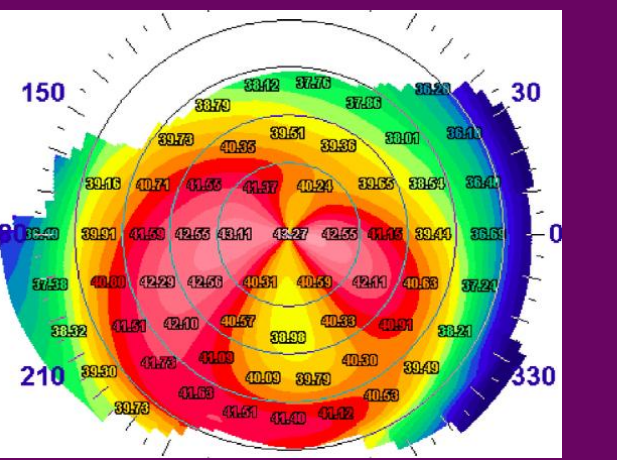


The Incidence of Topographic Abnormalities in Patients Scheduled for Cataract Surgery

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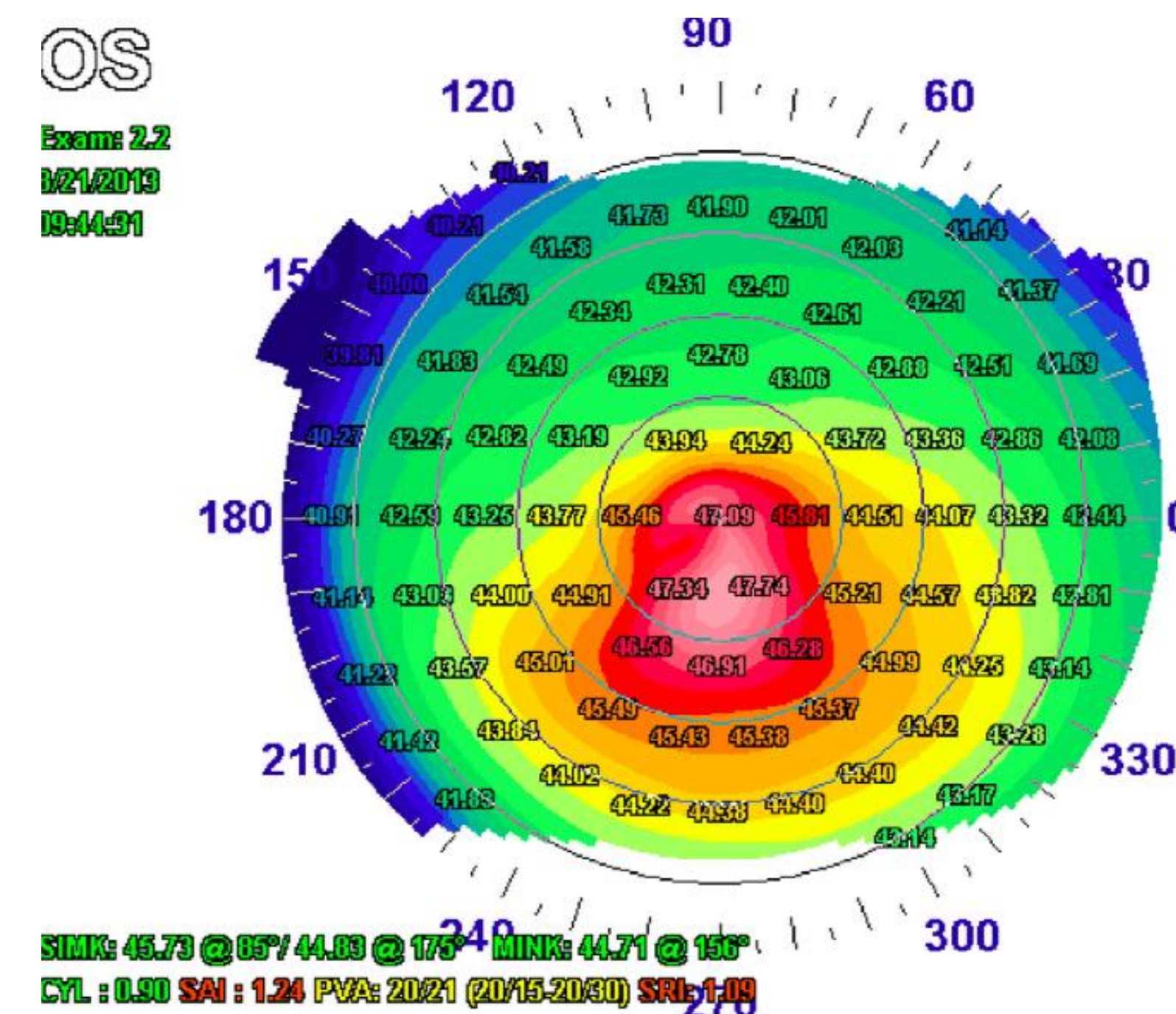


Background:

Corneal Topography is an imaging technique that maps the surface curvature of the cornea, a useful tool for diagnosis of irregular astigmatism, ectatic corneal diseases, corneal surface irregularities, and dry eye. These abnormalities each have a distinct impact in cataract surgery on IOL calculation, IOL type, incision type, shape, and length. Small differences in these calculated values can lead to an over or under correction and effect final visual results. It is common to see reduced Uncorrected Visual Acuity (UCVA) and Best Spectacle Corrected Visual Acuity (BSCVA) in patients with preoperative corneal topographic abnormalities after cataract surgery.[\(Sinjab 2012\)](#) Preoperative corneal topography can be an effective tool to identify patients with corneal shape irregularities that may influence postoperative visual acuity and outcomes.

Purpose: To review, using topography, the incidence of pre-operative corneal abnormalities in patients undergoing cataract surgery, which may impact final visual results.

Protocol:



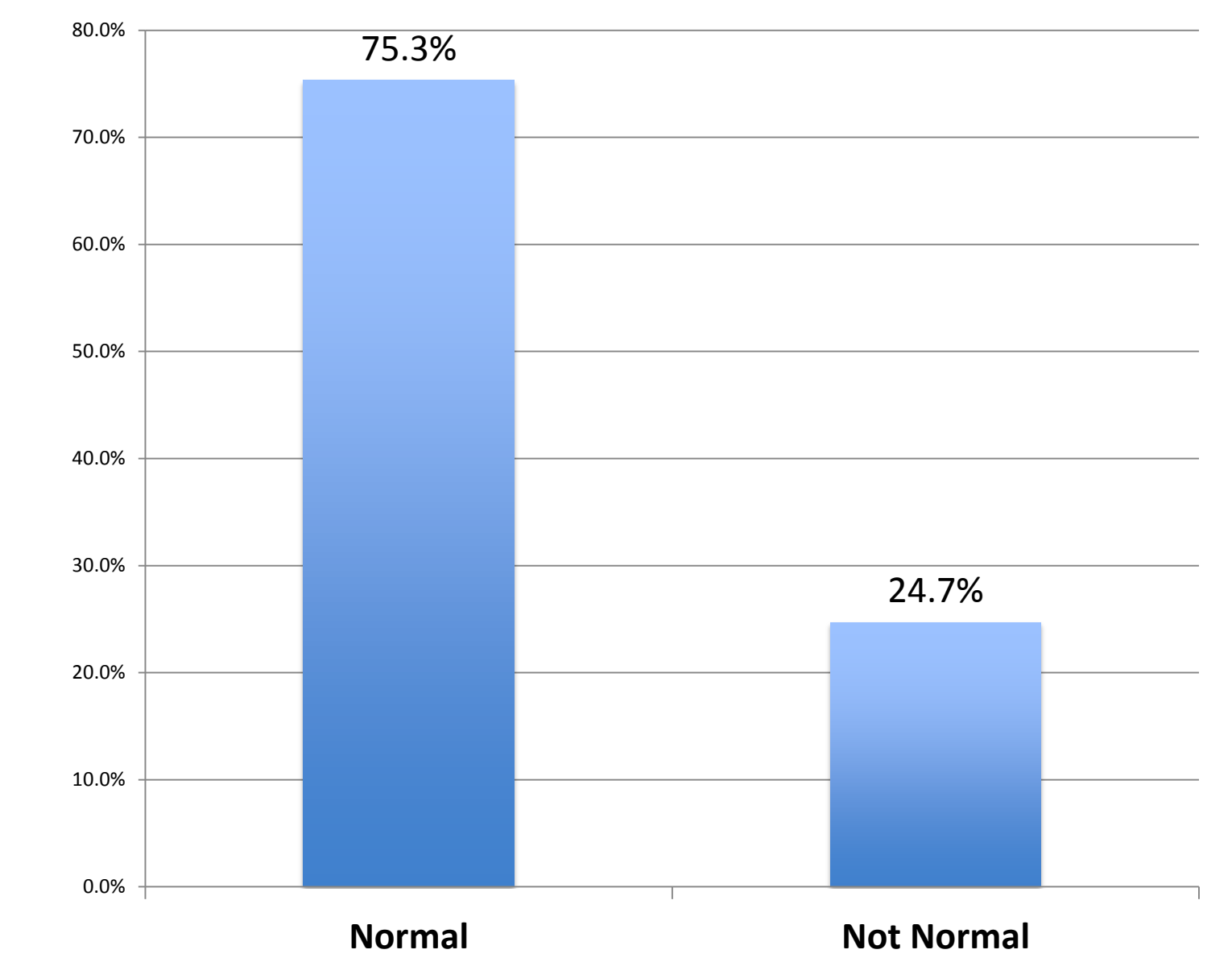
What is the diagnosis for this topography? *

- ☐ Normal
- ☐ Borderline FFKC or Pellucid
- ☐ FFKC
- ☐ Keratoconus
- ☐ Pellucid Pattern
- ☐ Superior Steepening consistent with superior FFKC
- ☐ Central flattening consistent with previous corneal surgery (myopic PRK/LASIK, or RK)
- ☐ Central steepening consistent with previous corneal surgery (hyperopic PRK/LASIK, or CK)
- ☐ Significant irregular astigmatism (not FFKC/Keratoconus/Pellucid)

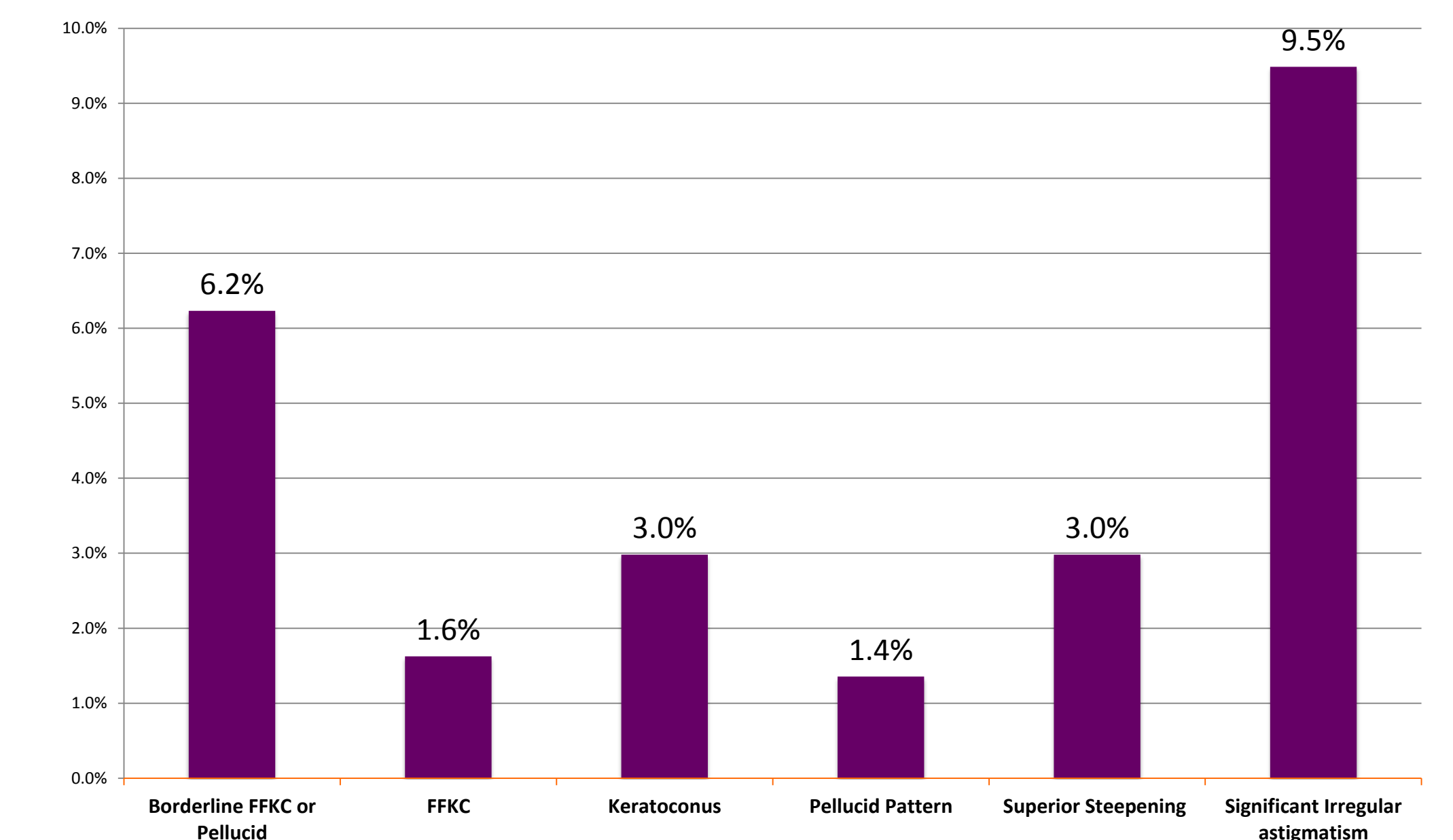
Methods: We conducted a chart review of 200 consecutive patients (400 eyes) that had preoperative corneal topographies (Nidek Magellan) from both eyes. Patients with a history of corneal refractive surgery were excluded. All patients underwent cataract surgery by one surgeon in Miami, FL.

Results: ~25% of eyes scheduled for cataract surgery with no history of previous corneal surgery have abnormal Corneal Topography. 1.6% of eyes had topography consistent with FFKC, 1.4% had topography consistent with Pellucid Marginal Degeneration. 3.0% had topography consistent with Keratoconus. 9.2% had topography that was borderline for FFKC, borderline for pellucid, or had superior steepening. 9.5% had irregular astigmatism or abnormal topography consistent with dry eye.

Percentage of Eyes with Normal and Abnormal Findings (No Previous History of Corneal Surgery)



Distribution of Abnormal Topographic Findings



Conclusions: Pre-operative corneal topography is an important tool to evaluate patients prior to cataract surgery, to better understand the patient's corneal shape, and to provide accurate post-operative expectations.