

Anterior lamellar keratoplasty - what to do when?

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Anterior lamellar keratoplasty (ALK) represents selective replacement of pathological corneal epithelium and stroma provided the host endothelium is healthy. It may be performed for tectonic purposes, i.e. to provide structural support in cases of corneal thinning and descemetocoele formation, optical purposes, i.e. to improve visual function by treating ectatic disorders and restoring corneal clarity and therapeutic purposes such as some resistant infections, and spontaneous perforation.

ALK can be divided in two types depending on how much stromal tissue is removed. Superficial Anterior Keratoplasty (SALK) represents removal of superficial stroma whereas Deep Anterior Keratoplasty (DALK) is defined as a total or subtotal replacement of abnormal corneal stroma preserving the healthy host endothelium.

Anterior lamellar keratoplasty leads to equivalent best corrected visual acuity (BCVA) and refractive outcomes compared to traditional Penetrating Keratoplasty (PK). Whereas ALK is technically more challenging to perform, it offers several advantages over PK such as better postoperative structural integrity, less required use of steroids postoperatively, lower rejection risk, lower loss of endothelial cells over time and no need of donor graft with good endothelial count.

The aim of this presentation is to review indications, surgical techniques, complications, advantages, disadvantages, and outcomes of these two different types of ALK, such as several tips for optimal clinical decision making and treatment.