Fitting a notched Rose K2 XL lens to a conjunctival pinguecula.

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INTRODUCTION

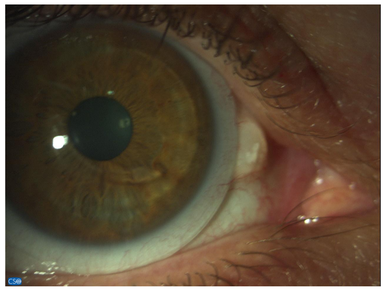
Contact lens fittings for irregular corneas represent one of the greatest challenges that practitioners have to face. Fitting modern large diameter GP contact lenses, such as Rose K2 XL, can improve lens centration, comfort and corneal health, increasing wearing time in cases of high irregular astigmatism [1,2]. However, in some cases the sclera presents also some irregularity, which requires a customized lens' edge lift, in order to achieve an optimal lens fitting [3].

We describe a case when the conjunctival irregularity is caused by a pinguecula and how the problem was solved with a customized edge-notched Rose K2 XL semi-scleral lens.

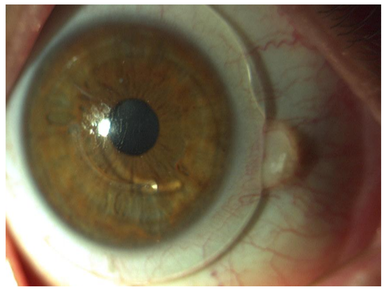
METHODS

A 47 years old man with intra corneal ring segment secondary to keratoconus on his right eye and a nasal conjunctival pinguecula,, was first intended to be fitted with regular Rose K2 XL lens. However, the excessive scleral irregularity caused by pinguecula, caused lens' edge raising, conjunctival staining and a reduction of wearing time (**Picture 1**). A quadrant specific edge lift Rose K2 XL semi-scleral contact lens was then tried, but there was still excessive pressure on the pinguecula (**Picture 2**). In collaboration with the designer and manufacturer, the edge lift of the lens was designed and customized to include a notch corresponding to the pinguecula zone, and a prism ballast of 1.5 D was included at 270 degrees to stabilize the lens to prevent rotation. The notch on the first lens proved to be too large in diameter, causing lens rotation, bubbles and discomfort (**Picture 3**). A second notched lens was ordered with a smaller notch and increasing prism ballast, which produced an optimal lens fit (**Picture 4**). The diagram of the edge-notched lens is shown in **Picture 5**. The lens fitting was stable and the subject was able to wear the lens 10 hours a day.

RESULTS



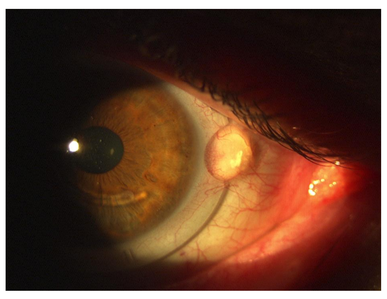
Picture 1: Rose K2 XL with regular edge lift. Notice how the lift bears on the pinguecula.



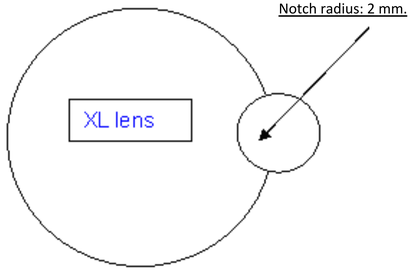
Picture 2: Rose K2 XL quadrant specific edge lift. There is stil too much lens bearing on the pinguecula causing the edge of the lens to lift off.

Final lens parameters:
BC: 7.00 mm
Power: -6.75 diopters
Diameter: 14.60 mm
This lens provided a visual acuity of 1.0

Picture 3: Rose K2 XL lens with an excessively large notch.



Picture 4: Rose K2 XL lens with appropriate size notch. The pinguecula is free of lens bearing and lens remains stable.



Picture 5: diagram of customized edge-notched lens.

DISCUSSION

Sometimes, not only the cornea presents irregularity, but the sclera as well. Raised areas on the conjunctiva such as those caused by glaucoma shunt, ptyrigium, pinguecula or trauma, avoid the use of regular semi-scleral or scleral edge lift design, forcing to make a customized lens. Sometimes, flattening the edge lift is enough to eliminate the lens bearing over raised areas. However, in some cases it is necessary to make a notch to accommodate the elevated area. This method allows the lens to be stable, comfortable and it provides an optimal lens fitting. If the scleral lens does not include any back surface toricity, it is necessary to include prism ballast in the lens to avoid rotation.

CONCLUSIONS

In some cases, a completely customized contact lens is necessary to achieve an optimal lens fit. Practitioners, designers and manufacturers must work together in these cases to achieve the optimum outcome for the patient.

REFERENCES

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[3] Romero-Jiménez M, Rose P. Fitting a customised Rose K2 XL lens to a glaucoma shunt patient. Poster. GSLS, Las Vegas, NV, USA. 2014.

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Paul Rose is the inventor of the Rose K lenses.