Common corneal condition associated with increased eye pressure

8 November 2010

Corneal arcus, a condition in which a ring of lipids builds up around the cornea, appears common among middle-age and older adults and may be associated with elevated eye pressure, according to a report in the November issue of *Archives of Ophthalmology*.

Intraocular pressure (the pressure inside the eye) is the only treatable risk factor for glaucoma, the leading cause of irreversible blindness worldwide, according to background information in the article. "The accuracy of intraocular pressure measurement is crucial in the diagnosis and management of glaucoma," the authors write. Some characteristics of the cornea (the clear front portion of the eye), including its thickness at the center and the radius of its curve, are known to affect the accuracy of this measurement.

The effect of corneal arcus-an area of lipid deposition that creates a ring around the cornea and may be associated with cardiovascular disease-on the structure and function of the cornea and on intraocular pressure is not well understood. Renyi Wu, M.D., Ph.D., of the Singapore Eye Research Institute, and colleagues examined the prevalence and consequences of corneal arcus among 3,015 individuals age 40 to 80. Participants underwent an interview and eye examinations, including corneal measurements, assessment of intraocular pressure and identification of corneal arcus using a slitlamp.

Corneal arcus was present in the right eyes of 1,747 participants (57.9 percent). After adjustments for age, sex and other factors, eyes with corneal arcus tended to have higher intraocular pressure, thicker corneas and altered corneal curvatures. The prevalence of high eye pressure but not of glaucoma was higher among participants with corneal arcus than those without (3.2 percent vs. 1.8 percent).

"There is no known explanation for the association of corneal arcus with higher intraocular pressure," the authors write. "There may be changes in biomechanical properties of the cornea in eyes with corneal arcus, as such mechanisms are emerging as important clinical variables that may affect intraocular pressure measurements."

"Further research is required to investigate the clinical implications of these findings for intraocular pressure assessment in eyes with corneal arcus," the authors conclude.

More information: *Arch Ophthalmol.* 2010;128[11]:1455-1461.

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