

AS-OCT Detects Primary Angle Closure Earlier Than Gonioscopy

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Abstract

Introduction: Primary angle closure glaucoma (PACG) is a leading cause of blindness in Asia. Currently, gonioscopy is the gold standard for detecting primary angle closure (PAC). Anterior segment optical coherence tomography (AS-OCT) is an imaging device that could be used to reduce the need for gonioscopy. In a screening study carried out four years ago, AS-OCT detected PAC in 10% of the cohort in whom gonioscopy revealed open angles. **Purpose:** To determine whether those with open angles on gonioscopy who had angle closure on AS-OCT are at higher risk of developing angle closure than those who had open angles on both AS-OCT and gonioscopy. **Methods:** Phakic subjects with previously closed angles on AS-OCT who had open angles on gonioscopy were reexamined, as was a sample of patients with previously open angles on both AS-OCT and gonioscopy. The examination included gonioscopy repeat AS-OCT scan, and detailed slit lamp evaluation. We compared the incidence of PAC based on gonioscopy diagnosis between the two groups. **Results:** 146 Singaporeans from the 2006 screening participated, 80 patients with previously found angle closure on AS-OCT but open angles on gonioscopy and 66 patients with previously found open angles on both AS-OCT and gonioscopy. The 2006 AS-OCT findings were associated with risk of angle closure four years later; 32% (95% CI 22%-42%) of those with AS-OCT angle closure in 2006 now had gonioscopic angle closure versus 14% (95% CI 6%-22%) of those with open angles on AS-OCT in 2006 ($p < 0.01$). **Conclusions:** Of those patients with open angles on gonioscopy four years ago, those who were closed on AS-OCT four years ago were more likely to have developed gonioscopic angle closure than those who had open angles on AS-OCT four years ago. AS-OCT defined angle closure is predictive of future gonioscopic status.

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