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Program Analyzes, Refines Refractive Surgery Technique

MINNEAPOLIS—Have you ever wanted an overview of a specific aspect of your refractive surgeries so that you could find your weaknesses and refine your technique?

A software program called the **Alpins Statistical System for Ophthalmic Refractive Surgery Techniques**

(ASSORT) can provide that information in your clinic. Noel Alpins, MD, the ophthalmologist responsible for designing the ASSORT program, discussed its origins and applications here during the International Society for Refractive Keratoplasty's mid-summer symposium.

Dr. Alpins, a refractive surgeon based in Melbourne, Australia, emphasized that his desire to refine the outcomes of his astigmatic corrections provided the impetus for designing ASSORT. He focused his remarks on ASSORT's capabilities for analyzing astigmatic refractive surgery results.

Need for Goal

"Surgically induced astigmatism tells us what has happened in surgery, but it doesn't really tell how the result differed from what we wanted to happen," he remarked. "We need to have a surgical goal. We want to know how much our astigmatism has varied, whether we've been 5°, 10°, or 15° off axis, and whether it's been in a clockwise or anti-clockwise direction. We want to use this analysis on our past surgeries to determine if there is a trend or a pattern, so we can do a better job the next time," Dr. Alpins continued.

The ASSORT program takes approximately 30 minutes for staff to learn how to enter data, Dr. Alpins noted in an interview with OPTHALMOLOGY TIMES. Operative notes are keyed in for later retrieval.

The program analyzes a variety of quantifiable aspects of ophthalmology, including preoperative conditions, surgical procedures, intraoperative conditions, and postoperative complications.

"Anything that any surgeon wants to know about the surgery can be recorded, including intraocular pressure and glaucoma control," Dr. Alpins stated. "The analysis can be retrieved and analyzed instantly."

Astigmatism is the most challenging aspect of ophthalmic

surgery to quantify and analyze, Dr. Alpins said, noting the lack of prior availability of an analysis program in ophthalmology.

"In eye surgery, if you can't analyze astigmatism, there's no point in having an analysis system," he said. "We had difficulty initially in looking at astigmatism in a conventional form to computerize it."

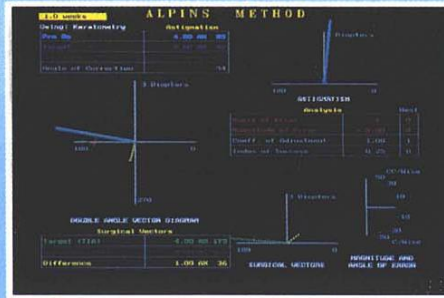
Accurate Targeting

Dr. Alpins explained ASSORT's astigmatism analysis component using the metaphor of the putting green. Just as a golf ball can miss the hole because the golfer's swing was too hard or hit from the wrong angle, refractive surgery can fall short of the goal of eliminating astigmatism because of an inaccuracy in targeting the cylinder, the axis, or the direction of the astigmatism.

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Through a format that uses vector diagrams, ASSORT can take into account all the above factors of a patient's preoperative astigmatism, the surgical techniques used, and the postoperative result. The resultant success of surgery is expressed as an index.

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Example of a patient's surgical analysis data using the ASSORT program. (Photograph courtesy of Noel Alpins, MD)

Suitable for Publication

"The ASSORT program enables any ophthalmic surgeon to analyze their own results and analyze them so that they can be presented in a national or international forum or journal," Dr. Alpins told OT. "The program provides the opportunity for this data analysis without the surgeon having to go to the expense or inconvenience of external analysis groups," he added.

The Alpins Statistical System for Ophthalmic Refractive Surgery Techniques program is produced by Norseman Systems, an Australia-based software company, utilizing Borland's Paradox database management software. It is currently being distributed in the United States by Alcon Systems, a division of Alcon Surgical, Inc.

For further information on the system, physicians can contact Alcon Surgical Inc, 6201 S Freeway, Ft. Worth, TX 76134-2099; (800) 695-6991; Fax: (817) 551-4533. **OT**