

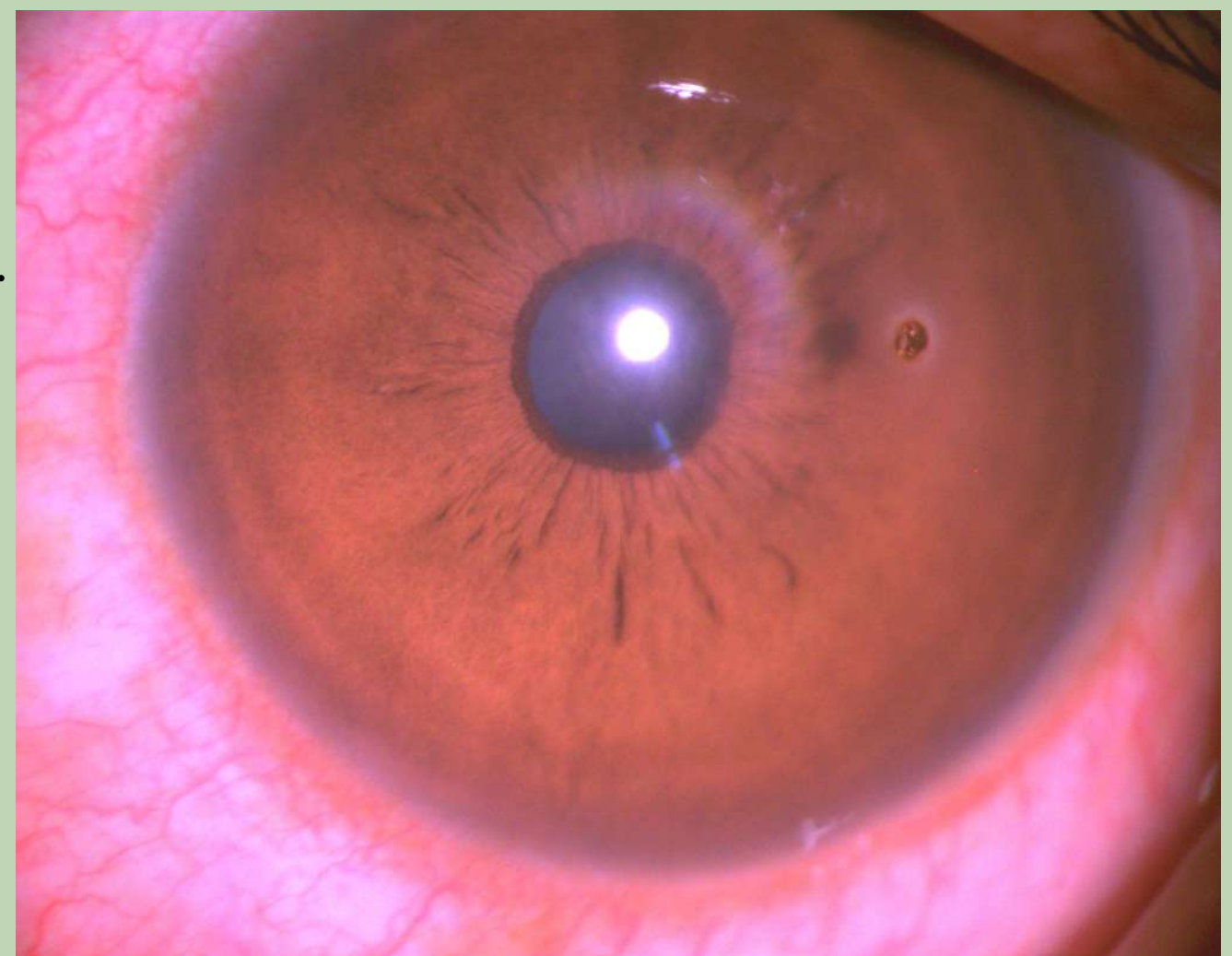
### CORNEAL FOREIGN BODY : PREVENTION IS THE KEY

#### Introduction

- Ocular trauma forms a significant proportion of occupational health hazard. A global survey on eye injury and their consequences has reported 55 million eye injuries restricting activities more than one day, occur each year. Among the occupational injuries, a corneal foreign body (FB) has been identified as the most common form of injuries.
- The spectrum of consequence of corneal FB ranges from no change in vision to complete blindness (No PL). The potential sight threatening complications of corneal FB includes, corneal ulcer, corneal perforation, uveitis, endophthalmitis. It is particularly common among construction workers, involved in drilling, hammering, welding etc. We are presenting here three cases of corneal FB, presenting in outpatient department (OPD) of ophthalmology, AIIMS, Rajkot. All three patients were explained about ocular trauma and related complications. They were counselled about the necessity of wearing protective eye wear during their work.

#### Case - 1

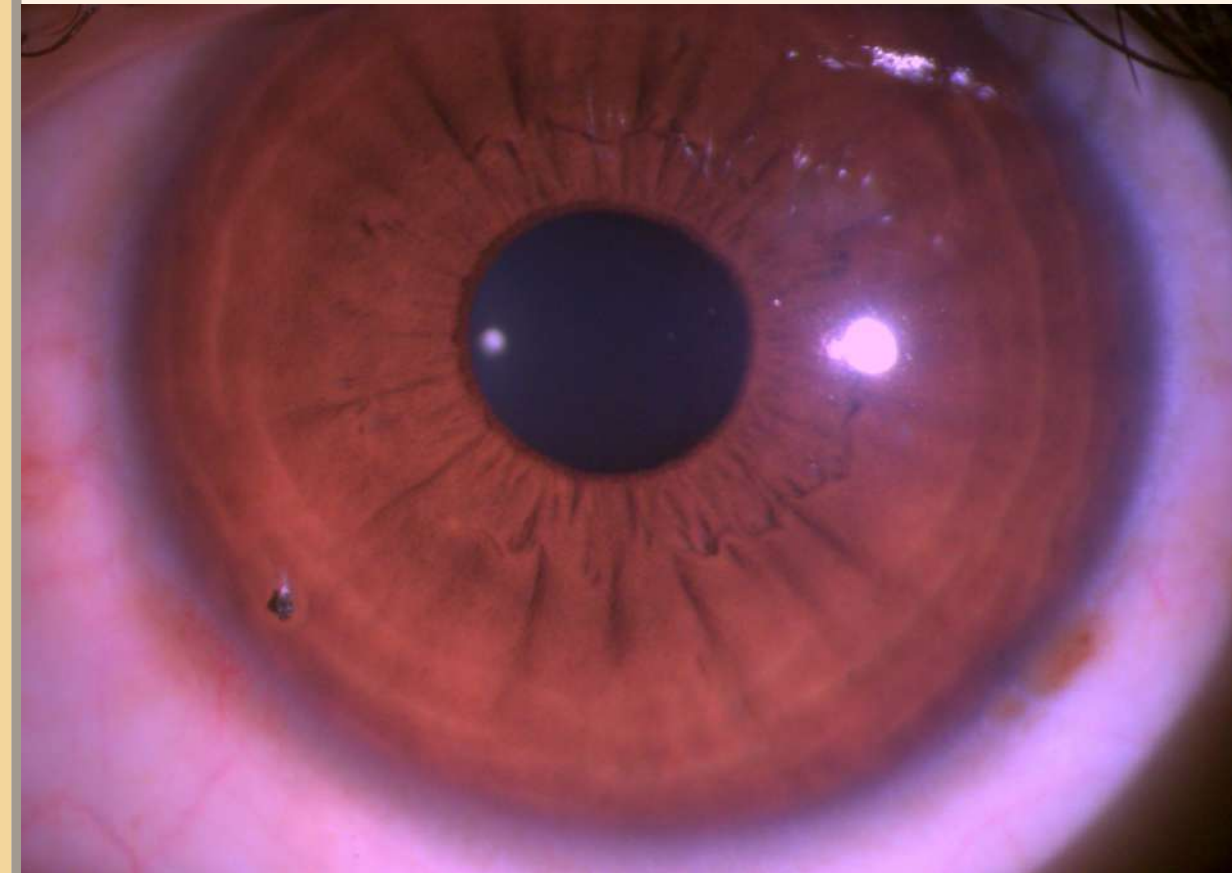
- An eighteen years old construction worker presented to ophthalmology OPD with complaints of redness, pain, foreign body sensation – left eye (LE) for last 2 days. He gave history of fall of some metal particle in his LE when he was doing some hammering work. He was not using protective glasses during work.
- Visual acuity in both eyes was 6/6 using Snellen's visual acuity chart. Slit lamp examination of RE of patient showed normal anterior segment structures. On LE examination, diffuse conjunctival congestion was seen. A corneal FB was noticed on temporal paracentral area surrounded by corneal oedema and rust ring. Lid eversion and fornix examination was done to rule out additional FB. Anterior chamber was quiet, with no evidence of cells or flare.
- Patient was explained about the clinical condition and was explained about the need of removal of FB. Corneal FB was removed with the help of 26-gauge needle under topical anaesthesia using proparacaine (0.5%) eye drop. Topical Gatifloxacin 0.3% eye drop was advised to the patient, to be applied 4 times in a day. A follow up visit after 4 days was scheduled, which showed no remanent of FB or rust ring.





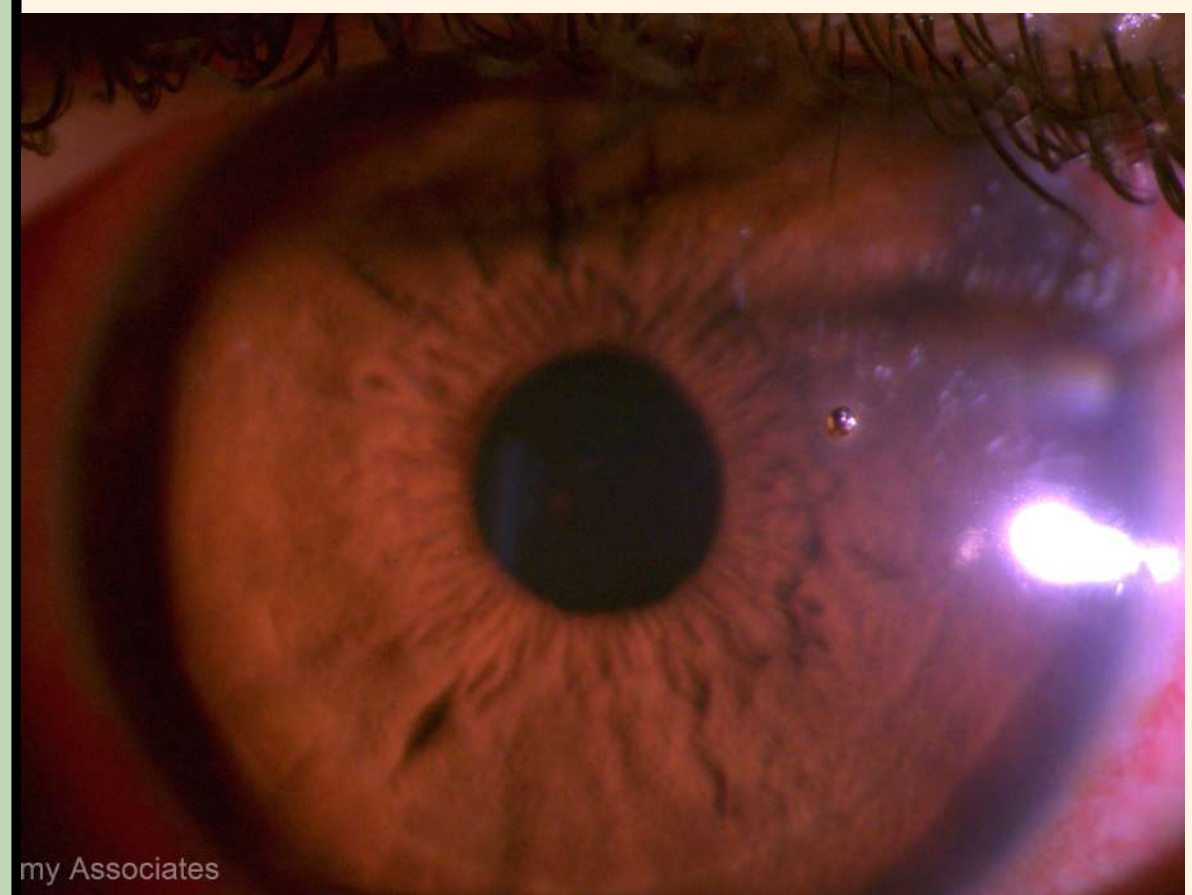
## Case - 2

- A 28-year-old construction worker presented to eye OPD with complaint of FB sensation in his LE for last 1 hour. He was involved in welding work at construction site when he felt something fell in his eye. Similar to the previous patient, he was not wearing protective glass while working.
- Both eyes had visual acuity of 6/6, using Snellen's visual acuity chart. Slit lamp examination of anterior segment of RE eye was normal. Examination of LE revealed – corneal FB at 8 O'clock position, near the limbus. It was associated with minimal surrounding congestion.
- It was removed under topical anesthesia using 26-gauge needle. Topical antibiotic eye drop Moxifloxacin (0.5%) was given for a week in qid frequency. Anterior segment examination was normal on next follow up after 4 days.



## Case - 3

- A 25 years old electrician presented in ophthalmology OPD with redness and pain – LE for the last two days. He gave history of FB fall in his LE when he was doing the electrical work. He was not wearing any protective eye wear at the time of injury. He had defected vision in his RE since childhood following an episode of trauma while playing.
- Clinical examination of RE showed visual acuity of 2/60 not improving with glasses. It had exotropia and corneal opacity of 2mm X 2mm near temporal limbus. LE visual acuity was 6/36, improving to 6/6 as per Snellen's visual acuity chart. There was a dense conjunctival congestion and a corneal FB at 2mm temporal to pupil in the central cornea.
- After explaining the FB removal procedure in details, we removed the FB under local anaesthesia, using 26 G needle. Topical Gatifloxacin eye drop (0.3%) was prescribed for a week in qid dose. The patient was instructed to come for follow – up examination and other eye evaluation after 4 days.



## Discussion

- Workplace injury is the commonest mode of ocular trauma reported in the literature. Cornea being a densely innervated ocular part, gives rise to severe symptoms in a patient with corneal FB. Younger population by virtue of their outdoor activities are more prone to have it. An Indian study has reported that younger people, in the age bracket of 14 - 29 years old, were responsible for 66% of the presentations of corneal FB.
- Any corneal FB should be removed as soon as possible. Superficial FB can be removed out with simple saline wash or by using moistened sterile cotton-tipped applicator. Embedded corneal FB can be dislodged with the help of a 26 G/ 30 G needle or a spud. Removal of a full thickness FB can lead to corneal perforation. The facility and provision should be there for corneal gluing or suturing before attempting to dislodge a full thickness FB. Iron FB are usually seen with surrounding rust ring. This can be removed by scraping with 15 number surgical blade or brushing a sterile rotating burr across the affected tissues.
- Prognosis of corneal FB depends on its chemical nature, location and depth. Metallic FB cause more stromal reaction than inert FB like plastic and glass. Central corneal and deeply embedded FB are associate with vision related complications likes corneal perforation, scar formation causing irregular refraction..

## Prevention

- Safety training related to the concerned occupation and awareness regarding the occupational health hazard should be made mandatory for everyone involved in at risk population.
- Importance of protective eye wear can not be over-emphasized. An Indian study has reported that only 53% of corneal FB patients were provided with protective glasses and of these, only 27% were wearing it at the time of injury. A cross sectional survey conducted in South India among 150 welders revealed that, they all were working without formal training and were unaware of the safe working guidelines that exist.





## Conclusion

- Corneal FBs, a frequent presentation in ophthalmic OPD can have a potential vision threatening complications. Preventive measures like regular and comprehensive workshops on principles of ergonomics, awareness towards occupational health hazards and provision of adequate protective eye wear should be made mandatory for all the workers involved in occupations at risk. A timely management in the form of foreign body removal and taking care of corneal surface can have a very good outcome.

## References

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## **Message from Executive Director - AIIMS, Rajkot**

I heartily congratulate the Department of Ophthalmology for their initiative to release e-newsletter in their speciality.

My Best Wishes to the entire team.

**- Dr. (Col) C. D. S. Katoch**

## **Message from the department of Ophthalmology - AIIMS, Rajkot**

**“The secret to getting ahead is getting started”**

The department of Ophthalmology is starting this journey with the vision to serve the society in the best possible way. This newsletter is a means to create awareness towards a common eye problem - corneal foreign body.

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