Understanding Relationship between Astigmatism and HOA

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Purpose:
To determine the prognostic factors for postoperative astigmatism following custom LASIK for myopia correction.

Methods:
Preoperative and 1-month postoperative data were collected on 175 eyes (89 patients, mean SE: −4.89 ± 2.06 D, mean cylinder: -0.82 ± 0.71 D, mean HORMS: 0.53 ± 0.16 µm) treated using the Bausch & Lomb customized Zyoptix platform. Discrepancy in the preoperative wavefront and manifest subjective refractions were compared between eyes that developed significant postoperative astigmatism (≥ 0.50 D) and those with postoperative astigmatism < 0.50 D. Image convolution and vector analysis were performed to investigate any optical relation between higher order aberrations and astigmatism.