

Combined Treatment for Band Keratopathy

To the editor:

I read with interest the two case reports by Kwon et al. on "New Treatment for Band Keratopathy: Superficial lamellar Keratectomy, EDTA Chelation and Amniotic Membrane Transplantation" (1). In their article, they describe two cases of calcific band keratopathy (CBK) that were treated with a combination of EDTA chelation, superficial keratectomy and amniotic membrane transplantation. The authors concluded that this combined treatment was a safe and effective method for the removal of deep situated calcium plaques, thus allowing the recovery of a stable ocular surface.

With my colleagues, I have recently published a study that looked at the effectiveness of EDTA chelation in CBK (2). In the 65 eyes of 54 patients that we have followed after EDTA chelation, we found significant visual improvement of two or more lines in up to half of the eyes that were treated, as well as symptomatic relief in 98% of the patients. Some of our cases with deep and dense CBK required from 5 to 45 min of EDTA application for complete resolution. This might explain the unsatisfactory results with EDTA chelation alone in the two cases reported by Kwon et al. who applied the EDTA for just 2.5 min in both cases. The authors reported no recurrence of symptoms in their patients during their mean follow-up period of 13.5 months. In our study, we found that the mean time for recurrence was 17.7 yr. The absence of any recurrences in the cases described by Kwon et al. could be attributed to their shorter follow-up period rather than to the success of the combined treatment modality they describe.

In short, I believe that EDTA chelation, when used properly, is an effective treatment for CBK. It is simple, inexpensive and avoids the additional risks of an invasive procedure such as superficial keratectomy, or the added costs of amniotic membrane transplantation, especially in eyes with poor visual potential. We recommend it as a first line treatment for calcific band keratopathy.

REFERENCES

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Reply:

We thank Dr. Najjar for his comment. Achievement of significant visual improvement as well as symptomatic relief in the patients with calcific band keratopathy (CBK) by Najjar et al. is valuable (1). We agree with their description of EDTA chelation, when used properly, as a simple, effective and inexpensive treatment for CBK, and that it is used for treatment of corneal calcific lesion, in which calcium impacted superficially and locally. However, we intended to report the severe and complicated case of band keratopathy and to describe the successful operating techniques of EDTA chelation, superficial keratectomy and amniotic membrane transplantation (2). In our two cases, one patient had been diagnosed as band keratopathy accompanied with Vogt-Koyanagi-Harada syndrome, and the other had a band keratopathy accompanied with partial limbal deficiency, endothelial decompensation, and pseudopterygium. The visual acuities of the two patients were very poor with light perception and the other with hand motion perception. The band keratopathy developed 10 and 8 yr ago in two patients, and had been aggravated, respectively. Slit lamp examination revealed that calcium plaque was deposited densely, broadly and deeply in the stroma layer. On the basis of these findings, we considered how we could infiltrate EDTA to the deposited calcium plaque, and decided to trephine the stroma sufficiently to facilitate the infiltration of EDTA solution. We could, therefore, remove the calcified plaque by blunt spatula to permit a clear, smooth surface without any scraping in either case. Our sufficient trephining into the stromal layer allowed EDTA to dissolve into the pathologic potent space between the destroyed stroma by calcium plaque. There could be possibility of toxicity of EDTA to corneal wound healing in a long term application as well as corneal endothelial decompensation.

Regarding the comment on the recurrence time, we agree that the absence of any recurrences in our cases was attributed to the short follow-up period. However, as you reported that the recurrent time ranged from 1 month to 26 yr (mean time of 17.7 yr), the band keratopathy's cause and condition

were very various and changeable, and were possibly induced secondarily by other disease. Anderson et al. (3) reported that the return of calcific deposits was noted in four of 16 (25%) eyes at 1.5, 2, 5, and 13 months postoperatively. The recurrence rate was variable according to the reports. It is possible to explain all those recurrence of band keratopathy, but we can only assume that the recurrence of band keratopathy is attributed to the different and various pathologic causes and/or conditions. Therefore, we consider that further research into this issue is required for clarification.

Conclusively, we aspire toward the perfectly treatment for band keratopathy patients and hope to be able to thoroughly investigate more relevant cases regarding the nature and characteristics of this elusive disease.

REFERENCES

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