



## Dislocated Corneal Lamellar Flap Following Blunt Ocular Injury: A Case Report

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### Abstract

**Purpose:** We report a case of post-traumatic dislocated corneal lamellar flap with diffuse lamellar keratitis following ocular blunt injury without receiving previous refractive surgery procedure before.

**Methods:** Retrospective case report.

**Results:** The dislocated lamellar flap was surgically repositioned. DLK was treated with intensive steroid regimen. The best corrected visual acuity of the injured eye was 20/30 after treatment.

**Conclusion:** DLK may be caused by blunt ocular injury even without previous refractive surgery. The proper reposition of traumatic lamellar flap could reach good outcomes.

**Keywords:** Corneal lamellar flap; Refractive surgery; Blunt ocular injury

### Introduction

Diffuse Lamellar Keratitis (DLK), first discovered in 1988, is a noninfectious interface keratitis, usually occurred between corneal flap and stromal bed after laser in situ keratomileusis (LASIK) [1,2]. It can vary from a mild self-limiting condition that responds quickly to topical corticosteroid treatment to a severe condition associated with stromal melting, scarring, and a hyperopic shift<sup>3</sup>. We report a patient who never received refractive surgery presented diffuse lamellar keratitis and limited epithelial ingrowth following blunt ocular injury by a sharp steel bar.

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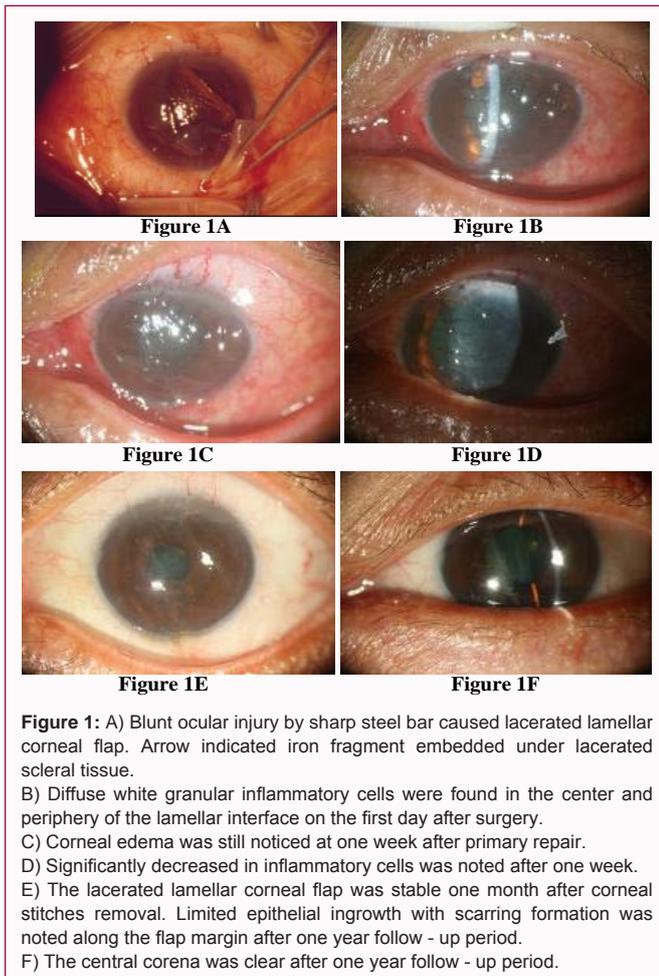
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### Case Presentation

The 48 year - old healthy male came to our emergency room described his left eye being injured by a steel bar two hours ago. His Uncorrected Visual Acuity (UCVA) was 20/800 in the left eye and 20/40 in the right eye. Slit - lamp microscopy revealed one 7 mm x 10 mm in size deep lacerated triangular - shaped lamellar corneal flap with depth to deep stroma in his left eye with moderate conjunctival hyperemia. The deep penetrating wound extended to conjunctiva and sclera with an iron foreign body embedded in deep sclera tissue (Figure 1A). Severe cornea edema and anterior chamber reaction with degree 2 flare reaction were discovered. No aqueous leakage was noted from the wound by Seidel test. The lens was clear and relative afferent papillary response was negative. The fundus exam disclosed attached retina. The patient denied of previous ocular trauma or surgery history. After iron fragment removal, the lamellar corneal flap and lacerated conjunctiva were irrigated with balanced salt solution cannula and repositioned carefully with interrupted suture. The presence of white granular cells was found in the center and periphery of the lamellar interface and Diffuse Lamellar Keratitis (DLK) was impressed on the first day after surgery (Figure 1B). The cellular reaction was much decreased after applying topical tobramycin and 0.1% fluorometholone for 1 week (Figure 1C, 1D). One month later, there was fibrotic scarring formation between corneal lamellar interface spaces (Figure 1E). The best corrected visual acuity of left eye was 20/30 (-1.50/-3.00\*85) with limited marginal epithelial ingrowth during the one year follow-up period (Figure 1F).

### Discussion

DLK is usually seen early or late onset after LASIK procedure [1-4]. Povidone - iodine solution, meibomian gland secretions, microkeratome blade debris, carboxymethylcellulose drops, interface hemoglobin, bacterial endotoxins, and epithelial defects at the time of LASIK were possible etiologic factors for the development of DLK. Both sporadic and epidemic cases of DLK have been reported [5]. In this case, ocular blunt injury created one lacerated corneal lamellar flap by sharp steel bar



in a similar way to LASIK flap by microkeratone. However, the instrument that produced the flap was not sterile; the stromal bed was only partially exposed and the flap was pushed aside into a pleated configuration. The accumulated inflammatory cells between the lamellar interfaces subsequently developed DLK in this patient. Prompt topical steroid treatment and early treatment are required for a fair outcome.

## References

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