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Intraocular Pressure Variability Following Xenia Corneal Implant

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Purpose: The management 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. Corneal thickness is increased following surgery and this can lead to errors in intraocular pressure measurements. Initial results of the first 12 patients treated with this technique are presented

Setting: Optimax Eye Clinic, Leicester, UK

Methods: A total of 12 eyes of 12 patients have undergone the procedure. 9 eyes with keratoconus and 2 with post-LASIK ectasia. A custom corneal stromal pocket of 100 to 160 µm depth and 8.7mm diameter was created with a 3.7 mm access port using an Intralase femtosecond laser. A 120/80/45 µm thick, 7.2mm diameter 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, 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). 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

IOP readings preop and postop were identical

Conclusions: No effect was seen with IOP readings following Xenia Implants. Large studies needed to validate these findings

Do you want to apply for a Trainee Bursary?: No

I confirm that at least one of the co-authors is an ophthalmologist: Yes

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