

**OUTCOME OF PARTIALLY EXPOSED SILICONE SCLERAL EXPLANT AMONG  
CASES PRESENTING WITH HEMOLACRIA****\*Dr. Padma Prabhu**Associate Professor, Department of Ophthalmology, Government Medical College Kozhikode Kozhikode Kerala India  
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**ABSTRACT**

An attempt is made to describe the features of partially exposed silicone rubber scleral buckle among cases presenting with bloody tears. The cohort includes five adults who underwent standard scleral explant surgery for rhegmatogenous retinal detachment. Hemolacria followed recurrent attacks of periocular pain and chronic headache lasting for months. Persistence of symptoms despite topical and systemic anti-inflammatory agents including steroids was observed in all cases. Hypertension was an associated condition in four cases. Scleral thinning (necrosis in one case) was noted in all at the site of exposed buckle. Staphylococcus was isolated in four out of five cases, though only one had active infection. High index of suspicion is required regarding impending buckle extrusion in patients who have undergone scleral buckling presenting with recurrent scleral inflammation. The need for microbiological evaluation of the removed buckle in view of the subclinical buckle infections is stressed. Removal of the buckle is curative.

**KEYWORDS:** Scleral buckle, extrusion, retinal detachment, staphylococcus, MRSA, infective scleritis. Hemolacria.

**INTRODUCTION**

Chronic infection of scleral explants with extrusion is a well recognized complication of retinal detachment surgery with an incidence of 0.5% to 5.6% in primary repairs and 10% in revision surgeries.<sup>[1,2]</sup> Along with foreign body sensation, discomfort, discharge and redness, features of intraocular inflammation, scleritis and conjunctival granuloma are seen. Bloody tears or hemolacria is scarcely reported in the literature. Five such cases are grouped to ascertain the diagnostic features and treatment outcome of this rare entity.

**Case details**

Cases with partially exposed silicone scleral buckle presenting with hemolacria were selected (after approval by the institutional ethical committee). Informed consent was obtained. Cases with buckle exposure and migration without history of bloody tears were excluded. The cohort included five cases (over a period of three years). The details are summarized (table 1).

Mean age of the group was 61.4 years; range 42 to 78 years. The mean duration of symptoms was 169 days. There were four males and one female. Longstanding periocular and ocular pain along with unilateral boring headache was the common symptom. Persistence of symptoms despite prolonged and intermittent topical and systemic anti-inflammatory agents (topical steroids in

4/5) was observed among all cases. Hypertension was an associated condition in four cases. None were diabetic.

The site of extrusion was the area of overlap of free ends of the encircling element except case 4 (fig 1). The anchoring suture was found to be loose and cheese wired. The knots were intact (fig 2). All the cases were treated with silicone tire and band. None showed distortion of the explant element.

Scleral thinning was observed in all the cases and scleral necrosis with chronic fistula in case 1. The overlying conjunctiva was inflamed and thickened. Severe hypotony was noted in majority (4/5) and best corrected vision was less than hand movement perception (fig 4).

Staphylococcus was the organism isolated in 4 cases, though only one had active infection. Removal of the buckle under broad spectrum antibiotic coverage was curative in all the cases.

**DISCUSSION**

The incidence of infected solid silicone element is around 1.3%.<sup>[1,2,3,4]</sup> Unlike the porous sponge, the unique nonporous physiochemical properties of solid silicone tyres make them resistant to infection. However damage and fragmentation of the material creates dead space

within the fibrotic capsule and subsequent colonization of the surgical site.

Lack of silicone sponge extrusion in this case series may be due to the decline in usage of sponges in the last few decades. Further the soft nature of the material causes less erosion of the overlying conjunctiva.

In a large series Douglas J C et al noted that the primary indications for scleral buckle removal were exposure without clinical infections (43%), clinical infection without exposure (16%), clinical infection with exposure (6%), chronic irritation (14%), migration without exposure (5%), glaucoma requiring shunt placement (3%), and inhibition of the growth of the eye (3%).<sup>[2]</sup> Incidence of hemolacria as an indicator of explant eroding the inflamed conjunctiva has not been mentioned.

The exact reason behind migration and exposure of the explant is not clear. The initial event is believed to be cheese-wiring of the suture through the sclera, allowing movement of the buckle.<sup>[5]</sup> Allergic reaction to the explants is also identified as an initiating event. Phthisis bulbi is considered as an important risk factor. As the phthisical eye starts shrinking, the rigid explant erode through the unhealthy conjunctiva.<sup>[6]</sup> The sutures stretch and give way. The continuous escape and dribbling of subretinal fluid result in fistula formation.

The common organisms identified are Staphylococcus epidermidis, Staphylococcus aureus, Mycobacterium and Corynebacterium. Infrequently gram negative organisms like proteus and pseudomonas are also isolated.<sup>[7,8,9]</sup> Invasive organisms are associated with acute severe infections presenting with orbital cellulites. Staphylococcus epidermidis and staphylococcus aureus are responsible for chronic low grade infections which respond well to conventional broad spectrum antibiotics like ciprofloxacin. Culture positivity ranges from 35% (Wirotko et al) to 80.96% (Jay Chhablani et al).<sup>[7,9]</sup> Often the source of contamination is the patient's own conjunctival flora. Unhealthy conjunctiva, use of topical steroids, comorbid conditions (general ill-health, diabetes etc) and frequent rubbing or wiping with associated microtrauma in an irritable eye predisposes to these subclinical infections.

Buckle infections have also been observed among cases without any buckle/suture exposure.<sup>[7]</sup> In such eyes, the probable source of infection is assumed to be organism gaining entry during the surgery. They create a biofilm especially on the surfaces and ends of solid silicon elements.<sup>[10]</sup> Biofilm is an extracellular polysaccharide secreted by bacteria to maintain their adherence on prosthetic devices, such as urinary catheters and heart valves.<sup>[11]</sup> The biofilms withstand antimicrobial treatment and lead to persistence of scleral buckle infections.<sup>[12]</sup>

It is debatable whether extrusion of the buckle or chronic indolent buckle infection is the primary event. Our observation supports the second hypothesis especially among those presenting with hemolacria. Persistent scleral inflammation due to the indolent buckle infection leads to hyperplasia and thickening of the overlying conjunctiva. The unhealthy friable surface layer gives way and the buckle extrudes. Hemolacria may be an indicator of such an event. The loss of integrity of the conjunctiva overlying the buckle and presence of a wide tire in all the cases along with subclinical buckle infections in the majority resulted in exposure of the explant in eyes with hypotony.

## CONCLUSION

Impending buckle extrusion must be suspected among patients who have undergone scleral buckling presenting with recurrent scleral inflammation. Microbiological evaluation of the removed buckle is mandatory in view of the subclinical buckle infections which may be the trigger behind extrusion in such cases. Removal of the buckle is curative.

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