Conjunctival autograft harvesting facilitated by subconjunctival air injection

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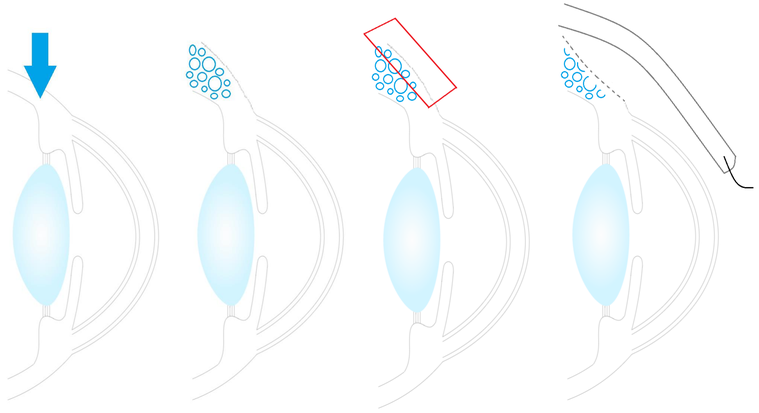
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Introduction

Conjunctival autografts are part of procedures addressing ocular surface pathologies, like conjunctival stem cells transplantations, pterygium surgery and Gunderson flaps. Harvesting conjunctival tissue requires good surgical skills, influencing directly the quality of the graft, and subsequently the anatomical and functional outcome.

The principle of subconjunctival filtered air injection is similar to the one used in stromal dissection in deep anterior lamellar keratoplasty (DALK). It facilitates the conjunctival autograft dissection, with minimal damage to the harvested tissue, as well as of the donor bed.



Methodology

After standard surgical sterile preparation, the area of conjunctiva to be harvested (usually in the superior quadrant) is marked with sterile maker pen, followed by subconjunctival injection of lignocaine 2% in the adjacent quadrants.

A small volume of filtered air is injected under the conjunctival surface, lifting the conjunctiva from the Tenon's capsule and creating a lobulated appearance. The artificial space thus created facilitates the dissection of a thinner, superficial conjunctival layer, with lower risk of graft perforation. The dissection starts posteriorly, advancing towards the corneal limbus. If desired, conjunctival limbal stem cells visualisation and harvesting are eased by folding the created flap onto the cornea.

Results

Subconjunctival injection of filtered air facilitates conjunctival tissue dissection, with further advantages. Besides shorter harvesting time, it enhances correct tissue orientation, since the posterior face of the graft has a lobulated appearance as opposed to the smooth conjunctival surface. Given the thinner layer of tissue being harvested, there is a lower long-term risk for the donor bed to be unsuitable for a procedure like trabeculectomy, if required.

Conclusion

Conjunctival autograft harvesting is an important skill for anterior segment surgeons. This additional technique does easily fit as a surgical step in well-established procedures, shortening dissection time and improving tissue manipulation, especially for surgeons in training.

