

Coats' White Ring: The Embellished and Spruced up Iron Remnant in the Cornea

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Abstract

Coats' white ring can be a common finding in the cornea following incomplete removal of the iron rust ring after ocular trauma with iron particles. Though the finding is common and innocuous, it's etiology is rarely understood and commonly considered as a corneal opacity following an ocular injury and less recognised as a distinct entity. It can be diagnosed from the history and the typical appearance as a ring of discrete white dots in the subepithelial layers with intact epithelium. Patients are asymptomatic and treatment is not required.

Delhi J Ophthalmol 2021;32; 95-96; Doi <http://dx.doi.org/10.7869/djo 703>

Keywords: Coats' White Ring, Rust Ring, Iron Deposition, Cornea, Ocular Trauma.

Introduction

A 34-year-old male patient, welder by occupation came for his routine eye check-up. He had past history of episodes of iron metal chips flown into both of his eyes while working without protective eye wear few years back. Examination of his right eye revealed macular corneal opacity, whereas his left eye revealed Coats' white ring of 1.5 mm diameter near the temporal limbus (Figure 1A and 1B). Coats' white ring is a form of iron deposition in the cornea which is often circular or oval in shape and was first described by George Coats. It is located within the Bowman's membrane or the anterior stroma, and is composed of a complete or incomplete ring of discrete white dots. The overlying epithelium is smooth and intact. The lesion(s) are associated with previous metallic corneal foreign bodies.^{1,2} It is usually seen in the area of incompletely removed rust ring in the cornea. Calcium was thought to be the cause of the lesion as an occupational injury in limestone workers.³ But the lesion doesn't contain calcium or lipid as it was thought before. Histochemical analysis confirmed the presence of iron within the lesion.⁴ Patients with Coats ring are asymptomatic. These incidental findings don't require any treatment.

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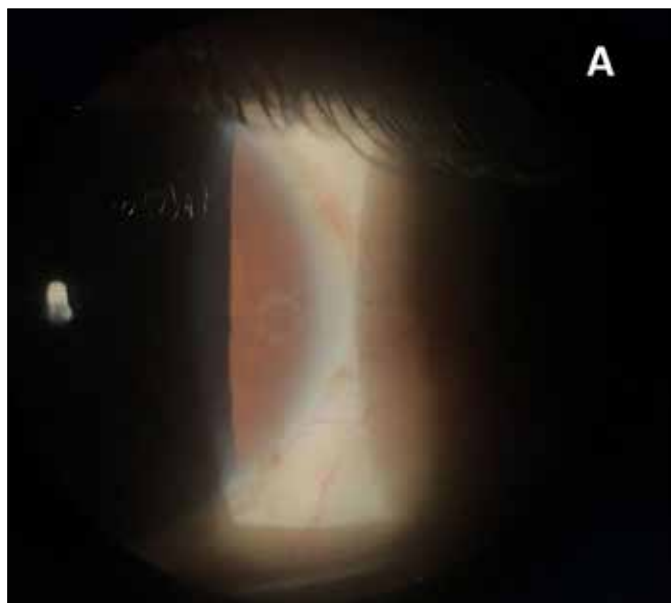


Figure 1a: 10X magnification shows the location of the lesion in the cornea near the limbus.

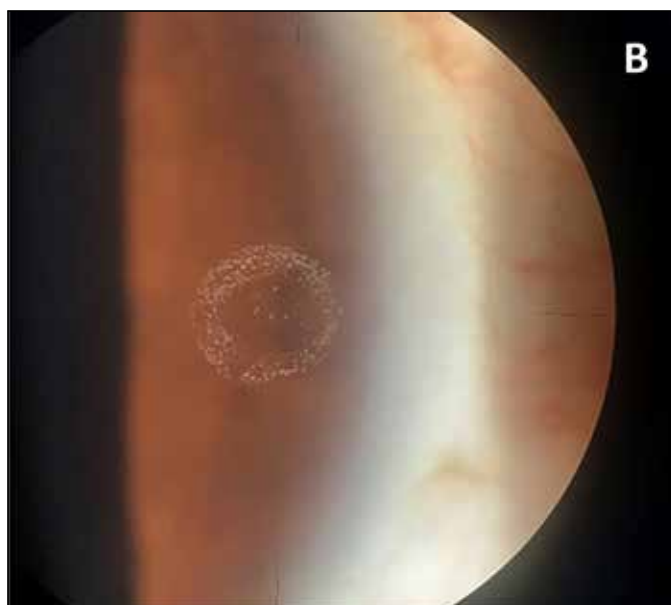


Figure 1b: 16X magnification shows the typical ring of discrete white dots in the cornea with few white dots in the centre of the ring.

Cite This Article as: Vishnu Teja Gonugunta. Coats' White Ring: The Embellished and Spruced up Iron Remnant in the Cornea. Delhi J Ophthalmol 2021; 32; (1) 95 - 96.

Acknowledgments: Nil

Conflict of interest: None declared

Source of Funding: None

Date of Submission: 25 Apr 2021

Date of Acceptance: 08 May 2021

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