Maps, Dots, and Fingerprints: Refractive Surgery, Oh My!

Jordan Jones, O.D.

Epithelial basement membrane dystrophy (EBMD) is the most common anterior corneal dystrophy. Although there is debate on its prevalence, it is thought to be present in approximately 5 percent of the general population. The common slit lamp findings of maps, dots, and fingerprints actually represent corneal epithelial basement membrane present in the epithelium itself. The primary symptoms and complications of EBMD are blurred vision and spontaneous recurrent corneal erosions.

Patients that exhibit signs of EBMD with or without a history of recurrent erosions are poor candidates for laser assisted in situ keratomileusis (LASIK). Because of the weak adherence of the epithelium to the basement membrane, complications are more common and include, but are not limited to, the following:

- Increased susceptibility to flap distortion
- Delayed healing
- Interface epithelial ingrowth
- Flap keratolysis
- Corneal scarring

One study looked at patients who displayed signs of epithelial sloughing. They found that 100 percent of patients that exhibited epithelial sloughing were diagnosed with EBMD either before or after LASIK.

Luckily, LASIK is not the only refractive surgery option available to patients. Both photorefractive keratectomy (PRK) and laser assisted subepithelial keratomileusis (LASEK) are better suited for patients with EBMD. Because these procedures do not create corneal flaps, the risks are decreased. In fact, PRK can be combined with phototherapeutic keratectomy (PTK) in some cases to help symptomatic patients. With any surgical procedure, a thorough pre-examination to rule out poor candidates is essential in preventing possible postsurgical complications. Furthermore, knowing which surgical procedure is best suited for a particular patient is vital to achieving the best possible outcome.

References:

Dr. Jordan Jones is a graduate from UMSL College of Optometry and recently completed a cornea and contact lens residency at NSU Oklahoma College of Optometry. Dr. Jones currently lives in St. Louis, Missouri.

Please close this browser window to return to the CLCS Newsletter