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Optical Iridectomy for Traumatic Central Corneal Leukoma with Iris Adherence in a 35-Year-Old Male: A Case Report

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Abstract: ***A 35-year-old male presented to Sankara Eye Hospital, Anand, with a one-year history of left-eye trauma from a wooden stick. He reported progressive diminution of vision in left eye and a whitish corneal opacity that had been present for ten months. Examination revealed a central adherent leukoma with iris adherent to the opacity and a pinpoint (1 mm) pupil. Visual acuity was 6/6 in the right eye and finger-counting at 3 m in the left eye. An optical iridectomy was performed: side-port incisions at 12 and 6 o'clock, blunt dissection of iris adhesions, enlargement of the pupil to 3.5 mm with a vitrectomy cutter, intracameral antibiotic injection, and wound hydration. Post-operatively, uncorrected visual acuity improved to 6/60, with pinhole correction achieving 6/36. This case illustrates the efficacy of optical iridectomy in restoring a functional visual axis in eyes with traumatic central leukoma and iris adherence.***

Keywords: Optical Iridectomy, Adherent leukoma, Traumatic eye injury,

1. Introduction

Traumatic corneal injuries can result in dense leukoma formation, often with iris adhesion that obstructs the visual axis. When the opacity is central and the eye is otherwise healthy, optical iridectomy can create a clear pupillary opening, improving visual function without resorting to corneal transplantation. We present a case of successful optical iridectomy in a young adult with post-traumatic central leukoma and iris adherence.

2. Case Presentation

A 35-year-old male farmer presented to Sankara Eye Hospital, Anand, Gujarat, with complaints of progressive diminution of vision in the left eye following blunt ocular trauma caused by a wooden stick one year prior. He also reported noticing a whitish corneal opacity in the same eye for the past ten months. The patient had not sought any medical treatment immediately after the injury and had no history of prior ocular surgery. There was no significant systemic illness or drug allergy. On examination, best-corrected visual acuity was 6/6 in the right eye and finger counting at 3 meters in the left eye. Slit-lamp examination of the left eye revealed a dense central corneal leukoma measuring approximately 5 mm in diameter involving the pupillary axis, with firm iridocorneal adhesion and a secondary miotic pupil measuring about 1 mm. The anterior chamber was quiet, and the crystalline lens appeared clear. Intraocular pressure was 14 mm Hg in the right eye and 12 mm Hg in the left eye. Fundus examination was not possible clinically due to the corneal opacity; however, B-scan ultrasonography revealed a normal posterior segment. Specular microscopy showed adequate peripheral endothelial cell density (>2000 cells/mm²). Based on these findings, a diagnosis of post-traumatic central corneal leukoma with adherent iris and secondary miotic pupil was made..

3. Management

Considering the presence of a dense central corneal leukoma with preserved peripheral corneal clarity and absence of posterior segment pathology, optical iridectomy was planned to restore a functional visual axis. After obtaining informed consent, the patient was started on topical moxifloxacin 0.5% and prednisolone acetate 1% one day prior to surgery. The procedure was performed under peribulbar anaesthesia using 2% lignocaine. Two side-port incisions were made at the 12 and 6 o'clock positions using a 20-gauge MVR blade. The iridocorneal adhesions were gently released using an iris repositor and Vannas scissors (image no. 2). A controlled optical iridectomy was then performed using a 23-gauge vitrectomy cutter (image no 3), enlarging the pupil to approximately 3.5 mm to create a clear visual axis through the relatively transparent peripheral cornea (image no 4). Intracameral moxifloxacin was injected at the end of the procedure, and the side ports were hydrated with balanced salt solution to maintain anterior chamber stability. Post-operatively, the patient was prescribed topical antibiotics, topical steroids tapered over four weeks, and cycloplegic drops for one week.

Image 1: Preoperative image showing Adherent Leucoma involving center of Cornea

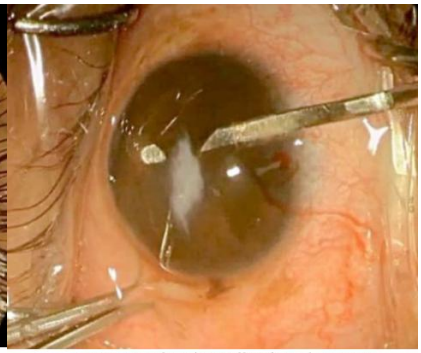

Image 2: Releasing adhesions between Cornea and Iris

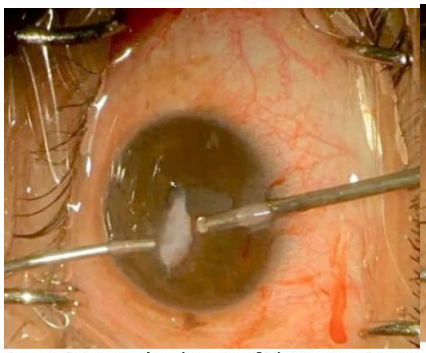

Image 3: Image showing use of Vitrectomy Cutter to enlarge size of Pupil

Image 4: Postoperative status of patient after completion of Optical Iridectomy

4. Discussion

Traumatic central corneal leukoma with iridocorneal adhesion represents a challenging clinical scenario, particularly in young patients with otherwise healthy eyes. Corneal transplantation remains the definitive treatment; however, it is associated with several limitations, including donor tissue scarcity, higher costs, prolonged rehabilitation, and increased risk of graft rejection, especially in post-traumatic eyes.[1] Optical iridectomy serves as an effective and economical alternative by creating a clear pupillary aperture through relatively transparent peripheral cornea, thereby improving visual function without altering corneal anatomy.[2]

In the present case, the dense central leukoma measuring approximately 5 mm with firm iris adherence resulted in a pinpoint pupil and severe visual impairment. By carefully releasing the adhesions and enlarging the pupil to 3.5 mm, a functional visual axis was achieved, resulting in an improvement of visual acuity from finger counting at 3 meters to 6/60 unaided and 6/36 with pinhole correction. Similar visual outcomes have been reported in previous studies, where optical iridectomy achieved visual acuity of 6/60 or better in 70–80% of patients with central corneal opacities and iris adhesions.[1 2]

Critical surgical considerations include gentle handling of iris tissue to prevent haemorrhage, precise sizing of the iridectomy to minimize glare and photic phenomena, and meticulous aseptic technique to reduce the risk of postoperative inflammation or infection.[3] In this patient, no intraoperative or postoperative complications such as iris bleeding, lens damage, or recurrent adhesion were observed, highlighting the safety and efficacy of optical iridectomy when appropriately indicated and performed by an experienced anterior segment surgeon.

5. Conclusion

Optical iridectomy is an effective, minimally invasive option for restoring visual function in eyes with post-traumatic central corneal leukoma and iris adherence. In our patient, the procedure resulted in a significant visual improvement without the need for corneal transplantation. Long-term follow-up is warranted to monitor for recurrence of adhesions and to assess the stability of visual gain.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest: There are no conflicts of interest

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