

Table 1. Distribution of right and left eyes and direction of rotation.

Method	Right Eye			Left Eye		
	n	Clockwise	Counterclockwise	n	Clockwise	Counterclockwise
Slitlamp	8	1	7	7	1	6
Bubble	7	4	3	8	6	2
Pendular	8	0	8	7	5	2
Tonometer	7	0	7	8	0	8

or conjunctival ballooning, as is sometimes seen after peribulbar blocks.

As seen in the figure, the conjunctival bleeding itself may present as a small blob with a diameter of nearly 1 mm. In cases in which the hemorrhage becomes even larger, accuracy will decrease. As a rule of thumb, for an eye with a normal corneal diameter, an uncertainty of 1 mm at the limbus will result in an uncertainty of 10 degrees in defining the steep meridian. We believe this is too much when using toric IOLs.—*Oliver Findl, MD, MBA*

Pellucid marginal degeneration and keratoconus; Differential diagnosis by corneal topography

Tummanapalli et al.¹ recently published an interesting study investigating the differential diagnosis between pellucid marginal degeneration (PMD) and keratoconus with the aid of corneal topography. They evaluated corneal elevation and thickness in patients with PMD and keratoconus using the Orbscan corneal topography system (Bausch & Lomb), generating the PMD index, which displays a high sensitivity and specificity in diagnosing PMD.

We would like to comment on some points that we think merit further consideration. In their retrospective study, the authors analyzed data from patients with clinically documented PMD or keratoconus, with the typical corneal topographical features for each disease. Although mixed forms of PMD and keratoconus do not exist,² we agree with the authors that distinguishing between keratoconus with inferior displacement of the cone and true PMD may sometimes represent a challenge for even the experienced clinician.³ We also agree that diagnostic dilemmas are rare, since keratoconus patients usually present with topographical signs decades before the PMD patients.⁴ Moreover, modern technology in corneal topography provides additional information so in corneas exhibiting “lobster” or “crab claw” patterns or severe inferior steepening on anterior corneal maps, PMD is not diagnosed without regard to the corneal thinning and, most important, to posterior corneal maps and corneal elevation.⁵

In our opinion, major diagnostic challenges arise in differentiating preclinical forms of PMD presenting with against-the-rule-astigmatism or minor corneal topographical variations from atypical keratoconus or even normal corneas displaying harmless refractive errors, considering the important age overlap between young individuals with these conditions. We believe that analysis of early corneal topographical data from the PMD patients included in the study would add more value to the diagnostic capacity of the PMD index and increase our understanding of the corneal topographical manifestation of PMD. In any case, validation of the PMD index in prospective masked randomized studies is essential to establish the index's true clinical value in identifying early PMD without evident corneal topographical alterations in young individuals during preoperative screening for refractive surgery.

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Reply: We agree with the Dr. Pano et al.'s comments about the diagnostic challenges in differentiating preclinical forms of PMD with minor or no topographical characteristic signs from atypical keratoconus or