

Boston Keratoprosthesis

The Boston Keratoprosthesis is a form of keratoplasty that utilizes a prosthetic device in combination with human donor cornea. Currently, it is the most commonly used corneal keratoprosthesis around the world. Advancement in design and enhanced understanding of postoperative care has resulted in improved outcomes. Most of these advancements have been in the last few decades. To date, approximately 5000 procedures have been performed.

The concept of a keratoprosthesis is not a new one. It was first described about 200 years ago during the French Revolution in 1789 by Guillaume Pellier de Quengsy. The first human keratoprosthesis surgery was performed by Nussbuan in 1855.

Boston keratoprosthesis has become the most common artificial device used

around the world. Claes Dohlman, M.D., Ph.D. is world renowned in being the leader in the advancement of his KPro prosthesis and the current design. The Boston Keratoprosthesis was approved by the FDA in 1992.

Initially, the KPro was reserved as a last resort only when traditional keratoplasty failed and in most cases when there were multiple failures. In recent years the trend has changed in which KPro is being performed as a primary procedure in patients who have less likelihood of success with a traditional Penetrating Keratoplasty (PKP).

Indications for KPro are numerous but can be grouped into three categories: patients in whom there is a high chance of graft failure with PKP (stem cell deficiency, chemical burns, previous

failed grafts), as a primary procedure and alternative to PKP (keratoconus, corneal dystrophies and scars), and in pediatric patients. Overall, the success rates in all three categories have improved tremendously over the last two decades secondary to advancement in designs and understanding. However, the main issue with the keratoprosthesis remains the management postoperatively. In my opinion, the keratoprosthesis is an extremely useful tool for corneal surgeons; however, a conservative approach is advised.

by M. Ali Haider, DO



Boston Keratoprosthesis Type 1

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