

Social aspects of corneal transplantation in Brazil: contrast between advances in surgical technique and limiting access to the population

Aspectos sociais do transplante de córnea no Brasil: contraste entre avanços na técnica cirúrgica e limitação de acesso à população

The constant search for knowledge drives technological advances and exponentially increases the number of diagnostic and therapeutic alternatives in ophthalmology. Not infrequently, procedures that in the recent past used to be considered the gold standard are now proscribed.

The development of less invasive and more effective surgical techniques increases the demand for transplants. Keratoplasty is currently a safer, more effective and successful procedure than the techniques and procedures used in the recent past, and it can be used to treat diseases once considered inoperable^(1,2). Because of this, an increasing number of patients are now able to overcome obstacles such as fear and insecurity and undergo the procedure^(3,4).

It is known that in many cases, traditional penetrating keratoplasty can be replaced by anterior or posterior lamellar keratoplasty, in which only the damaged layers of the cornea are removed and replaced, while the healthy ones remain intact.

Anterior lamellar keratoplasty is indicated for corneal opacities of the anterior or middle stroma, and it can be superficial (at the level of the stroma-stroma interface, referred to as superficial anterior lamellar keratoplasty [SALK]) or deep (at the stroma-Descemet membrane interface, referred to as deep anterior lamellar keratoplasty [DALK]). It is indicated in diseases such as keratoconus, pellucid marginal degeneration, stromal dystrophies, and ectasia after refractive surgery with healthy posterior layers^(5,6,7). Even though the technique has a longer learning curve, it offers significant advantages, since it does not penetrate the anterior chamber and preserves the host endothelium, thus significantly reducing the risk of endothelial rejection^(5,6,7).

Posterior lamellar keratoplasty can be used to replace the damaged endothelium without the need for large incisions or corneal sutures; it can be performed by posterior lamellar keratoplasty (PLK), deep lamellar endothelial keratoplasty (DLEK), Descemet's stripping endothelial keratoplasty (DSEK), Descemet's stripping automated endothelial keratoplasty (DSAEK), Descemet's membrane endothelial keratoplasty (DMEK), and Descemet's membrane automated endothelial keratoplasty (DMAEK). It is indicated in cases of Fuchs endothelial dystrophy, pseudophakic bullous keratopathy, and endothelial failure after penetrating keratoplasty with healthy anterior layers^(5,6,7). The main advantages of the procedure are minimal changes in corneal topography compared to the baseline, stable refraction, a healthy endothelium, and an eye globe less susceptible to trauma^(5,6,7).

Improvements in surgical techniques, however, also depend on advances in the instruments and materials available in the market, which are designed to produce less trauma and reduce the incidence of peri- and postoperative complications. Using a microkeratome or excimer laser, cuts of different thicknesses and diameters can be performed both on the host and the donor buttons⁽⁷⁾. More recently, however, femtosecond laser, which has a greater wave length than excimer laser, has been widely used for resection of corneal tissue as well as to create the corneal flap with a shape determined by the surgeon⁽⁷⁾. Furthermore, viscoelastic substances developed to maintain spaces (cohesive) or to protect intraocular tissues (dispersive) during surgery can now perform both functions at once⁽⁸⁾. There have also been significant improvements in tissue processing and storage, for example by using artificial anterior chambers which allow preparation of the corneal-scleral button in the same manner as with the entire eye globe⁽⁷⁾. These advances in surgical instruments and preservation methods of the corneal button increase the quality of transplanted tissue and therefore lead to better surgical outcomes to patients and their families.

However, it should be noted that many patients with indications for corneal transplantation do not enter the transplant waiting list and give up on visual rehabilitation. This occurs because part of the population, in particular low-income patients, even when instructed by physicians to undergo transplantation, do not receive appropriate guidance, do not understand such guidance, or cannot afford treatment costs⁽⁹⁾.

This suggests that having access to ophthalmic care and receiving an indication for corneal transplantation does not imply that patients will actually undergo definitive treatment. Therefore, improved communication is needed between the secondary and tertiary levels of care to ensure effective registration of patients in waiting lists and adequate access to corneal transplantation⁽⁹⁾.

A good example of a pioneer, effective and well-organised programme, supported by the Department of Health and the State Government, is the São Paulo State transplant programme, where the waiting list is cleared and surplus corneas are sent to other states of the Brazilian federation, helping reduce their waiting lists⁽¹⁰⁾.

In conclusion, there are currently less invasive surgical techniques that increase the benefits of transplantation and improve the quality of life of operated patients. However, even though technological advances in the methods and materials for corneal transplantation have contributed to increasing the safety and efficacy of the procedure, logistical obstacles and limited access to surgical treatment still prevent these advances from being evenly available to the entire population. It is thus necessary to ensure accessibility to a health system capable of diagnosing and treating the entire population.

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