51ST ECLSO CONGRESS · VIENNA, AUSTRIA · APRIL 24-25, 2026

NSAID-Induced Corneal Melting Following Uncomplicated Cataract Surgery in a Diabetic Patient

A Case Report — Ocular Surface Complication of Topical NSAID Therapy

Bunyamin Can, MD · Fatma Sumer, MD
Department of Ophthalmology, Recep Tayyip Erdogan University, Rize, Turkey

POSTER #17

⚠ **Diabetic patients with subclinical ocular surface disease represent a HIGH-RISK population for NSAID-induced corneal melt — screen before prescribing**

BACKGROUND

THE PROBLEM

Topical NSAIDs & Corneal Melt

NSAIDs widely used post-cataract for CME prophylaxis and pain control. Rare but sight-threatening: corneal melting through MMP-mediated stromal degradation.

HIGH-RISK PROFILE

Diabetes + Ocular Surface Disease

Reduced corneal sensation · Impaired epithelial healing · Subclinical dry eye · MGD → compounding risk factors

CASE PRESENTATION

PATIENT

72-year-old female

Type 2 DM · Mild MGD · Uneventful phacoemulsification

POSTOPERATIVE NSAID

Nepafenac 0.1% — 3× daily

Prescribed for CME prophylaxis post-uncomplicated cataract surgery

PRESENTATION — WEEK 3

Pain + BCVA 20/100

Central epithelial defect · Stromal thinning ~40% depth · Sterile cultures

CLINICAL PROGRESSION & MANAGEMENT TIMELINE

Wk 3 — **PRESENTATION**
Pain, BCVA 20/100 · Central epithelial defect · 40% stromal thinning · **Nepafenac discontinued immediately**

+48h — **RAPID PROGRESSION**
Stromal thinning → **60%** · Early descemetocele formation · Sterile cultures confirmed

D3 — **SURGICAL INTERVENTION**
Cyanoacrylate tissue adhesive applied · **Amniotic membrane transplantation** performed

Wk 2 — **POST-AMT**
Complete re-epithelialization achieved · Residual stromal scarring noted

6 Mo — **FINAL OUTCOME**
BCVA **20/30** with RGP contact lens · Residual scar · No recurrence

Rx — **MEDICAL MANAGEMENT**
Oral doxycycline · Topical medroxyprogesterone · Preservative-free lubrication

PATHOMECHANISM — TWO-STAGE MODEL

1. **Stage 1 — Epithelial Breakdown**
PGE₂ depletion by NSAIDs → impaired epithelial healing → persistent epithelial defect

↓

2. **Stage 2 — Stromal Degradation**
MMP upregulation (MMP-1, MMP-9) → collagen breakdown → progressive stromal thinning → descemetocele

Diabetes amplifies both stages: reduced corneal sensation → delayed recognition; impaired wound healing → prolonged exposure

RISK FACTORS IN THIS CASE

Type 2 DM
Reduced corneal sensation · Impaired epithelial healing

Mild MGD
Subclinical ocular surface disease pre-existing

Age 72
Reduced tear production · Goblet cell loss

Nepafenac
Potent COX-1/COX-2 inhibitor · PGE₂ depletion

⚠ **No single factor alone** — DM + subclinical OSD + potent NSAID = perfect storm for corneal melt in an otherwise uncomplicated case.

OUTCOMES AT 6-MONTH FOLLOW-UP

👁 **BCVA 20/30**
With RGP contact lens

✓ **Complete re-epithelialization**
Week 2 post-AMT

⚠ **Residual stromal scar**
Visual impact managed with RGP

Uncomplicated cataract surgery does not eliminate the risk of **NSAID-induced corneal melt**. In diabetic patients with any degree of ocular surface disease, **comprehensive preoperative OS evaluation including corneal sensitivity testing** is mandatory. A low threshold for NSAID discontinuation at the first sign of epithelial compromise can be sight-saving.

TAKE-HOME MESSAGES

1. **Screen before prescribing:** Comprehensive preoperative ocular surface evaluation + corneal sensitivity testing in all diabetic patients before initiating topical NSAID therapy
2. **Two-stage mechanism:** NSAIDs → PGE₂ depletion → epithelial breakdown → MMP upregulation → stromal melting. Diabetes amplifies both stages through reduced sensation and impaired healing
3. **Act early:** Discontinue NSAID immediately at first sign of epithelial compromise. AMT + cyanoacrylate adhesive + MMP inhibitors (doxycycline, medroxyprogesterone) are effective rescue therapy
4. **Risk-benefit individualisation:** Consider alternatives to NSAID (topical steroids, intracameral corticosteroids) for CME prophylaxis in high-risk patients with DM + ocular surface disease

Correspondence: **bnymncan1254@gmail.com**