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Case Report

Management of Neurotrophic Keratitis with Phospholipid/Triglyceride Based Lipid Emulsion

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Abstract

A 66 years old female presented with a complaint of redness, tearing and "discomfort" of the right eye. The condition started about two weeks ago but was aggravated during the last four days when blurred vision appeared. She tried to use three types of artificial tear and steroid-containing drops but none improved her condition.

Medical history

Diabetes Mellitus treated for the last 10 years with Januet. She suffered of CVA (11/2017) Vertebro Basillary. Treatment with Micropirin 100 mg X 1/d. MRI reveals multiple ischemic foci in the right temporal lobe. She experienced loss of heat, cold and touch sensation on the right side of the face. The sensation loss started six months ago and reached total loss about three months ago.

She was diagnosed with Neoplasm of the trachea, bronchus and lung (11/2018). Pleural effusion was diagnosed as containing NSCLC Adenocarcinoma cells. Treatment started with Tagrisso and later was changed to Giotrif (6/2019).

Eye Examination

Visual acuity: Right Eye - 20/30 SC, PH, NO correction; Left Eye - 20/20-; Anterior Segment: Right Eye: Redness of conjunctiva and tearing; Diffuse corneal staining with severe filamentary corneal epithelial alteration; Severe keratitis (Figure A); Left Eye: Normal conjunctiva and cornea; BUT 7sec; All other clinical and functional parameters were within normal limits.

Discussion

The presented patient suffers from unilateral severe keratitis of the right cornea accompanied by loss of sensation on the right side of the face. In the background Diabetes Mellitus and malignancy treated with biological medications. All these factors impose the diagnosis of Neurotrophic Keratitis (NK) stage 1.

NK is a degenerative disease characterized by corneal sensitivity reduction, corneal epithelium defects created by spontaneous epithelium detachment, and deficit of corneal healing. The danger in NK is the loss of sensation. The affected person is not aware of the condition and it may progress gradually to a corneal abscess and perforation of the cornea at the end stage. Thus, misdiagnosis at the beginning may lead to a corneal abscess. NK is classified according to the severity of the corneal damage: alteration of the epithelium (stage1), persistent epithelial defect (stage 2), and corneal ulcer (stage 3) [1].

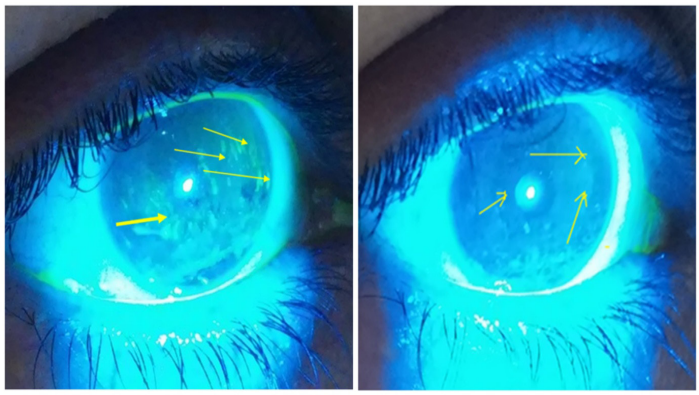

Fig. A. Yellow arrows point to filamentary corneal epithelium

Fig. B. Yellow arrows point to same areas with **NO** filaments.

Figures: A: Yellow arrows point to filamentary corneal epithelium, B: Yellow arrows point to same areas with no filaments

No specific medical treatment exists and if the keratitis progresses further than stage 1, only surgical procedures such as amniotic membrane transplantation, or conjunctiva transplantation may cure the epithelial defects and developing ulcer [2-4]. The common lubricant artificial drop products are not effective in preventing cornea deterioration to stage 3.

Lipitear is a phospholipid/triglyceride-based lipid micro-emulsion that was shown in preclinical studies to facilitate fast and complete healing of an injured corneal epithelium, resulting in a normal mature epithelium structure. Furthermore, clinical studies following photorefractive keratectomy (PRK) [5] and dry eye syndrome [6] demonstrated the clinical efficacy of Lipitear.

Based on those data, we decided to treat this patient with Lipitear. Two weeks of treatment (one drop four times a day) eliminated, almost completely, the filamentary denuding of the corneal epithelium and almost 75% of the corneal surface was clean of punctuate keratitis (Figure B). Based on the positive results, the patient continues this protocol of treatment.

Conflict of Interest Disclosures

Arieh S. Solomon and Naphtali Savion are the inventors of the Patent on which the Lipitear was developed: Preparations for the treatment of eyes; US Patent # 5,510,329; Date of Patent: April 23, 1996.

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