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APPLICATION OF A NEW PROTOCOL FOR OBTAINING ETHYLENEDIAMINETETRAACETIC ACID (EDTA) IN BAND KERATOPATHY TREATMENT: A CASE SERIES

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Introduction and Purpose: Calcific band keratopathy (CBK) is a degenerative condition of the cornea characterised by deposition of fine grayish-white calcium opacities in the superficial cornea. As the condition progresses, can cause loss of vision, increased glare, corneal erosion-like symptoms and, in some cases, ulceration. Na2EDTA is the most widely used treatment. We aim to evaluate the effectiveness and safety profile of a new simple and easy method to obtain ethylenediaminetetracetic acid (EDTA) as an alternative to sodium EDTA (Na2EDTA).

Material and Methods: A prospective case series including patients with calcific band keratopathy diagnosis was conducted. A simple protocol for EDTA solution preparation was followed, according to Julio Narvaez et al: a purple-topped 10-mL K2EDTA Vacutainer blood collection tube containing 18 mg of K2EDTA was used; after tube cap removal, 0.3 mL of sterile water was injected into the tube containing; then a sterile cotton–tipped applicator was used to absorb the fluid, followed by sweeping of the interior surface of the tube to dissolve the K2EDTA coating the inside, creating an EDTA solution.

Results and Discussion: Five patients were enrolled in the study. All patients presented with symptomatic CBK affecting the visual axis. Treatment procedure involved corneal epithelium removal with alcohol 15% solution, recurrent application of topical EDTA solution obtained as previously described and subsequent debridement. An amniotic membrane transplant was performed in patients considered to be at risk for persistent epithelial defect. Close follow-up of the patients was assured after the procedure and anterior segment photos were taken before and in each visit, demonstrating a good anatomical and functional response. All patients maintained or improved visual acuities and the cornea became more transparent - making safer cataract surgery possible in some patients.

Conclusion: EDTA act as a calcium chelating agent. Given the necessity of specially equipped pharmacies to obtain Na2EDTA, the need arose to create simpler, easier and faster protocols for routine clinical practice. In this case series, we used a recently published protocol for K2EDTA obtention which proved to be easily available and effective for the treatment of band keratopathy.