A new allotransplant for lamellar keratoplasty

Muldashev E. R., Nigmatullin R. T., Kadyrov R. Z.

The Russian Eye and Plastic Surgery Center has developed a new biomaterial for lamellar keratoplasty of ALLOPLANT series as an alternative material to the native cornea. It is a semitransparent biological material of white colour, 100 and 200 mkm in thickness, of a rounded configuration of 5-9 mm diameter and of a circular configuration for atypical keratoplasty. This Alloplant was used for surgical treatment of leucomas, herpetic keratitis, ulcer, recurrent pterygium, etc. Due to different indications lamellar keratoplasty was performed with therapeutic, barrier and meliorative aim. 175 patients were operated with the use of Alloplant. The Alloplant was gradually replaced with host cornea tissue within 6 months. Cornea transparency in follow-up periods depends on a condition of the recipient’s cornea bed. Transparent substitution of the alloplant was observed on transparent bed in 88,8% and on the semitransparent bed in 18,6%. Transparent substitution was not observed on the opaque base. When alloplant was used as a barrier, we found the decrease of the blood vessels growth into cornea in 69% of cases. This surgery was a preparative step for penetrating keratoplasty. This Alloplant has the following advantages: no immune reaction, no problems of donor material harvesting and long-term storage of 5 years and more. All these features allow to recommend this Alloplant for lamellar keratoplasty for common use in clinics.

"Alloplant" repair of eyeball conjunctiva


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Purpose. To develop an allograft for conjunctiva repair with low antigenicity, rapid epithelialization and replacement thereof by a conjunctiva-like tissue.

Methods. Histologic (42 rabbits), immunologic, clinical (199 patients with post-burn symblepharon, pterygium and tumors). The follow-up period was 1 - 8 years. Selection of tissues for transplantation was accomplished under the Alloplant technology (E.R. Muldashev et al., 1978).

Results. Following the dosage extraction of glycosaminoglycans the ehin fascias contain heparansulphates and chondroitinsulphates. After being transplanted they can readily take root, become vascularized and coated by epithelium with subsequent gradual (3-4 months) replacement by a conjunctiva-like tissue. The production technology permits to preserve the required tissues for over five years. In cases of post-burn symblepharon deep conjunctiva fornices have been created in 62.2%. The good cosmetic effect may be explained by the replacement of the allograft by a tissue similar to that of the conjunctiva.

Conclusions. The described alloplant for conjunctiva repair allows to achieve good clinical results and can be considered as an alternative grafting material to conjunctiva surgery.