

Comparison of Limbal and Conjunctival Autograft Transplantation in Corneal Surface Reconstruction in Rabbits

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摘要

Abstract

Destruction of corneal surface was created in one eye of 24 rabbits by n-heptanol corneal epithelial debridement and surgical removal of limbal zone. One month later, the animals were equally subdivided into three groups of eight for limbal transplantation, conjunctival transplantation, and control without transplantation. During a 6-month postoperative follow-up, all corneas in the control group showed progressive vascularization and conjunctivalization. All corneas with limbal transplantation showed progressive decrease of vascularity, verified by fluorescein angiography. In contrast, all but one of the eight corneas of conjunctival transplantation showed progressive vascularization ($P = 0.01$). More important, the resultant epithelia showed corneal phenotype in limbal transplantation, but remained conjunctival in conjunctival transplantation, as verified by monoclonal antibodies AM-3, APSM-1, and AE-5. These results support the concept of the limbal location of corneal epithelial stem cells, and indicate that complete destruction of the limbal zone resulted in corneal vascularization and conjunctivalization, and that limbal transplantation has a better efficiency than conjunctival transplantation in restoring such destroyed corneal surface