multicenter retrospective series of 2620 RD repairs, also reported higher overall SOAS for SB+PPV (90%) and SB alone (91%) as compared with PPV alone (84%), statistically significant for both the phakic2 and pseudophakic3 moderately complex subgroups in the PRO study. Echegaray et al further demonstrated that SOAS is an important measure in RD repair because visual acuity improved significantly in patients who achieved single operation success, but did not improve when more than 1 surgery was required to repair the RD. In the PRO phakic subset, visual acuity outcomes did not differ between SB+PPV and PPV, but were superior with SB alone in anatomically similar cases.2

Meanwhile, scleral buckling is becoming less popular in practice and less emphasized in vitreoretinal fellowships in the United States and worldwide. The critical skill of detailed retinal drawing, which is essential for preoperative planning, is being replaced by a so-called “we’ll find it in the operating room” approach. The American Society of Retina Specialists Preferences and Trends survey indicates that SB has been on the decline since 2005. In the 2019 survey, 66% to 70% of surgeons reported preferring PPV alone for various types of pseudophakic RD repair.4 For phakic patients, the decline of SB is less pronounced. Many vitreoretinal surgeons use adjunctive SB because of the added difficulty of trimming peripheral vitreous in phakic patients. Echegaray et al argue that the benefit of buckling “may be due to neutralization of residual vitreous-base traction” and note that “total vitreous removal at the vitreous base is a euphemism,” even in pseudophakic patients.

Echegaray et al acknowledge that induced myopia and postoperative discomfort are common and that many complications are possible (but rare) with SB, including diplopia, exposure of the implant, and scleral perforation. Furthermore, scleral buckling is challenging both to teach and to learn and adds surgical time. As is the case with any surgical skill, insufficient experience may translate into worse outcomes, reinforcing a surgeon’s decision to avoid SB. Conversely, a surgeon may be swayed by positive experience with an alternate approach. For example, our late colleague Paul Tornambe, MD, was known for his superior skill and success with pneumatic retinopexy, and consequently he promoted pneumatic retinopexy throughout his career. How we interpret a study that depends on surgical skill (such as with SB) differs from how we interpret a trial in which the intervention does not depend on experience or skill (such as prescribing a medication). Nevertheless, this study, along with the recent PRO study, presenting experience from a combined 70 surgeons from 6 institutions, gives compelling evidence showing a significantly higher SOAS for SB+PPV compared with PPV alone. In turn, single-surgery success translates into better vision for the patient. Many surgeons in the United States want to believe that PPV alone is noninferior for RD repair. Maybe for some surgeons that is the case, but these studies suggest that for most surgeons, SB alone or SB+PPV have superior outcomes. As the debate continues, it will be interesting to see whether these studies positively impact the training and use of SB in vitreoretinal practice.

Footnotes and Disclosures

1 Retina Center of Minnesota, Minneapolis, Minnesota.
2 VitreoRetinal Surgery, PA, Edina, Minnesota.
3 Disclosure(s): All authors have completed and submitted the ICMJE disclosures form. The author(s) have made the following disclosure(s): E.H.R.: Patent - Alcon

References

Smokestack Leak from Retinal Neovascularization

A 57-year-old hypertensive woman with sudden diminution of vision in her right eye for the past 3 months was diagnosed to have inferotemporal branch retinal vein occlusion with neovascularization in the macular area (A). Perifoveal neovascular fronds were visible at the retinal surface on OCT (B), and flow in them was confirmed with B-scans of OCT-angiography (C). En face OCT angiography showed neovascularization arising from the superficial capillary plexus and macular ischemia as well (D). Fluorescein angiography revealed a smokestack pattern of leak from retinal neovascularization (E, F). Smokestack leaks in the retinal neovascularization may be due to its large size, high flow, and feeding by high-flow collaterals.

SAURABH VERMA, MD
PRADEEP VENKATESH, MD
VINOD KUMAR, MS, FRCS ( Glasg)

Dr Rajendra Prasad Centre for Ophthalmic Sciences, All India Institute of Ophthalmic Sciences, New Delhi, India