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## Case Report

## A rare case of chorioretinitis sclopetaria- a pellet in a haystack

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## Abstract

Chorioretinitis sclopetaria is a rare event with a poor visual prognosis, with less than a hundred cases reported worldwide. We report a case of an 8-year-old boy who presented with swelling and decreased vision in the left eye after an alleged fall. On examination, the affected eye showed periorbital ecchymosis, ptosis, subconjunctival haemorrhage, hyphema, and an afferent pupillary defect. A CT scan showed a foreign object lodged in the left orbit which was removed surgically. This case report intends to describe the rare occurrence of chorioretinitis sclopetaria in a child, wherein the history of gun pellet injury, elicited in retrospect, clinched the diagnosis.

**Keywords:** Ocular trauma, Paediatric, Sclopetaria, traumatic chorioretinal rupture

## Introduction

Chorioretinitis sclopetaria (CS) is a rare event, with less than a hundred cases reported worldwide and even lesser reported in children. A total of 67 cases (71 eyes) of sclopetaria have been outlined till December 2019. Eleven cases have been reported between 1980 and 1999, and 43 were reported between 2000 and 2018 [1]. The term was used by Goldzieher to describe the appearance of the ocular fundus following a bullet injury to the orbit [1], with “sclopetum” referring to a firearm [2]. Although the appearance resembles a healed chorioretinal inflammation, the pathogenesis is now believed to be a result of the effects of trauma. The visual prognosis is usually poor in these cases.

## Case Report

We report a case of an 8-year-old boy, from coastal Karnataka who presented with swelling and diminution of vision in the left eye (LE) after

an alleged fall. He was evaluated by neurosurgery for head trauma and referred to the ophthalmology department for evaluation. The child claimed that the decrease in vision was sudden and painless, which he noticed following the fall. The child did not have any preexisting systemic or ocular symptoms. The best-corrected vision in the right eye (RE) was 6/6 and the LE was the perception of light. On examination, a 2 mm x 1 mm laceration just above the right superior medial orbital rim was noted (Figure 1). The anterior segment and fundus examination of the RE was within normal limits. The LE had periorbital ecchymosis, ptosis, subconjunctival haemorrhage, hyphema, and an afferent pupillary defect. Fundus examination of the LE revealed vitreous haemorrhage. The optic nerve head was noted to be normal. B scan ultrasonography was done to confirm the same. Orbital CT done at the time showed a radio-dense foreign object in the left orbit which was initially dismissed as an artefact.

At the one-week follow-up visit, there was a resolution of the eyelid oedema and partial resolution of the vitreous haemorrhage. A hard nodular mass was palpable in the left upper lid, corresponding with the CT findings. Fundus examination revealed a chorioretinal rupture involving the macula in the LE (Figure 2).

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Repeat orbital imaging confirmed the presence of a radiopaque foreign body of about 1.15 mm X 0.65 mm X 0.9 mm in the anterosuperior aspect of the left orbit; with an intact globe (Figure 3). This was a peculiar finding in our case, as the suspected entry wound was above the right medial orbit, whereas the foreign body was found to be lodged in the left orbit.

On further questioning regarding the source of the foreign body, the parents admitted that there was a possibility of a gunshot injury as an air gun was found discharged in their house on the day of the fall. The boy was presumably playing by himself, alone in the house while the parents were at work. This information gave us the missing piece of the puzzle. We concluded that the air gun pellet had entered above the right medial orbit, coursed through the ethmoid sinuses, and become lodged in the left anterosuperior orbit, leaving the globe intact.

A diagnosis of LE CS with an orbital foreign body was made. The left orbit was explored under general anaesthesia and the metallic foreign body was removed through the superior fornix by a trans-conjunctival approach.

On review after one month, the child's best corrected visual acuity in the LE was hand movements, the vitreous haemorrhage had resolved, but the chorioretinal scar persisted. On further follow-up, the ocular condition remained the same, with little to no improvement in visual acuity.

## Discussion

Children are often frightened after trauma and may not confide in their parents or provide a reliable history (3). Due to the medico-legal nature of such injuries; the parents may be hesitant to reveal the details of the incident that transpired as well. In cases such as ours, where the history and clinical findings cannot be correlated, repeated history and evaluation may be required.

CS is a break in the retina and choroid that involves its entire thickness, after an injury with a high-velocity projectile that strikes or passes close to the globe, without penetrating it (4). This is characterized as a non-penetrating injury causing a haemorrhagic rupture of the retinochoroidal layers.

Usually, two areas of injury are observed; an area running parallel to the path of the projectile that is damaged by direct trauma, and macular damage due to indirect forces (5). Healing takes place by fibrosis, leaving behind a white scar of proliferative tissue with associated pigmentary alterations. In our case, with the resolution of the vitreous haemorrhage, a chorioretinal rupture with the initiation of scarring was noted. The presence of an entry wound near the right superomedial orbit and the presence of the orbital foreign body were the only initial clues on examination suggestive of the diagnosis. Visual acuity at presentation depends on the location, extent of the rupture and the mode of injury. Low presenting visual acuity is a predictor of poor visual prognosis (6). Air gun pellet injuries are likely to lead to a poorer visual outcome than injuries by other high-velocity projectiles (7). CS is accompanied by retraction of the retina and choroid and exposure of the bare sclera (8). Our patient had a rupture involving the macula, accounting for the eventual poor vision. Optical Coherence Tomography (OCT) is usually confirmatory and depicts the choroidal scarring accurately. Unfortunately, the lack of access to a functional OCT during the incident made the documentation difficult.

The delayed occurrence of a retinal detachment is less reported in these cases, probably attributable to the younger age profile with an intact vitreous face as well as a retraction of the combined choroid-retinal complex, thus preventing sub retinal fluid accumulation.

## Conclusion

CS is a rarely reported event, especially in children, that occurs after a high-velocity projectile injury near the globe, without penetrating it. Intraorbital foreign bodies are not uncommon, but a concealed history made this case diagnostically challenging. Visual recovery in CS is poor if the macula is involved. Observation may be needed for the development of retinal detachment, although the chances are rare. This case highlights the importance of a thorough history and clinical examination in the assessment of children with ocular injuries.

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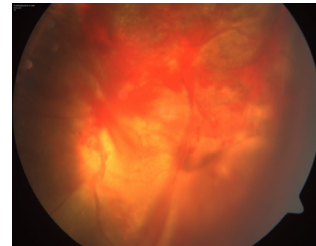
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2 mm x 1 mm  
laceration just above  
the right superior  
medial orbital rim



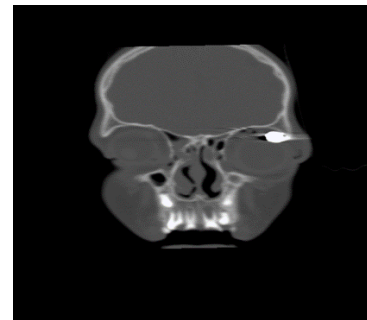
**Figure 1:** Laceration above right eye; suspected site of the entry wound, opposite to the affected eye

Optic  
disc



Chorioretinal  
rupture in  
the macular  
region, with  
resolving  
vitreous  
haemorrhage

**Figure 2:** Fundus photo showing chorioretinal rupture involving macula



Radiopaque  
foreign body of  
about 1.15 mm  
X 0.65 mm X 0.9  
mm in the antero-  
superior aspect of  
the left orbit, with  
an intact globe

**Figure 3:** NCCT depicting the metallic foreign body in orbit