

Surgically Induced Focal Scleral Necrosis – A Rare Outcome

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Abstract

Purpose: To report a case of surgically induced focal scleral necrosis characterised by conjunctival retraction and scleral thinning with uveal show following a vitreo-retinal surgery.

Methods: Detailed history, clinical examination, management

Results: A 71-year-old male underwent an uneventful vitreo-retinal surgery for retinal detachment in the right eye. About 2 months post-operatively he presented with a complaint of excessive tearing and redness in his right eye. BCVA was -2.00 DS -1.00*110° DC 1/60 in right eye and plain 6/12 in left eye at presentation. Slit lamp examination revealed scleral thinning with conjunctival retraction, scleral thinning with uveal show and prominent episcleral vessels. Patient was prescribed fortified vitamin C eye drop, topical moxifloxacin, topical prednisone and tablet doxycycline, and was advised scleral patch graft repair.

Conclusion: Surgically induced scleral necrosis is relatively rare complication following vitreoretinal surgeries.

Keywords: Scleral necrosis, Vitrectomy, Scleral buckling, Epi-retinal membrane, Vitreo-retinal surgery, Non contact tonometry, OD - Right eye, OS - Left eye.

INTRODUCTION

Scleral necrosis following ocular surgery is a rare but potentially devastating complication.^{1,2} It involves localised scleral tissue death (necrosis) that can lead to severe visual morbidity. This report presents a case of scleral necrosis induced by vitreous-retinal surgery, discusses, its potential causes, clinical findings and management strategies.

Case Report

A 71 years old male patient presented with diminution of vision in his right eye for 6 months and excessive tearing, discomfort and redness in his right eye for 2 months. He also had a history of hypertension for 20 years and type 2 diabetes mellitus for 15 years. About 2 months back he was diagnosed with retinal detachment for which he had undergone vitrectomy, scleral buckling and ERM peeling. On examination his best corrected visual acuity (by Snellen chart) was -2.00 DS -1.00 x 110 DC 1/60 in OD and plain 6/12 in OS. His NCT was 19 and 22 in OD and OS, respectively. Projection of rays were accurate in all quadrants, ocular movements were full in all gazes and pupillary reaction, both direct and consensual were present in both eyes.

On slit lamp examination of the right eye, conjunctiva was retracted and congested, scleral thinning was noted with exposure of underlying uvea and prominent episcleral vessels (Figure 1).

Slit lamp examination of the left eye was normal. On fundus examination of the right eye, red glow was present, the media was clear, disc was vertically oval, tilted and pale (Figure 2); arterio-venous nicking was observed in the infero-temporal quadrant along with nasal shifting of blood vessels.

Left eye fundus examination shows soft exudates in the background, mainly near the optic disc in supero-nasal quadrant and copper wiring of the blood vessels in the infero-temporal quadrant (Figure 3).

Antinuclear antibody and rheumatoid arthritis factor were found to be negative.

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UP JOURNAL OF OPHTHALMOLOGY

An Official Journal of Uttar Pradesh State Ophthalmological Society,
UPSOS (Northern Ophthalmological Society, NOS)

p-ISSN: 2319-2062

DOI: 10.56692/upjo.2025130105

How to cite this article: Garg R, Srivastava T, Saquib M. Surgically Induced Focal Scleral Necrosis – A Rare Outcome. UP Journal of Ophthalmology. 2025;13(1): 24-25.

Received: 02-02-25, **Accepted:** 19-03-25, **Published:** 30-04-25

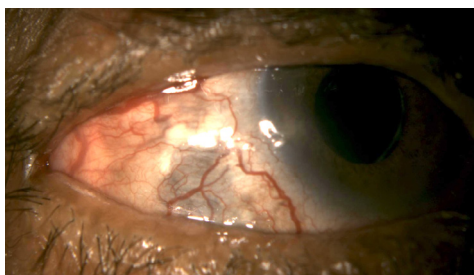


Figure 1: Slit lamp picture of right eye showing retracted and congested conjunctiva, scleral thinning with exposure of the underlying uvea and prominent episcleral vessels



Figure 2: Fundus picture of right eye



Figure 3: Fundus picture of left eye

A diagnosis of post-retinal surgery induced scleral necrosis was made.

Management

Patient was started on topical fortified vitamin C 4 times a day, topical moxifloxacin thrice daily, topical prednisolone 6 times a day and tab doxycycline 1 tablet, twice daily. He was also advised scleral patch grafting with buckling readjustment.

DISCUSSION

Surgically induced scleral necrosis is a rare but serious complication following ocular surgeries, particularly those involving the sclera or conjunctiva.^{1,2} The use of adjunctive agents like mitomycin C, while effective at reducing scarring and recurrence of conditions like pterygopalatine, carries risk of delayed wound healing and tissue necrosis.^{3,4}

Cryotherapy/Diathermy, often used to treat retinal tears, but overuse or high intensity application can cause scleral damage.^{5,6}

In this case, excessive tension due to scleral buckling or use of trocars might have led to scleral ischemia.⁷ Advanced age and comorbidities like diabetes or autoimmune diseases can impair wound healing.⁸

Careful, placement of trocars and scleral buckles can reduce the risk of ischemia and necrosis.⁹ Early signs of scleral necrosis (pain, redness, scleral discolouration) should be identified promptly for early intervention.

CONCLUSION

Since surgically induced scleral necrosis is uncommon, it underscores the need for vigilance and meticulous surgical planning to minimize risks and optimize patient outcomes. Early recognition and intervention are essential to preserving vision and ocular structure.

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