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Anterior Segment Imaging for Angle Closure

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Abstract

Purpose: To summarize the role of anterior segment imaging (AS-imaging) in angle closure diagnosis and management, and the possible advantages over the current standard of gonioscopy.

Design: Literature review and perspective.

Methods: Review of the pertinent publications with interpretation and perspective in relation to the use of AS-imaging in angle closure assessment focusing on anterior segment optical coherence tomography and ultrasound biomicroscopy.

Results: Several limitations have been encountered with the reference standard of gonioscopy for angle assessment. AS-imaging has been shown to have performance in angle closure detection compared to gonioscopy. Also, imaging has greater reproducibility and serves as better documentation for long-term follow up than conventional gonioscopy. The qualitative and quantitative information obtained from AS-imaging enables better understanding of the underlying mechanisms of angle closure and provides useful parameters for risk assessment and possible prediction of the response to laser and surgical intervention. The latest technologies—including 3-dimensional imaging—have allowed for the assessment of the angle that simulates the gonioscopic view. These advantages suggest that AS-imaging has a potential to be a reference standard for the diagnosis and monitoring of angle closure disease in the future.

Conclusions: Although gonioscopy remains the primary method of angle assessment, AS-imaging has an increasing role in angle closure screening and management. The test should be integrated into clinical practice as an adjunctive tool for angle assessment. It is arguable that anterior segment imaging should be considered first line screening for patients at risk for angle closure.