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Clinical Evaluation of Vetrix® EyeQ™ Amniotic Eye Drops in the Treatment of Refractory Corneal Ulcers in Dogs

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Introduction

- The therapeutic management of refractory corneal ulcers in dogs remains a significant challenge in veterinary clinical practice, as these lesions often fail to respond to conventional treatments.
- To address this issue, a novel approach has been developed using an ophthalmic solution based on amniotic membrane suspension, known for its regenerative and anti-inflammatory properties, known as Vetrix® EyeQ Amniotic Eye Drops.
- In clinical settings, healing difficulties have been particularly noted in a distinct type of corneal ulcer:
    - Spontaneous chronic corneal epithelial defect (SCCED), known as Indolent Corneal Ulcer

- Spontaneous chronic superficial corneal ulcers typically develop in the absence of any identifiable external trauma or infectious agent. By definition, Indolent Corneal Ulcers are non-infected and persist due to poor adhesion between the anterior epithelial cells and the superficial layers of the corneal stroma.
- This type of ulcer is frequently associated with breed predisposition, particularly in brachycephalic breeds such as Shih-Tzu, French Bulldog, Pug, and Pekingese.

Vetrix® EyeQ Amniotic Eye Drops

The growth factors and immune-privileged components in Vetrix® EyeQ supports rapid cell migration and epithelial regeneration at the site of the corneal defect.

Corneal injuries trigger a pronounced inflammatory response. Thanks to its high concentration of anti-inflammatory agents, the amniotic-based Vetrix® EyeQ Eye Drops effectively modulate inflammation and create an optimal environment for healing.

High-molecular-weight hyaluronic acid (HC-HA) acts as a viscous, long-lasting lubricant, protecting the ocular surface from microtrauma caused by blinking.

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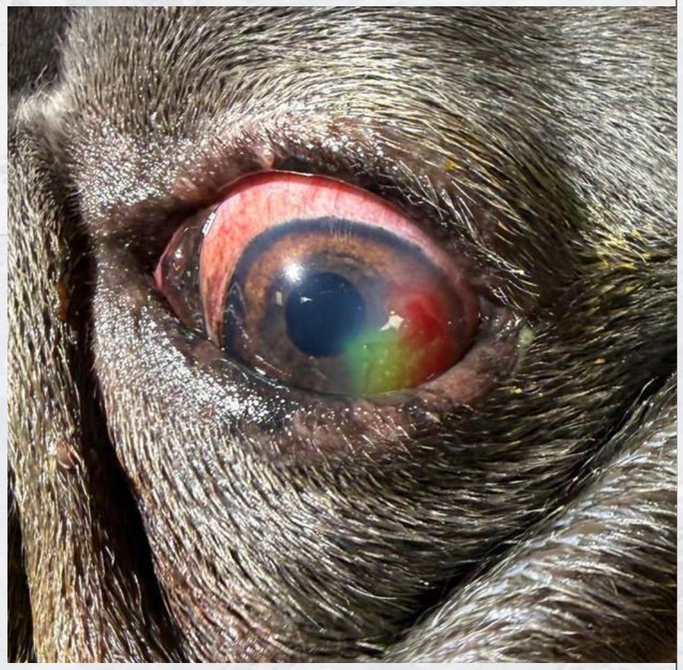
Corneal Neovascularization: A Key to Healing

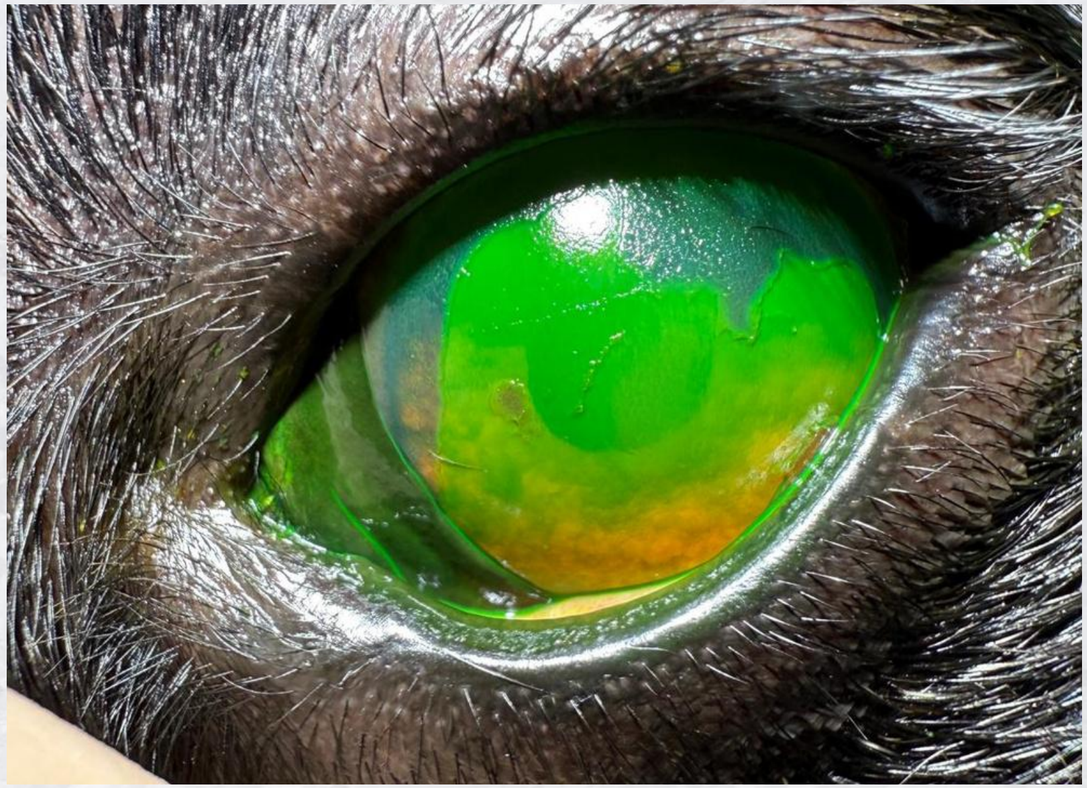
- Corneal neovascularization plays a vital role in the healing of refractory corneal ulcers.
- In an avascular tissue like the cornea, the absence of blood vessels limits oxygenation, nutrient delivery, and immune response.
- New vessel formation allows:
  - Better penetration of topical medication
  - Access for immune cells
  - Enhanced tissue regeneration
- Without neovascularization, healing is slow, incomplete, or even absent.



Stimulating Vascularization

- In SCCED, vascularization must be actively induced through repeated debridement (2–3 times), performed with a sterile cotton-tipped applicator.
- Clinical observation: Ulcers began to respond significantly better to Vetrix® EyeQ treatment after vascularization was established.
- Therefore, stimulating vascularization is not optional—it is a prerequisite for successful corneal healing in many refractory ulcers.

Before Debridement



After Debridement

Therapeutic Protocol

- Vetrix® EyeQ administration:
  - Applied as 1 drop, 3 times per day
- Combined with:
  - Topical antibiotics: Chloramphenicol or Tobramicine
  - Systemic antibiotic therapy: Doxycycline (7–10 days)
    - Other adjunctive treatments: autologous serum, hyaluronic acid eye drops
- Debridement:
  - Performed in indolent ulcers (SCCED)
  - Done with cotton-tipped applicator
  - Repeated 2–3 times if necessary, until corneal vascularization appeared
- Treatment duration:
  - Ranged from 3 to 12 weeks, depending on ulcer type and response

Clinical Study Overview

- **Location:** University Emergency Veterinary Hospital "Prof. Dr. Alin Bîrțoiu", Bucharest
- **Study period:** January 2023 – December 2024
- **Study population:** 11 dogs included in the study with a total of 11 affected eyes
- **Inclusion criteria:** Presence of refractory corneal ulcers, unresponsive to conventional therapy
- **Ulcer types included:** Indolent cornean ulcers (SCCED)
- **Diagnosis** based on full ophthalmological examination:
  - Menace response
  - Chromatic pupillary reflex (cPLR)
  - Indirect ophthalmoscopy
  - Intraocular pressure (TonoVet Plus)
  - Schirmer tear test
  - Fluorescein test

Clinical Case – Indolent Corneal Ulcer

- Patient: Jessie – French Bulldog, female, 7 years old
  - Diagnosis: Left eye (OS) – Indolent corneal ulcer (SCCED)
- Initial presentation:
  - Denuded epithelial cells with loose edges, positive fluorescein test
  - Moderate vascularization in the extern quadrant of the eye
- Treatment:
  - First debridement → chloramphenicol + serum
    - Systemic: Doxycycline + Symbiotic
    - Second debridement → started Vetrix® EyeQ, 3x/day
- Evolution: Fluorescein test turned negative after 2.5 weeks
  - Mild pigmentation developed at vascularized site
- Outcome: Ulcer healed completely
  - Final diagnosis: Post-ulcer pigmentary keratitis
  - Switched to Tacrolimus drops for pigmentation control

Conclusion

- Vetrix® EyeQ proved to be an effective therapeutic option in managing refractory corneal ulcers in dogs.
- An high success rate, with healing achieved in 3 to 12 weeks
- Repeated debridement was essential in indolent ulcers to promote vascularization
- The combination of micronized amniotic membrane and hyaluronic acid supported:
  - faster healing
  - reduced inflammation
  - minimal fibrosis
- Vetrix EyeQ offers a minimally invasive and well-tolerated alternative to surgical interventions

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Thank you