Review Article

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Clinical Manifestation and Treatment of Cataract: A Systematic Review

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Abstract

A cataract is a clouding or opacification of the normally clear lens of the eye or its capsule (surrounding transparent membrane) that obscures the passage of light through the lens to the retina of the eye. This blinding disease can affect infants, adults, and older people, but it predominates the latter group. It can be bilateral and vary in severity. The disease process progresses gradually without affecting daily activities early on, but with time, especially after the fourth or fifth decade, the cataract will eventually mature, making the lens completely opaque to light interfering with routine activities. Cataracts are a significant cause of blindness worldwide. Treatment options include correction with refractive glasses only at earlier stages, and if cataract mature enough to interfere with routine activities, surgery may be advised, which is very fruitful. The WHO/NPCB (National Programme for Control of Blindness) survey has shown that there is a backlog of over 22 million blind eyes (12 million blind people) in India, and 80.1% of these are blind due to cataract. The annual incidence of cataract blindness is about 3.8 million.

Keyword: Transparent membrane; Opacification; Nuclear cataracts; Cortical cataracts.

Introduction

A cataract develops when the lens in your eye, which is normally clear, becomes foggy.

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For your eye to see, light passes through a clear lens. The lens is behind your iris (colored part of your eye). The lens focuses the light so that your brain and eye can work together to process information into a picture.

When a cataract clouds over the lens, your eye can't focus light in the same way. This leads to blurry vision or other vision loss (trouble seeing). Your vision change depends on the cataract's location and size.

Definition

A cataract is a clouding of the normally clear lens of the eye. For people who have cataracts, seeing through cloudy lenses is a bit like looking through a frosty or fogged-up window.

Types

Cataract types include:

1. Cataracts affecting the center of the lens (nuclear cataracts).
2. Cataracts that affect the edges of the lens (cortical cataracts)
3. Cataracts that affect the back of the lens (posterior subcapsular cataracts)
4. Cataracts you're born with (congenital cataracts).

Cause

Most cataracts develop when aging or injury changes the tissue that makes up the eye's lens. Proteins and fibers in the lens begin to break down, causing vision to become hazy or cloudy.

Some inherited genetic disorders that cause other health problems can increase your risk of cataracts. Cataracts can also be caused by other eye conditions,

past eye surgery or medical conditions such as diabetes. Long-term use of steroid medications, too, can cause cataracts to develop.

Signs and Symptoms

Signs and symptoms of cataracts include:

Clouded, blurred or dim vision

Increasing difficulty with vision at night

Sensitivity to light and glare

Need for brighter light for reading and other activities

Seeing "halos" around lights

Frequent changes in eyeglass or contact lens prescription

Fading or yellowing of colors

Double vision in a single eye.

Risk Factors

Factors that increase your risk of cataracts include:

Increasing age

Diabetes

Excessive exposure to sunlight

Smoking

Obesity

High blood pressure

Previous eye injury or inflammation

Previous eye surgery

Prolonged use of corticosteroid medications

Drinking excessive amounts of alcohol.

Diagnosis

To find out if you have cataracts, your doctor will want to know all about your symptoms. They'll look closely at your eyes and may do some tests including: Visual acuity test. This is a fancy way of saying "eye chart exam." Your doctor will ask you to read letters from a distance to find out how sharp your vision is. First you'll try it with one eye and then the other. They may also then do a glare test, where they shine a bright light in your eye and then ask you to read the letters.

Slit-lamp exam. This uses a special microscope with a bright light that lets your doctor check different parts of your eye. They'll look at your cornea, the clear outer layer. They'll also examine the iris the colored part of your eye and the lens that sits behind it. The lens bends light as it enters your eye so you can see things clearly.

Retinal exam. Your doctor puts drops in your eyes to widen your pupils, the dark spots in the middle that control how much light gets in. This lets them get a good look at the retina -- the tissue around the back of your eyes -- and a better view of the cataract.

Treatment

There are several kinds of operations for cataracts, but they all have one thing in common: Your surgeon takes out the cloudy lens and replaces it with an artificial one.

You might feel a little uncomfortable with the idea of an operation on a sensitive spot like your eye. But it's a very common procedure. You'll get medicine called local anesthesia to numb your eye. You'll be awake but sedated, and you won't feel anything.

It usually takes about 15 to 20 minutes, and you don't need to stay overnight in a hospital. If you have cataracts in both eyes, your doctor will wait until your first eye heals before they perform surgery on the second. More than 95% of people who have this done say they can see better afterward.

Small-incision surgery: You may also hear your doctor call this phacoemulsification. Your surgeon makes a tiny cut on your cornea. They put a small device in your eye that gives off ultrasound waves that break up your cloudy lens. Then, they take out the pieces and put in the artificial lens.

Large-incision surgery: This isn't done as often, but doctors sometimes suggest it for larger cataracts that cause more vision trouble than usual. It's sometimes called extracapsular cataract extraction. Your surgeon takes out your clouded lens in one piece and swaps it out for an artificial one. You'll probably need a little more time to heal from this surgery than from the small-incision type.

Femtosecond laser surgery: In this operation, your surgeon uses a laser to break up the lens. As with the other types, they'll then put in the new lens. Your doctor may suggest this if you also have an astigmatism, a curve of your cornea that makes your vision blurry. Your surgeon can treat that problem during the cataract surgery by using the laser to reshape your cornea.

Surgery is the only way to treat cataracts, but you may not need it right away. If you catch the problem at an early stage, you might be able to get by with a new prescription for your glasses. A stronger lens can make your vision better for a while. If you have trouble reading, try a brighter lamp or a magnifying glass. If glare is a problem

for you, check out special glasses that have an anti-glare coating. They can help when you drive at night. Keep close tabs on how your cataracts affect the way you see. When your vision troubles start to get in the way of your daily routine -- especially if they make driving dangerous -- it's time to talk to your doctor about surgery.

After cataract surgery

For most people, recovery goes smoothly. How long it takes depends on which type of surgery you get. But in general, you'll notice that your vision gets much better a few days afterward. After about a week or two, you can go back to doing all the things you enjoy.

As with any surgery, there are risks. It's rare, but you could have an infection or bleeding. There's also a chance your retina could pull away from the tissues at the back of your eye. This is called a detached retina.

Some people have an issue after cataract surgery called posterior capsule opacification (PCO). Your vision may get cloudy again because the capsule in your eye that holds the artificial lens in place gets thicker. Laser surgery called YAG can fix the problem. Sometimes, this happens 1 year after cataract surgery, but other times, it doesn't happen until 10 years later.

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