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CASE REPORT

Corneal Ectasia after PRK

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ABSTRACT

It is well known that jatrogenic ectasia is lower in PRK compared to LASIK. The true incidence of post-LASIK and post-PRK ectasia remains unknown according to Dr Marguerite B McDonald. Corneal ectasia after PRK was reported to start after 3 to 5 years and after LASIK 6 to 18 months. The author reports of a case with corneal ectasia after PRK in both eyes that started after 16 years. Inspite of corneal cross-linking the progression of the ectasia progressed in both eyes.

Keywords: Ectasia, LASIK, PR

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INTRODUCTION

In the 'Quest editorial' in J Cataract and Refractive Surgery vol 25 October 1999, Professor Theo Seiler asked: Iatrogenic keratectasia: Academic anxiety or serious risk? Professor Theo Seiler reported about three patients who developed corneal ectasia after LASIK, all with high myopia and borderline pachymetry, but even ectasia was reported in a patient with forme fruste keratoconus.

The incidence of iatrogen corneal ectasia is lower in PRK compared to LASIK. The incidence of iatrogenic ectasia after LASIK is approximately set to 1/2500. Dan Z Reinstein,[3] MD, reported a 0.12% incidence in 5,212 eyes, and Ioannis Pallikaris, MD, reported a 0.66% incidence in 2,873 eyes. In a retrospective series of 6,453 myopic eyes who had had PRK followed for a minimum of 18 months, Antonio Leccisotti[2] found the development of ectasia in five patients giving the incidence of 0.03%. The eyes were all predisposed. In three eyes forme fruste keratoconus was seen. In one patient the fellow eye had keratoconus. Pachymetry was less than 500 µm in two eyes.

JB Randleman[4] reported in 2006 of two patients who developed ectasia after PRK. They were both bad candidates for refractive surgery. Both had thin corneas and high myopia leaving little residual tissue left. One case had inferior steepening in the right eye and central steepening in the left eye. The second patient had a sibling who had PK for keratoconus.

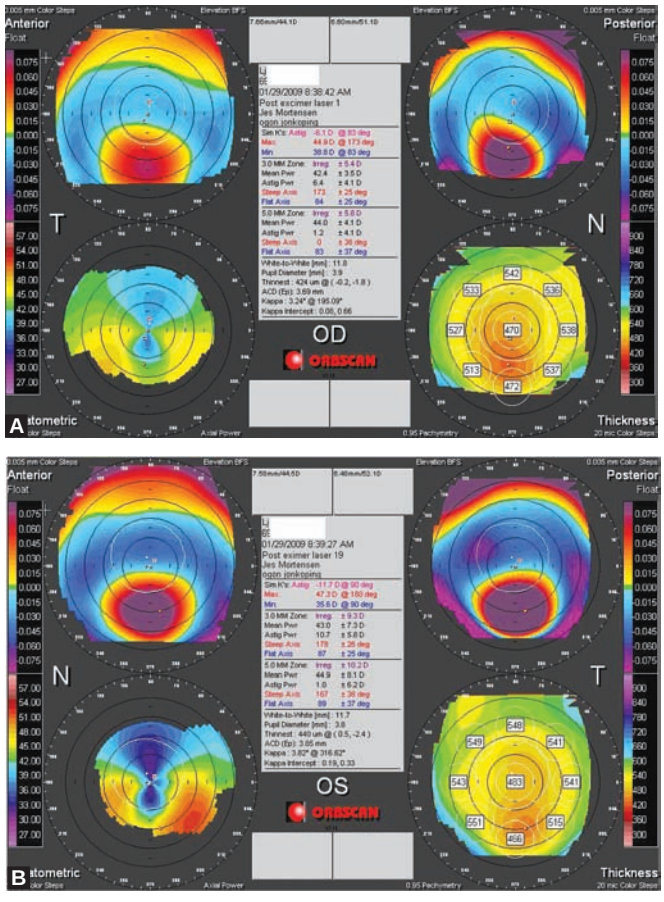
The true incidence of post-LASIK and post-PRK ectasia remains unknown. Marguerite B McDonald[1] said at the refractive subspeciality day preceding the joint meeting of the AAO and the Middle East Africa Council of Ophthalmology in Chicago. According to Marguerite B McDonald only 32 cases of post-PRK were reported in international literature, but that the number was growing, possibility due to the late onset of the post-PRK ectasia.

There is a difference in the start of the iatrogenectasia. After PRK the onset is postponed till 3 to 5 years and after LASIK 6 to 18 months.

Professor Theo Seiler pointed out the different major risk factors most important to consider when performing LASIK: Thickness of the flap, thickness of the residual stroma, forme fruste keratoconus, the tensile strength of the cornea. Professor Marguerite B McDonald agreed on that but even pointed out that an abnormal topography should warn not to perform PRK.

Corneal ectasia after PRK was reported to start after 3 to 5 years, but even later start has been reported, Kim Hyojin[5] reports of a case after 9 years after PRK. Preoperatively pachymetry was 536 µm and intended ablation 74 µm.

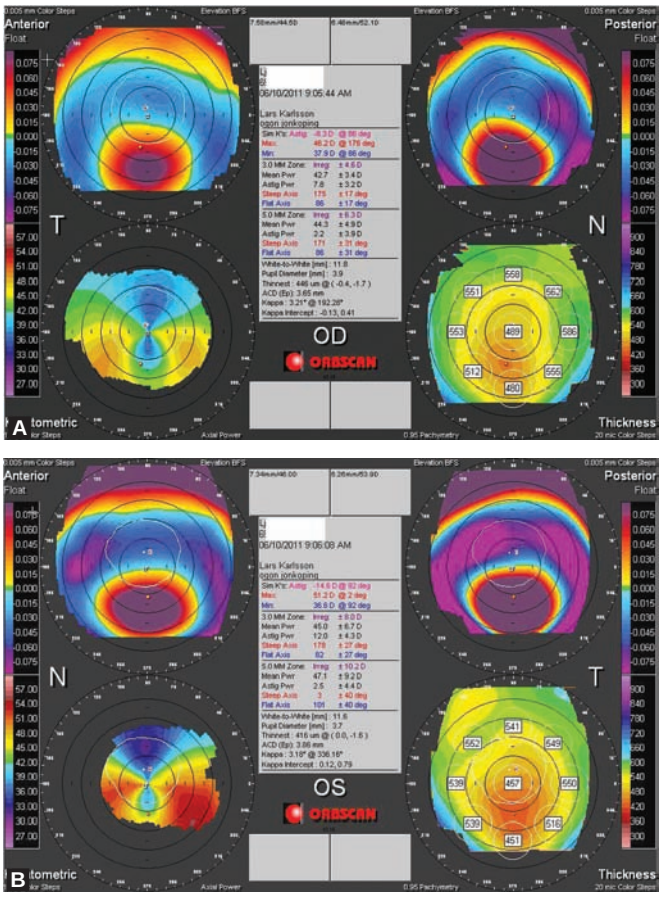
I shall report of a patient, man, born in 1969, who had PRK 1990 for myopia, –3.5 dioptres in both eyes. First 10 years managed without glasses, and then used glasses



Figs 1A and B: Orbscan topography OD and OS, January 2009

for myopia with stable correction till 2006, when the diagnosis of corneal ectasia was made in both eyes. I saw the patient in January 2009 (Figs 1A and B). Visual acuity was: OD 20/20 (0,5 sph-6,0@83 degree), OS 20/30 (2,0 sph-5,0@90 degree). Pachymetry OD 424 µm and pachymetry OS: 440 µm.

CXL was performed OS May 2009 and OD September 2009. In spite of CXL progression continued, last Orbscan topography June 2011 (Figs 2A and B) showed a progression of the cylinder to –6.1D in OD and to –14.5 in OS. Visual acuity was in OD 20/25 and visual acuity was in OS 20/100. The patient is now scheduled for lamellar keratoplasty in left eye.



Figs 2A and B: Orbscan topography OD and OS, June 2011

CONCLUSION

The incidence of corneal ectasia after PRK is lower compared to LASIK. The incidence is still not known and the number can be growing as the onset is much later than after LASIK. The author reports of a case that was diagnosed 16 years after PRK. In spite of CXL progression continued.

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