

Retained Bandage Contact Lens for More Than Two Years in One Eyed Patient: A Case Report

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ABSTRACT

Aim of the work: this study aimed to report a case of a bandage contact lens (BCL) retained for two years and six months in its primary position, which was associated with distinct clinical appearance over the patient's only Seeing Eye.

Patient and methods: a 70-year-old one-eyed female patient with a history of systemic hypertension and poor vision in the left eye due to an old trauma was presented with right eye spontaneous corneal perforation and leak. The patient was treated with cyanoacrylate corneal glue along with a bandage contact lens (BCL). For the unknown reasons, the patient did not come for a follow-up medical care and presented after two years and six months with the retention of the BCL in its original position. **Results:** the retained BCL developed an atypical clinical appearance in the form of granular deposits along the edges made of mixed epithelium and mucous deposition. We hypothesize that this deposition occurred as an adaptive mechanism and aided in BCL stabilization and prevention of serious contact lens-related complications.

Conclusions and Importance: to our knowledge, long-term in-place retention of BCL with distinct clinical appearance has not been characterized before. Despite the long period of retention, the lens did not migrate to the local vicinity and presented any serious complications. This report highlights the importance of appropriate patient education and counselling to ensure their compliance, thereby preventing any unfavourable future complications.

Keywords: bandage contact lens, retained, case report.

INTRODUCTION

Contact lenses have been associated with optical, medical or even cosmetic enhancement and visual aid in order to correct myopic conditions, hyperopia, ophthalmic diseases and refractive error^[1, 2]. Contact lenses can also be used as an ocular therapeutic system in some diseases like glaucoma and severe infection as a drug delivery system^[3, 4].

Likewise, bandage contact lenses present themselves as a versatile form of soft contact lenses that are widely used to promote healing of the corneal epithelial defect such as after refractive surgery or trauma. These lenses protect the corneal surface from any mechanical trauma and aid in reducing any associated pain^[1, 2, 5, 6]. Commonly associated complications are corneal epithelial defects, microbial or sterile keratitis, corneal epithelial edema, giant papillary conjunctivitis and blurred vision due to mucus deposition^[7-10]. Accordingly, several ocular surface changes can occur due to extensive contact lens usage without proper care. These include transient appearance of black lines between the endothelial cells that disappear once lenses are removed^[11], alteration of corneal curvature, corneal thinning due to chronic

hypoxia^[12, 13], loss of epithelial layers integrity^[12] and corneal vascularization^[14, 15]. These complications are significantly associated with time duration of contact lens use^[15]. Few cases related to retain contact lenses have been previously published that presented complications like mass, cyst and/or chalazion^[17-24].

In this report, we documented a case of an elderly one-eyed female patient who retained her bandage contact lens (BCL) for more than two years and presented in the clinic with a peripheral contact lens epithelization and mucous deposition. The layer of epithelium and mucus deposited at the periphery of the lens was speculated to be a natural defence mechanism that may have aided in preventing long-term serious contact lens-related complications.

The study was done according to the ethical board of King Abdulaziz university.

CASE HISTORY

A 70-year-old uneducated female patient with systemic hypertension on medication was referred from rural area to the emergency room

as a case of right eye spontaneous corneal perforation and leak. Her past ocular history disclosed the loss of vision in the left eye in childhood. There was no history of trauma or any other systemic illness apart from hypertension and she did not exhibit any clinical features of systemic vasculitis or autoimmune condition. The patient did not use any topical ophthalmic medications previously and her vitals were stable on the day of examination. Visual acuity was at 4 feet hand movement in the right eye and no perception of light in the left eye. Intraocular pressure was 11 mmHg for the right eye and 9 mmHg for the left eye. Slit lamp examination presented a mixed type of blepharitis, a diffuse corneal scarring with vascularization and 2x2 mm central area of thinning with a self-sealed leaking. The anterior chamber was shallow in the right eye. This corneal scarring and vascularization presented signs of sequela due to old trachoma infection. Left eye presented total dense corneal opacity with phthisis bulbi due to childhood trauma. Fundus exam of the right eye was problematic due to corneal opacity; however, the posterior pole was within normal range when observed under B-scan ultrasonography. Accordingly, cyanoacrylate corneal glue along with bandage contact lens (BCL) (Biomedics 55 ocufilcon D 45%, water 55% with UV blocker, (BC 8.6) D -0.5) (CooperVision, Fairport, NY) was administered and topical antibiotics, antiglaucoma, cycloplegics and lubricants were prescribed. Two weeks later, the eye was stable and the anterior chamber became deep. BCL kept in place and the patient was asked to follow-up after one month.

Unfortunately, for unknown reasons, the patient did not attend her follow-up appointment and was presented after 2 years and 6 months to the emergency with a complaint of right eye foreign body sensation. She was not seen by an ophthalmologist during that period and no ophthalmic medications were prescribed. Upon examination, her vital signs were stable. Visual acuity was counting fingers 6 feet in the right eye and no perception of light in the left eye. Intraocular pressure was 15 mmHg for the right eye and 7 mmHg for the left eye. Slit lamp examination demonstrated quiet eye with a retained in place BCL over small central cyanoacrylate glue with total corneal scar and vascularization. There was a peripheral 360-degree granular deposit at the edge

of the BCL as illustrated in **Figure 1**. The anterior chamber was deep with a difficult view due to corneal opacity and B-scan ultrasonography displayed normal posterior pole. The left eye showed phthisis bulbi. Accordingly, the BCL was removed and found adhered to the conjunctiva during removal. The BCL was sent for routine histopathological and microbial exams. Corneal examination after BCL removal exhibited diffused scar with vascularization and mild central thinning with no obvious leak. The patient was referred to the anterior segment division for further management and follow-up.

Histopathological exam of the granular layer at the edge of BCL revealed epithelial cells mixed with mucus as illustrated in **Figure 1**. Culture and sensitivity revealed no growth of any organisms.

DISCUSSION

Despite the fact that contact lenses are considered safe for the therapeutic purposes and correcting refractive errors [7, 10], they can lead to serious vision-threatening complications [16]. About 6–21% of contact lens users develop contact lens-related complications yearly [25, 26], such as microbial keratitis, lens deposition, neovascularization, peripheral sterile infiltration and allergic conjunctivitis [7-10]. Several predisposing factors lead to increase the risk of these complications such as pre-existing corneal conditions, mechanical micro-trauma to the corneal epithelial, prolonged daily wear, dry eye, overnight wear and sleeping with contact lenses. Patient-related factors are noncompliance with lens care procedures such using tap water to clean and poor hygiene. [7, 8, 9, 10, 20, 27, 29]

In this case, our patient was one-eyed and complied poorly with follow-up schedule. She presented 2 years and 6 months after we administered the BCL for the perforated descemetocoele on her only seeing eye. Our curiosity rose while observing how the BCL remained in its primary position for more than two and half years. Researchers have previously commented that this phenomenon can be substantiated owing to the high tolerability of these types of lenses when compared with hard lenses. [18, 30] It has been reported that the retained soft contact lens usually migrates to the upper sub-tarsal space

and upper fornix trap [17-24]. Several factors contribute to the lens movement and rotations including, contact lens type, a way of fitting and peripheral curve design [30]. Long duration usage and/or sleeping with a retained contact lens have been significantly associated with a serious microbial keratitis in previous studies [9, 10, 24, 31]. Interestingly, our patient was fortunate that even though she presented late, no complications related neither to the corneal perforation nor to contact lens retention were observed.

In this case the chronic retention of BCL was associated with strange clinical appearance. A granular layer of epithelium grown over the edges of BCL along with deposition of mucus was observed when the BCL was removed from the

right eye. This epithelial and mucus deposits made the BCL sticky and more adherent to the conjunctiva which may have played a major role in the BCL stabilization, preventing it from falling or migration to common places.

We hypothesized that this epithelial growth occurred as an adaptive mechanism due to the chronic irritation and friction the edge of the BCL over conjunctival epithelium. To best of our knowledge, long-term in-place retention of BCL and/or this clinical appearance has not been described before. This report highlights the importance of appropriate patient education and counselling especially in the case of patient discussed above so as to ensure patient compliance and prevent unfavourable future complications.

FIGURES

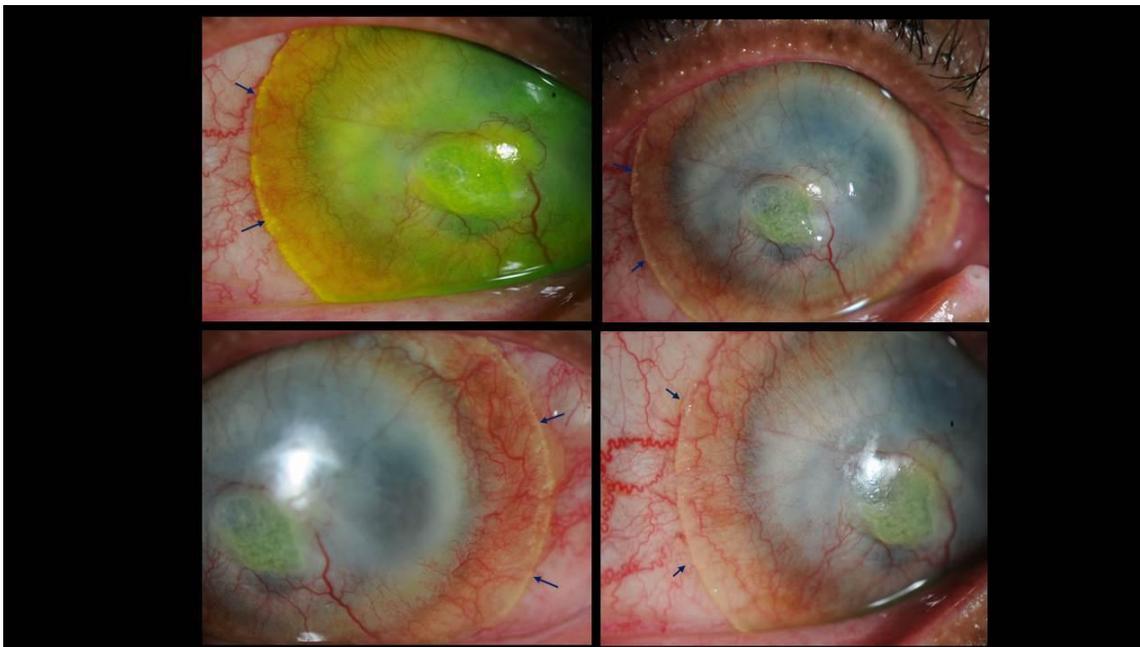


Figure 1: external image of the right eye illustrating bandage contact lens over scarred and vascularized cornea in addition to retained small cyanoacrylate corneal glue with peripheral granular layer of epithelium assimilated with mucus. (as depicted by blue arrows)

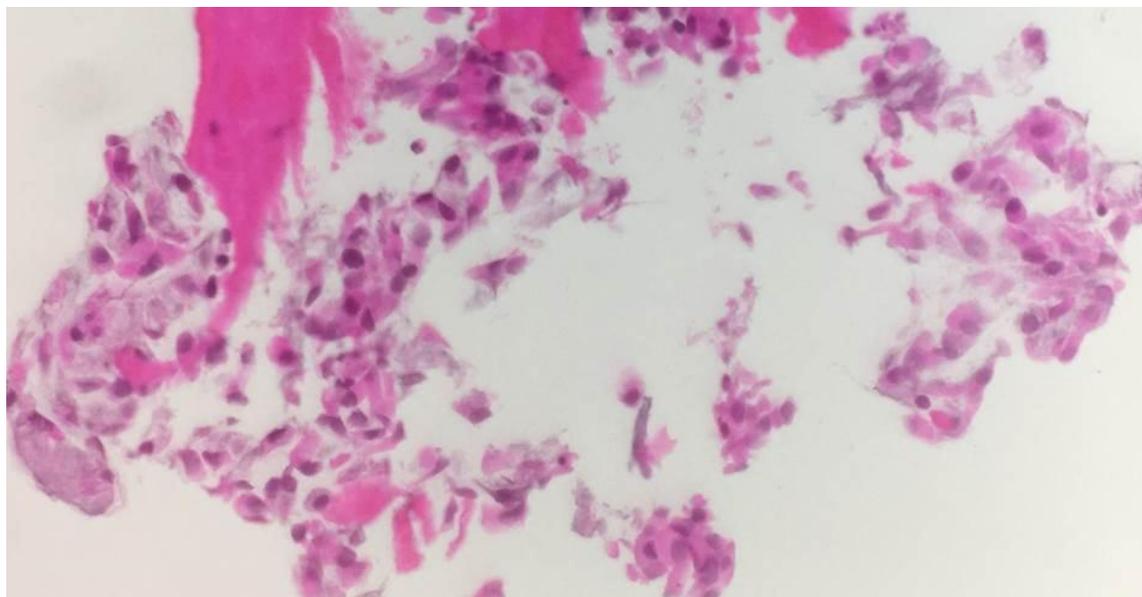


Figure 2: microscopic examination of the granular deposits around the BCL, shows a mixture of intact and fragmented epithelial cells along with mucus. No inflammatory cells or organisms are noted. (H&Ex400)

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