RIGID GAS PERMEABLE CONTACT LENSES FITTED IN A CASE OF CONGENITAL GLAUCOMA

ADAPTACIÓN DE LENTES DE CONTACTO RÍGIDAS PERMEABLES AL GAS EN UN CASO DE GLAUCOMA CONGÉNITO

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ABSTRACT

Case report: A 27-year-old woman with congenital glaucoma with high myopia, low visual acuity and nystagmus in both eyes, was referred for contact lens fitting. We fitted her with aspherical rigid gas permeable (RGP) contact lenses with high transmissibility, which she wore on a daily basis. Her visual acuity improved with the wearing of these lenses, which remained comfortable whilst being worn for 10 hours a day.

Discussion: Contact lenses were fitted according to her corneal topography. Gas permeable contact lenses were chosen as first choice and with proper fitting and vigilant follow-up they may be worn safely on a daily basis (Arch Soc Esp Oftalmol 2008; 83: 377-380).

Key words: Congenital glaucoma, high myopia, low visual acuity, nystagmus, rigid gas permeable contact lenses (RGP CL).

RESUMEN

Caso clínico: Mujer de 27 años tratada de glaucoma congénito con alta miopía, baja AV y nistagmus en ambos ojos, fue referida para adaptar lentes de contacto. Se adaptan lentes de contacto rígidas permeables a los gases (LC RPG) asféricas y de alta transmisibilidad en uso diario. La paciente mejoró la AV con confort durante 10 horas al día de porte.

Discusión: La adaptación de lentes de contacto se realizó teniendo en cuenta la topografía corneal de la paciente. Consideramos las lentes de contacto permeables al gas como las lentes de primera elección para estos pacientes, que con una adecuada adaptación y seguimientos pueden utilizar con seguridad lentes de contacto RPG en uso diario.

Palabras clave: Glaucoma congénito, alta miopía, agudeza visual baja, nistagmus, lentes de contacto rígidas permeables a los gases (LC RPG).
INTRODUCTION

In Primary Congenital Glaucoma the pathologic rise of the IOP produces a spreading out of the ocular tissues resulting in the appearance of corneal edema, striae, corneal opacities and alteration of the different structures of the eye, as well as progressive myopia due to the scleral elasticity (1). The appearance of nystagmus is not frequently seen in congenital glaucoma and if it does exist this means there is serious visual deficit.

The use of rigid gas-permeable contact lenses (RGP CL) is the first choice for patients that have high myopias and/or corneal irregularities since they provide greater optical quality and safety in use. There are no contraindications in patients having undergone various congenital glaucoma treatments, as long as they are only used strictly during the day (2,3); however, not a lot of research has been done on this.

CASE REPORT

A 27-year-old woman referred for contact lens fitting from the Ophthalmology Department of the «San Carlos» University Hospital in Madrid (June, 2006), diagnosed and treated since birth for congenital glaucoma. The patient also has nystagmus.

In her eye history the patient mentioned four surgeries in each eye from birth until age ten and then a later drainage implant inserted in each eye at 18 and 21 years of age.

She is currently under pharmacological treatment for the right eye (RE) and uses eye drops in both eyes.

The patient has corrective lenses with -11.75 D in both eyes with which her VA reaches 0.05 and 0.16 in the RE and left eye (LE), respectively. We performed subjective refraction and with this: RE: -14.00 D and LE: -14.00 -1.00 at 90° reaching a VA of less than 0.05 and 0.2 + for each eye, respectively.

The corneal topography revealed corneal irregularities in both eyes (fig. 1a and b).

The pupils show asymmetry, shape alterations, decentred position and average diameters of 3 and 6 mm in RE and LE, respectively.

The biomicroscopic evaluation of the cornea showed a decrease in corneal transparency, poor tear quality with a 2 second tear break-up time and diffuse fluorescein staining located mostly in the lower third of the cornea. The corneal diameter was 16 mm in both eyes.

After assessing the results of the evaluation it was decided to start the RGFL fitting. Several tests were done and the definitive lenses fitted were Comfort RGP (Contamac®, UK) with an aspherical design (AZV Oxicon Comfort) from Lenticon® Labs (table I and fig. 2). This material is made by combining high-purity fluorsilicone polymers with a hydrophilic component and DK 60 (modified Fatt).

The VA achieved by the patient for the RE was 0.05 and for the LE 0.3+1. Binocular VA was 0.4 - 2.

The lenses were worn progressively until a maximum of between 8 and 10 hours was reached.

Fig. 1: Topography of the patient’s right (a) and left (b) eyes.
always worn only during the day. The patient mentioned problems in her proximate vision at first while using the contact lenses up to a month after using them regularly. This is due to the fact that, in an eye with myopia, the convergence and accommodation required with contact lenses is greater than with glasses (2).

In October, 2006, the patient suffered a fall that caused trauma with choroidal detachment in the LE, thus requiring further surgery in that eye. Once treated, the lenses lost during the fall were replaced in January, 2007. The changes in the LE required slight modifications in the power (–13.00 D) and the eccentricity (0.4) of the left lens, reaching a VA of 0.05 in RE, 0.3 2 in LE and binocular VA of 0.3 –2 four months after using the lenses.

During the adaptation process, her LE showed a localized staining in the inferonasal area, with no mechanical cause due to the contact lens (Figure 3). Use of the lenses was not suspended with this lesion. The patient was referred to the ophthalmologist who diagnosed the lesion as a trophic ulcer and started treatment with autologous serum drops, which resolved the lesion in one month (3). She has since continued to use the contact lenses during the day.

### DISCUSSION

The adaptation process for gas-permeable contact lenses was done in this case based on corneal topography. Tolerance to the RGPL in this case is very good and the patient saw an improvement in her visual quality.

There has not been a lot of research done on RGP contact lens fitting in patients with congenital glau-
coma, so the contraindications are not known. However, greater control is necessary due to the possibility of infection (4,5). We currently have a wide variety of designs and materials for RGP CL that allow for safe fitting and usage, which is why we consider them to be first choice lenses, with frequent check-ups recommended.

REFERENCES