PRK vs LASIK: an evolving debate

All-laser LASIK plugs. In contrast, punctal plugs were not enough to require implantation of punctal study was dry eye syndrome, which in 1.3 interface debris.

Two presenters at the 12th Winter Refractive meeting of the ESCRS took opposing views on the topic but maintained that both approaches have their respective advantages.

Timo Tervo MD opened the debate by arguing in favour of surface ablation as the generally preferable modality in corneal refractive surgery. He noted that while LASIK causes less pain and provides faster visual rehabilitation, PRK has fewer complications, entails less risk of dry eye and induces less change in the cornea's biomechanics.

“PRK is less expensive than LASIK and the complications that occur with PRK are less serious and easier to treat than those occurring with LASIK. In addition, PRK is easier to perform; it’s difficult to get it wrong and late enhancement is a simple procedure,” said Dr Tervo, Helsinki University Eye Hospital, Helsinki, Finland.

He added that the advantages of LASIK compared to PRK may not be as important to patients as is commonly supposed.

Regarding the slower visual recovery after PRK, he pointed out that most individuals see 10/20 or better on day five after trans-epithelial PRK. In addition, the haze that occurs after PRK is almost invariably insignificant, and while pain is greater after PRK, it only lasts a few days at most and is generally not too severe, he said.

Flap-related complications

Moreover, the flap-creation aspect of LASIK means that the procedure is inherently more risky than surface ablation. He noted that in a comparative study involving around 700 eyes, the total complication rate was six per cent for LASIK, compared to only 1.7 per cent for trans-epithelial PRK and 2.9 per cent for conventional PRK (Ghadfan et al, JCRS 2007, 33: 2041-2048).

Among LASIK-treated eyes in the study, intraoperative flap complications such as buttonholes, partial flaps, and free caps, accounted for half of the complications. A further 0.9 per cent of eyes had postoperative flap complications requiring surgical intervention, such as DLK or interface dehiscence.

Another flap-related complication in the study was dry eye syndrome, which in 1.3 per cent of LASIK-treated eyes was severe enough to require implantation of punctal plugs. In contrast, punctal plugs were not necessary in any eyes in the surface ablation groups.

The greater severing of and slower re-growth of corneal nerves after LASIK, which several studies have demonstrated, is the most likely cause of the procedure’s higher incidence of dry eye, he noted.

LASIK also undermines corneal mechanics to a greater extent than does PRK. The procedure therefore poses a greater risk of ectasia. He pointed out that a survey of the incidence of ectasia following corneal refractive procedures showed that LASIK accounted for 96 per cent of cases while PRK accounted for only four per cent (Randleman et al, Ophthalmology 2008, 115: 37-50).

LASIK, particularly wavefront LASIK, is also contraindicated in eyes that have epithelial irregularities. Such procedures may result in irregular stromal ablations, Dr Tervo pointed out.

Dr Tervo noted that postoperative survey over 10 years’ follow-up appears to be similar after myopic PRK and LASIK, as shown by a series of studies by Jorge Alio MD and his associates in the January 2008 issue of the American Journal of Ophthalmology. The studies also showed that the amount of regression correlated with the amount of correction attempted.

Eyes that underwent PRK to correct up to -6.0 D of myopia had a mean regression rate of -0.01 D per year, while eyes that underwent PRK to correct more than 6.0 D had a regression rate of -1.13 D per year, Dr Tervo noted. Similarly, eyes that underwent LASIK for up to -10.0 D of myopia the regression rate was -0.12 D per year, while among eyes that underwent LASIK for more than -10.0 D of LASIK correction the regression rate was -0.25 D per year, he added.

In summary, Dr Tervo maintained that PRK is the preferred option for lower amounts of correction, eyes with surface irregularities, those with thin corneas and patients predisposed to trauma such as athletes. LASIK, he acknowledged, is the preferred option for higher corrections and high astigmatism.

The John Henahan Prize

EuroTimes is delighted to announce the launch of the John Henahan Prize, which will be awarded annually to a young ophthalmologist.

John Henahan was the visionary editor and guiding light of EuroTimes from 1996 to 2001 and his work has inspired a generation of young doctors and journalists, many of whom continue to work for EuroTimes.

Ophthalmologists who are members of the ECRS and who are under 40 years of age are eligible to apply for the prize.

Entries are invited to write a 1,000-word article on “Why I became an ophthalmologist”. The article should give a brief introduction into why the individual ophthalmologist decided on his or her career path and should include reference to his or her early education, including mentors and role models (where appropriate). The article should also look at issues and controversies in ophthalmology, including changing demographics and evidence-based medicine. The closing date for entries is Friday 1 August, 2008.

A distinguished panel of ophthalmologists and medical journalists including Emmanuel Rosen, FRCS, Jose Giuell, MD, Sean Henahan, editor, EuroTimes and Paul McGinn, editor, EuroTimes will judge the entries.

The winning entrant will receive a prize of €1,000 which will be awarded at the XXVI ECRS Congress in Berlin, 2008 in September. We will publish the winning entry in the October edition of EuroTimes.

To apply please email your article to Colin Kerr, executive editor, EuroTimes at colin.kerr@escrs.org. Your email should also include your full name, home address and phone number, your date of birth and ECRS membership number.

Entries received after 1 August will not be considered. The decision of the judges is final and no correspondence will be considered once they have announced their decision.