

Silicone sponge intrusion after scleral buckling surgery followed by vitrectomy for retinal detachment

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ABSTRACT

BACKGROUND: This study reports a case of silicone sponge intrusion as a late complication of scleral buckling surgery.

CASE PRESENTATION: A 57-year-old man underwent a silicone sponge scleral buckling surgery 19 years ago due to retinal detachment of his left eye. Visual acuity impairment of his left eye was noted. His best-corrected visual acuity (BCVA) was 20/80 (logMAR 0.6). Intraocular lens-capsular bag-capsular tension ring luxation with implant extrusion was observed in the inferior nasal quadrant. The patient underwent pars plana vitrectomy with retropupillary iris-claw lens implantation. His BCVA improved to 20/20.

CONCLUSION: Although silicone sponge intrusion is a rare complication of scleral buckling procedures, it may lead to serious complications. The intruding sponge may be left intact unless there is a significant threat to the integrity of ocular structures. Manipulation of the encircling band or buckle does not necessarily alter the visual acuity or the status of the retina.

KEY WORDS: intrusion; retinal detachment; scleral sponge intrusion; scleral buckling; vitrectomy

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INTRODUCTION

Silicone sponge intrusion is a rare and severe complication of scleral buckle surgery that occurs when an implant migrates into the vitreous cavity. Though the refinement of surgical techniques has significantly reduced these types of incidents [1], patients affected by this complication before these surgical advancements require treatment. The presentation of silicone sponge intrusion ranges from

retinal detachment, vitreous hemorrhage, endophthalmitis, or completely asymptomatic [2]. Proper management of this complication requires frequent ophthalmic control.

CASE PRESENTATION

This study presents a 57-year-old man who experienced silicone partial-thickness sponge intru-

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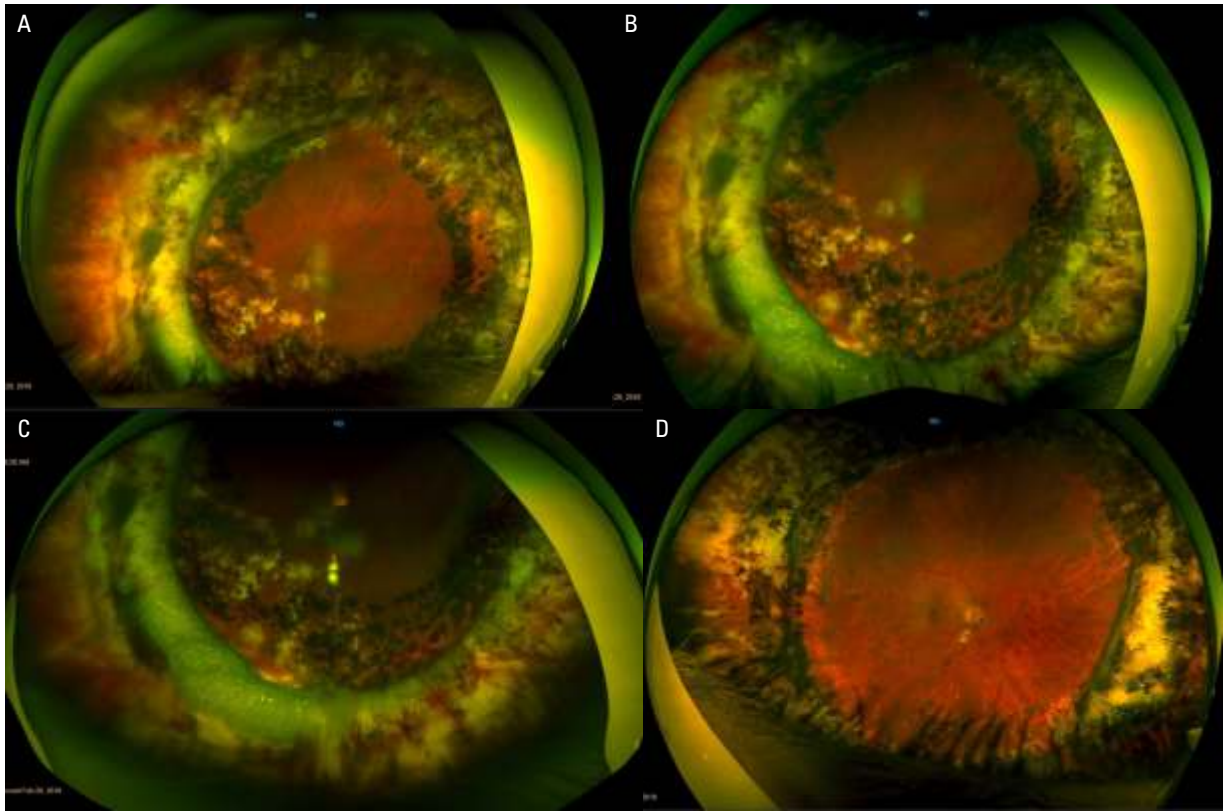


FIGURE 1A–D. Wide field fundus photograph of an intruded silicone sponge in nasal-inferior quadrant

sion after scleral buckling surgery. He underwent a vitrectomy with reimplantation of the lens due to its luxation. He presented with visual impairment in the left eye. He had a history of retinal detachment and was managed with circumferential partial-thickness sponge scleral buckle (2003), vitrectomy due to repeated retinal detachment (2004), and phacoemulsification with posterior chamber intraocular lens (PCIOL) implantation (2005).

On admission, his visual acuity was 20/25 and 20/80 in the right and left eye, respectively. Further, the intraocular pressure (IOP) was 15 mmHg and 19 mmHg in the right and left eyes, respectively. During indirect ophthalmoscopy of the left eye, artificial lens luxation and silicone sponge intrusion into the vitreous cavity in the nasal-inferior quadrant were noted (Fig. 1A–D). The retina was reattached. After obtaining written consent for the procedure, artificial lens reimplantation was initiated.

Pars plana vitrectomy was initiated under general anesthesia in the 23-Gauge system. Trocars were carefully screwed to avoid elevated IOP. A vitrectomy was performed with a fishing complex PCIOL, and the IOP was fixed at 10 mm Hg. After remov-

ing the luxated IOL-capsular bag-capsular tension ring complex, retropupillary iris-claw (Artisan) lens implantation was performed through a 5 mm wide sclerocorneal incision. One cross 10-Nylon was placed, and fluid/air exchange was performed.

Slit-lamp examination done one day postoperative revealed vitreous hemorrhage. Visual acuity in the operated eye was hand movement, with a reattached retina. At one week postoperative, his visual acuity improved to 20/125. Slit-lamp examination revealed that the hemorrhage was absorbed. Four weeks after surgery, the retina remained attached, and his BCVA improved to 20/20.

DISCUSSION

Scleral buckle intrusion (SBI) occurs in 3.8–18.6% of cases [3–5]. Risk factors include a thin sclera, multiple ocular surgeries, and glaucoma. SBI is associated with retinal detachment, hypotony, vitreous hemorrhage, and endophthalmitis [3–5].

Zarei et al. reported that the mean interval time from scleral buckling to intrusion was 10.88 ± 8.61 years (range = 0.25–29 years). It might depend on

variations in scleral thickness and variations in surgical details like cryopexy, diathermy, drainage of subretinal fluid, and degree of tightening of the encircling elements [6].

Observation is sufficient for asymptomatic patients. However, if the above-mentioned symptoms occur, buckle removal is warranted [5]. The scleral defect can be covered via cyanoacrylate glue, scleral imbrication, and other scleral patching techniques [2, 5]. Vitrectomy may be required in intrusion-related complications.

Despite intraocular intrusion of silicone sponge for 19 years, our patient was able to regain full visual acuity. This study highlights that a lower IOP is essential during surgery to attain desirable results.

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Conflict of interest.

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REFERENCES

1. Nguyen QD, Lashkari K, Hirose T, et al. Erosion and intrusion of silicone rubber scleral buckle. Presentation and management. *Retina*. 2001; 21(3): 214–220, doi: [10.1097/00006982-200106000-00003](https://doi.org/10.1097/00006982-200106000-00003), indexed in Pubmed: [11421009](https://pubmed.ncbi.nlm.nih.gov/11421009/).
2. Fallico M, Alosi P, Reibaldi M, et al. Scleral Buckling: A Review of Clinical Aspects and Current Concepts. *J Clin Med*. 2022; 11(2), doi: [10.3390/jcm11020314](https://doi.org/10.3390/jcm11020314), indexed in Pubmed: [35054009](https://pubmed.ncbi.nlm.nih.gov/35054009/).
3. Nguyen QD, Lashkari K, Hirose T, et al. Erosion and intrusion of silicone rubber scleral buckle. Presentation and management. *Retina*. 2001; 21(3): 214–220, doi: [10.1097/00006982-200106000-00003](https://doi.org/10.1097/00006982-200106000-00003), indexed in Pubmed: [11421009](https://pubmed.ncbi.nlm.nih.gov/11421009/).
4. Wilson DJ, Green WR. Histopathologic study of the effect of retinal detachment surgery on 49 eyes obtained post mortem. *Am J Ophthalmol*. 1987; 103(2): 167–179, doi: [10.1016/s0002-9394\(14\)74222-9](https://doi.org/10.1016/s0002-9394(14)74222-9), indexed in Pubmed: [3492917](https://pubmed.ncbi.nlm.nih.gov/3492917/).
5. Shami MJ, Abdul-Rahim AS. Intrusion of a scleral buckle: a late complication of retinal reattachment surgery. *Retina*. 2001; 21(2): 195–197, doi: [10.1097/00006982-200104000-00027](https://doi.org/10.1097/00006982-200104000-00027), indexed in Pubmed: [11321158](https://pubmed.ncbi.nlm.nih.gov/11321158/).
6. Zarei M, Mahmoudi A, Hadi A, et al. Intrusion of episcleral buckles: report of two cases and brief review. *Int J Retina Vitreous*. 2020; 6: 7, doi: [10.1186/s40942-020-00210-7](https://doi.org/10.1186/s40942-020-00210-7), indexed in Pubmed: [32292595](https://pubmed.ncbi.nlm.nih.gov/32292595/).