



# Relevance of Swept-Source Anterior Segment Optical Coherence Tomography for Corneal Imaging in Patients With Flap-Related Complications After LASIK

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## Abstract:

**Purpose:** To evaluate the value of swept-source anterior segment optical coherence tomography (AS-OCT) in the diagnosis and management of laser in situ keratomileusis (LASIK) flap-related complications. **Methods:** This prospective study included 25 eyes with LASIK flap-related complications imaged using swept-source AS-OCT between February and August 2016 at Alforsan Eye Centre, Assiut, Egypt. The images were acquired using a 6-mm line scan. **Results:** Imaging of flap-related LASIK complications using AS-OCT revealed specific and non-specific findings. Of note, epithelial ingrowth showed as highly reflective lesions below the LASIK flap in the form of islands, nests, or a continuous sheet with or without changes in the overlying flap. Macrostriations manifested as dome-shaped irregularities on the stromal surface with regular overlying epithelium, whereas microstriations showed as corrugations on the stromal surface with regular overlying epithelium. Less common complications included multiple flap macrostriations accompanied by a traumatic folded flap with a flap edge at the interface. Interface debris showed as a highly reflective interface lesion with or without a surrounding reaction. One eye with a flap that was torn and lost intraoperatively showed epithelialisation over a thin residual stroma underlying a contact lens with no stromal infiltration on the second postoperative day. AS-OCT was useful for assessment of flap thickness and planning of the new flap thickness in the event of an incomplete cut. **Conclusion:** Swept-source AS-OCT is useful not only for diagnosis but also for management of eyes with LASIK flap-related complications by allowing non-invasive, non-contact, real time acquisition of cross-sectional AS images.

## Keywords:

Swept-source anterior segment optical coherence tomography, laser in situ keratomileusis, flap complications

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