

# Chapter 69

## Scleral Buckling for Primary Retinal Detachment 1

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**Abstract** The decision to proceed with scleral buckling over primary vitrectomy for primary retinal detachment repair is becoming less common with each passing year, and combining vitrectomy with scleral buckling is never performed by the authors of this chapter secondarily to combining the potential complications of both procedures without creating an additive improvement in outcomes. Primary scleral buckling is indicated for young phakic patients with anterior tears and no proliferative vitreoretinopathy. Patients also need to be counseled on the risk profile of scleral buckling versus vitrectomy before agreeing to surgery.

**Keywords** Rhegmatogenous retinal detachment • Retinal tear • Scleral buckle • External drainage of subretinal fluid • Cryotherapy

### Indications

Young, phakic patient with rhegmatogenous retinal detachment without PVR, patients that must fly

### Essential Steps

1. Topical anesthetic and dilating drops
2. Retrobulbar anesthesia or general anesthesia
3. Sterilization of periocular and ocular surface
4. Sterile draping of microscope and patient
5. Opening of sterile drape with Westcott scissors, bisecting lid opening so drape can fold under and cover lid margins and lashes
6. Placement of sterile wire speculum
7. Soaking of hard silicone scleral buckle in gentamicin solution
8. Peritomy corresponding to degree of access needed for muscle isolation
9. Isolation of muscles on silk sutures
10. Indirect ophthalmoscopy with cryotherapy applied to all breaks

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11. External drainage of subretinal fluid if indicated
12. Trimming of buckle to desired length
13. Placing scleral sutures
14. Placing scleral buckle underneath muscles
15. Tying down knots over buckle with simultaneous pressure being placed by assistant on buckle
16. Paracentesis if needed after tightening buckle sutures
17. Confirmation of appropriate buckling effect with indirect ophthalmoscopy
18. Closing peritomy
19. Broad spectrum antibiotic and steroid subconjunctival injections
20. Speculum removal with patch and shield placement

### Complications

- Ocular hypotony
- Ocular hypertension
- Endophthalmitis
- Proliferative vitreoretinopathy
- Suprachoroidal hemorrhage
- Sympathetic ophthalmia
- Iatrogenic lens damage
- Hyphema
- Retinal detachment
- Vitreous hemorrhage

## Template Operative Dictation

**Preoperative diagnosis:** (1) Rhegmatogenous retinal detachment

**Procedure:** (1) Scleral buckle placement, (2) cryotherapy, (3) external drainage of subretinal fluid (if performed) (*OD/OS*)

**Postoperative diagnosis:** Same

**Indication:** Patient is a \_\_\_\_-year-old male/female who has a macula on/off rhegmatogenous retinal detachment with break(s) located at \_\_\_\_ o'clock. After detailed informed consent process including risks and benefits of the procedure, the patient elected to proceed with the surgery.

**Complications:** (list here if applicable, otherwise: none)

**Description of the procedure:** After verifying the correct surgical site, the patient was placed in supine position and taken to the operating room on an ophthalmologic gurney. The patient received a retrobulbar injection with a 1¼ in., 27-gauge needle consisting of 2% *lidocaine* through the infratemporal periorcular tissues on a straight path into the (*right/left*) muscle cone. This produced adequate akinesia and analgesia.

The (*right/left*) eye was prepped and draped in the usual sterile fashion for ophthalmic surgery. The lid drape was then incised, and a speculum was inserted to further expose the operative eye. A time-out procedure was then carried out in the standard fashion verifying operative eye and procedures to be performed. A \_\_\_-degree (*temporal/nasal*) conjunctival peritomy was then performed. Each of the \_\_\_ rectus muscles was isolated and carefully imbricated using 0-0 silk sutures. Careful examination with indirect ophthalmoscopy and cryopexy was performed to the regions containing peripheral retinal breaks. A \_\_\_ scleral buckle was then trimmed (if required) and passed posterior to the rectus muscles.

***If external drainage of subretinal fluid required***—Given the bullous nature of the detachment, a non-drainage procedure was not possible. A drainage site along the (*describe quadrant entered here*) to the rectus muscle created using a 27-gauge needle on a syringe with the plunger removed was inserted under direct observation with indirect ophthalmoscopy to ensure that the needle tip was underneath the retina bevel down. Very thick viscous subretinal fluid was drained very slowly using gentle pressure on the eye as needed. The needle was withdrawn when no further drainage was noted, and the buckle was placed over the drainage site. The needle track was self-sealing without retinal incarceration.

5-0 nylon sutures were placed in the quadrants to secure the scleral buckle to the sclera. An anterior chamber paracentesis using a 30-gauge needle was performed in order to facilitate tightening of the scleral buckle. The scleral buckle was then tightened and found to be in appropriate location. The retina was periodically examined throughout the case using binocular indirect ophthalmoscope and a 30-diopter lens. Areas of cryopexy were visualized, and the buckle was found to be covering the retinal breaks. The conjunctiva was then closed using 6-0 plain gut suture. The eye was found to be at physiologic pressure, and the optic nerve and vessels appeared to be perfused. Subconjunctival injections of *antibiotic* and *steroid* were given in the inferior fornix. The speculum was removed followed by the drapes. 5% Betadine was applied to the ocular surface, followed by irrigation with sterile BSS. The periorbital surface was then cleaned with a wet followed by dry 4×4s. The eye was then patched and shielded in the usual fashion following ophthalmic surgery. The patient left the operating room in stable condition and was transported to the postoperative holding area. The patient tolerated the procedure well (*with/without*) complications. Attending Dr. \_\_\_\_\_ was present and scrubbed for the entire procedure. Dr. \_\_\_\_\_ was present and scrubbed for the surgery, assisted in the surgery, and assisted with important medical communications with the operating room staff.