

LASIK ...

Step By Step

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EOS 2023

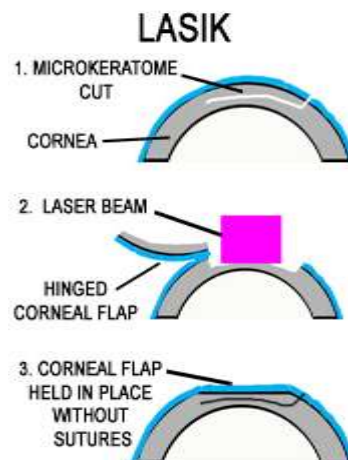
SPEAKERS

- **Mortada A. Abozaid, MD** (Patient Selection)
- **Amr Saeed, MD** (Microkeratomes and Different Laser Platforms)
- **Mohamed Anis, MD** (Stepwise LASIK Procedure)
- **Ashraf Elborai, MD** (Complications)

INTRODUCTION

Laser In Situ Keratomileusis (LASIK)

- Procedure
 - Flap making
 - Laser photoablation



Laser In Situ Keratomileusis (LASIK)

Indications

1. Stable refraction (no change over a period of 2 years)
2. Age \geq 18 years
3. Adequate central corneal thickness
4. Myopia \leq -10.00D
5. Hyperopia \leq +6.00 D
6. Astigmatism \leq 6D

Laser In Situ Keratomileusis (LASIK)

Contraindications

- Keratoconus
- Central corneal thickness $<480\mu\text{m}$
- Unstable refraction
- Deep corneal dystrophy
- Previous corneal melt (or systemic conditions predisposing to corneal melt)
- History of herpetic keratitis
- Amblyopia

HISTORY

- **Lans 1898:** published a set of experiments that focused on treating astigmatism in rabbits using keratectomy, keratotomy, and thermokeratoplasty
- **Pureskin 1966:** demonstrated that refractive changes could be made by removing central tissue underneath a corneal flap.
- **Barraquer** later showed that the corneal disc could be resected and frozen so that it could be reshaped using a cryolathe. However, his technique used complex equipment and had high intraoperative and postoperative complication rates, and the freezing resulted in damage to the disc itself.

- **Trokel 1983:** suggested the use of argon fluoride excimer laser (193 nm) to correct refractive errors
- **Ruiz and Barraquer in the late 1980s:** performed the first published keratomileusis in situ.
- They followed principles formulated by **Krumeich** using a microkeratome to remove a portion of the cornea followed by a second plano cut, the thickness and diameter of which established refractive change. The first disc was then repositioned and sutured back onto the cornea. These initial attempts were complex and unpredictable, often leading to keratoconus and other irregular astigmatism.

- **Pallikaris 1990:** performed the first PRK
- **Burratto and Pallikaris** then combined the microkeratome technique with the use of the excimer laser to ablate tissue and to induce refractive change.
- **Buratto** performed excimer laser ablation on the posterior surface of the resected corneal disc before replacing and resuturing it back to its original position.

- **Pallikaris** then used the excimer laser ablation on the corneal stromal bed under a hinged flap in rabbit corneas. Pallikaris attempted this technique on blind human eyes in **1989** and on sighted human eyes in **1991**, thereby creating a refractive surgical technique similar to the procedures currently in practice.
- **Ruiz 1993:** hinged flap technique by making a stopper in the suction ring to avoid free cap formation.

- **2001:** FDA approval for Femtosecond bladeless LASIK
- **2003:** FDA approval for customized wavefront-guided LASIK.

THANK YOU ...

EOS 2023