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Free Papers

XENIA™ Lenticule for management of keratoconus or post-LASIK ectasia: initial results of the Xenia trial

Free Paper Details

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Abstract Details

Purpose:

The management of high astigmatism and myopia in cases of keratoconus and post-LASIK ectasia can be challenging. Surgical options include corneal transplantation and corneal reshaping - using ring segments or Stromal Lenticule Addition Keratoplasty (SLAK). We describe a form of SLAK using a XENIA™ Lenticule - a novel biocompatible corneal lenticule of highly purified corneal collagen fibres of porcine origin. Initial results of the first 6 patients treated with this technique are presented

Setting:

Optimax Eye Clinics, UK

Methods:

A total of 6 eyes of 6 patients have undergone the procedure. 4 eyes with keratoconus and 2 with post-LASIK ectasia. A custom corneal stromal pocket of 100µm depth and 8.7mm diameter was created with a 3.7 mm access port using an IntraLase femtosecond laser. A 120µm thick, 7.2mm diameter XENIA™ (Gebauer) lenticule was implanted into this stromal pocket through the 3.7 mm port. No sutures were used. Post operatively topical dexamethasone and chloramphenicol were used four times a day. Pre and post-operative topography, pachymetry and intraocular pressures were recorded as well as aided, unaided and corrected vision

Results:

Following implantation of the lenticule, average corneal thickness was increased from 401µm to 513µm. Average optical k readings were not statistically altered (51.4 D vs 51.5D). Average anterior corneal astigmatism decreased from 7.4 D to 2.0D. Unaided vision improved from 1.74 LogMar to 1.54 LogMar. (Awaiting BCVA). There was one case of post operative interface haze which resolved with topical treatment. There were no other adverse events.

Conclusions:

There was a significant improvement in uncorrected vision and reduction of corneal astigmatism. If long term results show similar results, this technique and lenticule could be used to expand the repertoire of surgical options available to these difficult cases. As the lenticule is antigenetically neutral, rates of rejection are expected to be minimal. There is no reliance on human tissue donors, solving the two main issues of current surgical management of these patients – rejection and shortage of donor material. This method and lenticule could therefore play a significant role in the future management of keratoconus and post-LASIK ectasia patients.

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