Gonioscopy Redefined

For some years, gonioscopy has been the forgotten element of glaucoma diagnosis. Although considered essential to making the correct anatomically based diagnosis of the disease, and despite the fact that it is a reimbursable component of the glaucoma examination, community-based studies have revealed that clinicians perform gonioscopy only 46% of the time (compared with 66% for visual field testing and 96% for IOP measurements).[1] It is interesting to speculate why.

The first description of the anterior chamber angle appeared in 1899.[2] Gonioscopes, direct and indirect, have been improved significantly, especially in the last 50 years as the slit-lamp biomicroscope has become more sophisticated. Gonioscopy provides the tool with which clinicians can differentiate between open and closed angles, the principal form of diagnosis. There have been many champions of gonioscopy: Alexios Trantas; Otto Barkan; Robert Allen; Robert Shaffer; George Spaeth; and the current proponent, Wallace L. M. Alward. On the Web site http://www.gonioscopy.org, Lee has collected beautiful videos documenting various conditions of the angle.

Gonioscopy is an essential component of the diagnosis and management of glaucoma. The question becomes, can the diagnosis of specific forms of this disease progress beyond the anatomic findings of gonioscopy? Recent innovations such as angle photography (RetCam; Clarity Medical Systems, Inc., Pleasanton, CA), ultrasound biomicroscopy (iUltrasound imaging system; iScience Interventional, Menlo Park, CA), Scheimpflug imaging (Pentacam Comprehensive Eye Scanner; Oculus, Inc., Lynnwood, WA), and ocular coherence tomography (Visante OCT; Carl Zeiss Meditec, Inc., Dublin, CA) provide digital records with sophisticated analysis of the angle. These developments have greatly enhanced our understanding of the anatomy and pathology of the angle.

By combining gonioscopy and newer technologies, can we better classify the various forms of glaucoma than simply an open versus a closed angle? Might we transition from describing subtypes of glaucoma (ie, pigmentary or pseudoexfoliation syndromes) to using more specific genotypic terms? The way in which we currently classify glaucoma is therapeutically self-limited. Until we can differentiate among the various types of glaucoma, we will not be able to treat them effectively. ❑

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1. Fremont AM, Lee PP, Mangione CM, et al. Patterns of care for open-angle glaucoma in managed care. *Arch Ophthalmol*. 2003;121(6):777-783.
2. Dellaporta A. Historical notes on gonioscopy. *Surv Ophthalmol*. 1975;20(2):137-149.