Comparing the STAAR and AcrySof Toric IOLS

An analysis of the lenses’ rotational stability.

BY DAVID F. CHANG, MD

The STAAR Toric IOL (STAAR Surgical Company, Monrovia, CA) was approved by the FDA in November 1998, and it was the only toric IOL on the US market until recently. The 10.8-mm long TF model lens was the design studied in the FDA clinical trials. In an effort to decrease malrotation of the lens, the company released the longer 11.2-mm TL model in 1999.

Early postoperative rotation of the smaller TF IOL was a significant problem. In the FDA-monitored clinical study, 24% of the IOLs ended up more than 10º off axis (12% were more than 20º off, 8% were more than 30º off, and 5% were more than 45º off axis). Subsequently, a number of clinical studies of the STAAR toric IOL were published confirming a significant incidence of rotation greater than 10º to 15º postoperatively with the TF model1-4 (Table 1).

I undertook my own study of the rotational stability of the longer TL model when it became available.5 My evaluation of 90 consecutive toric IOL implantations included 80 TL IOLs and 10 TF IOLs (the TL model is not available in powers greater than 24.00 D). Of the TL toric implants, 73% were within 5º, 89% were within 10º, and 96% were within 15º of the targeted axis. My repositioning rate was 2.5% (two of 80) with the TL IOL and 3.3% overall (one of 10 TF IOLs was repositioned). Until my study, all of the published articles looking at the STAAR Toric IOL had reported on the only available model at the time, the TF. With respect to the TL model, the published literature on rotational stability was therefore misleading.

The recently approved AcrySof Toric IOL (Alcon Laboratories, Inc., Fort Worth, TX) has demonstrated excellent rotational stability in the FDA-monitored clinical study with an average of less than 4º postoperative rotation. The rotational stability of my first 20 AcrySof Toric IOLs confirms these results at 1-month minimum follow-up; 85% of the IOLs were within 5º of the targeted axis, and 100% were within 10º of the targeted axis.

The widespread adoption of the STAAR Toric IOL was hampered by surgeons’ misperception that the TL model also exhibited poor rotational stability and their general reluctance to use silicone plate haptic lenses. Having a single-piece hydrophobic acrylic toric IOL available is therefore a welcome option.

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