

CORTICAL CATARACT

The cortex of the lens is a layer that becomes more obvious as nuclear sclerosis (August 23) develops. In the normal eye of a child, the entire lens is filled with cortical-type material. As the patient ages, the cells contained within the lens capsule continue to multiply, resulting in a greater number of cells living within the fixed volume of the capsular bag. This results in hardening (sclerosis) of the cells in the center of the lens, with less obvious changes to the cells making up the cortex in the lens periphery. As the lens continues to mature, the central, nuclear part increases in volume, while the cortical part, located between the growing nucleus and fixed capsule, shrinks.

If patients develop optical impurities within the peripheral part of the lens, they are said to have cortical cataract. Although this type of cataract can be secondary to external causes, such as trauma, they are usually idiopathic.

Cortical changes tend to start out toward the periphery of the lens, and for that reason are usually asymptomatic initially. On slit lamp examination, the observer can note water clefts or vacuoles between the layers of cortical material. Because they are usually oriented radially, these impurities are often referred to as “cortical spokes.”

Progression of these cortical spokes is quite variable. While some patients will show no change over many years, others will advance and have visually significant cataract within months. It is difficult to predict which patients will progress quickly based on slit lamp examination alone.

Over time, cortical spokes tend to both grow in size and increase in number. As they grow, the opacifications will eventually grow into the pupillary space. At that time, they will become visually significant. Although visual acuity may be surprisingly good, many patients will complain of disabling glare, as incoming light is scattered by the cortical cleft. Patients may also complain of monocular diplopia for similar reasons.

When the entire cortical area of the lens becomes whitened, the lens is referred to as being “mature.” A “hypermature” cataract occurs when cortical material liquefies and leaks through the lens capsule, leaving it shrunken and wrinkled. If enough liquefied cortex escapes so that the nucleus can freely move within the capsular bag, it is referred to as a “Morgagnian cataract.”

The treatment for cortical cataract is removal of the lens with implantation of an IOL.

Bibliography

Johns KJ, Feder RS, Hamill MB, et al. *Basic and Clinical Science Course: Lens and Cataract*. Section 11. San Francisco, CA: American Academy of Ophthalmology; 2002-2003:42-43.