Basik of Lasik

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INTRODUCTION: Jose Barraquer introduced the concept of lamellar corneal surgery in 1949.

LASIK

"Laser In Situ Keratomeleusis"

- Followed from the procedure known as ALK or MLK
- Basic theory is decades old

Automated Lamellar Keratomeleusis (ALK)

- Consists of two incisions
- First, a slice of cornea 160 microns thick and a diameter of 8 mm is removed
- Second, a thin slice of cornea corresponding to the refractive error is removed
- The first slice is replaced back

Problems with ALK

- There are limits to the accuracy of a mechanical instrument
- The second slice could never be accurate or precise enough to compete with other forms of refractive surgery

Excimer Laser-Advantages

- Can ablate tissue with great accuracy
- Since the first cut is not critical, that is done with the microkeratome
- The refractive lenticle is removed with the excimer laser
- Refractive change can occur with the excimer laser without disturbing the epithelium

LASIK-Technique

- The microkeratome makes a horizontal cut on the cornea
- Slice is not excised completely
- A tongue like flap is removed to one side
- The laser is applied in the usual manner
- The flap is replaced and sticks in place

PEARLS TO AVOID PITFALLS IN LASIK

Pearl 1: Refract Well. A good LASIK surgeon should know good refraction

- -ve sphere after subjective refraction
- +ve sphere after cyclopegic refraction
- Cylinder and Axis after cyclopegia
- Rule out contact lens induced corneal warpage

Pearl 2: Choose Your Patient Well

- Avoid patients who repeatedly ask the same questions
- Avoid patients who make the decision to undergo the procedure too quickly
- Avoid patients who have undergone previous refractive surgery
- Avoid patients who have very small eyes, or very high or very low K readings

Pearl 3: Get a good teacher-Recognize that there is a learning curve

- Watch experienced doctors who use your brand of microkeratome
- Have an experienced doctor present during your first few cases
- Select patients with low visual requirements during the first few uses of the microkeratome.i.e.Amblyopic eyes

Pearl 4: Know Your Machines

- Understand the Microkeratome Technology
- Get a Feel for your microkeratome and laser and understand their eccentricities
- Learn to clean your microkeratome and to calibrate your laser yourself or under your supervision

Pearl 5: Ensure appropriate flap diameter

- Slightly decenter the microkeratome in the direction of hinge
- Adjust the stop properly
- Avoid high K or low K eyes
- Do not err on the other side and create free caps

Pearl 6: Standardize your technique

- Use the same amount of fluids for every case-excessive hydration can cause under corrections
- Try to finish every cases in the same time-excessive drying can cause over corrections
- Develop your own nomogram and standardize it

Pearl 7: Don't be in a hurry

- Take sufficient time to satisfy yourself about the IOP buildup

- Allow enough time for the flap to stick back in place. One to two minutes by the watch
- Monitor the ablation field and stop to clean fluid and blood if you see them

Pearl 8: Do not ablate on the hinge

- Get a good sized flap
- Use some protection for the hinge, especially in hyperopic treatments
- It is better to select a smaller optical zone than to ablate the hinge
- If you will need a zone size smaller than 5 mm, abandon the refractive correction-you can always do the case later

Pearl 9: Strictly adhere to the law of thicknesses

- Leave at least 250-280 microns on the bed or 380-400 microns of total cornea post-op
- Limit treatments to –18D
- Always do pachymetry
- Remember that high myopes have thin corneas

Pearl 10: Minimally handle the flap

- Float the flap back on a bed of BSS
- Do not squeeze the flap excessively
- Do not clean the flap very aggressively
- Use only a light sponge to absorb the water from the flap/bed gutter

Pearl 11: Maintain your poise

- LASIK complications can be quite forgiving if handled well
- Do not be too reluctant to abandon the case

Pearl 12: Maintain good sterility

- Inherently, some aspects of the procedure are unsterile
- That cannot be an excuse not to maintain as much sterility as possible

Pearl 13: See the patient within the first hour and first 24 hours

- 99% of all flap displacements take place within the first 24 hours
- Correct flap displacements immediately-flap folds have very a very plastic nature and a lot of inherent memory

Final Pearl: Refractive Surgery is about Care, more care and even more care

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