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Care of Patient With Cataract :- A Literature Review

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ABSTRACT *A cataract is a clouding of the normally transparent lens of the eye, which maycause blurred or hazy vision. Cataracts form as part of the natural aging process.However, other factors such as heredity, eye disorders, eye injuries, diabetes,glaucoma, macular degeneration (aging of the retina) and even some medicationscan contribute to the development of cataracts.Someindications that a cataract may be forming includeblurred or hazy vision, the appearance of spots infront of the eyes, or the feeling of having a film overthe eyes.The cataract may need no treatment at all if the vision is a little blurry. Surgery is the only way to remove a cataract. The advances in modern-medicine and improvements in microsurgical techniques have made the treatmentof cataracts a highly successful procedure. Cataracts cannot be removed with alaser, only through a surgical incision.*

Introduction

The eye is similar to a camera. The pupil is like the aperture of the camera, regulating the amount of light entering the eye. The cornea is the clear window of the eye and helps focus the light. The natural lens is clear like glass. The light-sensitive part of the eye is the retina, a thin layer of tissue lining the back of the eye. It is like the film in the camera. When light hits the retina a picture is taken and messages about the picture travel through the optic nerve to the brain. This is how we see. A cataract can be compared to a dirty camera lens or a fogged window[1]. The word cataract simply means the development of opacity in the crystalline lens inside the eye[2]. Cataracts occur when the normally clear lens of the eye becomes cloudy, restricting the amount of light that reaches the retina, leading to a decrease in vision[3]. The most common cause of cataracts is ageing. Without treatment cataracts will eventually lead to complete blindness. And while this is extremely gratifying, it should also be realized that cataract surgery is not without potential risk of complication[4].

Cataract is the major cause of blindness in the world and the most prevalent ocular disease[5]. In the United States, cataracts are the most frequently cited self-reported cause of visual impairment and the third leading cause of preventable blindness[6, 7]. Visual disability from cataracts accounts for more than 8 million physician office visits per year[8]. In the United States, more than 1.35 million cataract surgical procedures were paid for by Medicare in both 1990 and 1991, making it the most common surgery for Americans over the age of 65[9-11]. Between 1987 and 1988, 97 percent of cataract surgery patients received intraocular lens implants[12]

Epidemiology of Cataract

The NHANES study showed a progressive increase in lens opacities with age. Approximately 12 percent of participants of ages 45-54, 27 percent of those ages 55-64, and 58 percent of those ages 65-74 had lens opacities. Of the 65-74 year age group, 28.5 percent had lens opacities with associated vision decrease[13].

The Watermen Eye Study examined lens opacities for fishermen in age ranges from 30 to 94 years and found a progressive increase in lens opacities with age. Lens opacities causing vision loss were found in approximately 5 percent of the age 55-64 group, 25 percent of the age 65-74 group, and 59 percent of the 75-84 age group[14].

The Framingham Eye Study showed the prevalence of lens opacity with decreased vision was 4.5 and 45.9 percent, respectively, for the same age groups[15].

How fast does a Cataract develop?

It is not possible to predict exactly how fast a cataract will develop in any one person. Cataracts associated with ageing usually develop gradually over a period of years. Other cataracts may develop rapidly over a few months.

Signs and symptoms of cataracts:

The hallmark symptoms of cataract are decreased vision and increased problems with glare. Changes in refractive error may also occur. Mild cataracts that do not significantly affect vision (e.g., cortical changes or smaller PSCs) may be identified clinically. In such cases, patients may be advised to watch for vision changes, such as reduced visual acuity or contrast sensitivity or seeing multiple images, which may be constant or occur only under certain conditions. The patient should be advised that the presence of a lens opacity does not necessarily warrant surgical intervention. When vision loss affects the ability to perform activities of daily life, consideration should be given to cataract extraction.

Diagnosis[16]

The initial diagnosis of cataract may be made by any of a number of providers, such as a primary care physician, optometrist, or ophthalmologist. The optometrist is often the first to detect, diagnose, and counsel the patient concerning the presence of cataracts and other eye diseases. The optometrist serves not only as counselor but also as an advocate for quality surgery and postsurgical care. If surgical intervention is undertaken, the optometrist is likely to be involved in providing postoperative and continuing care for cataract patients.

Risk Factors[17]

In addition to age, risk factors for the development of cataract include:

Diabetes mellitus: Persons with diabetes mellitus are at higher risk for cataracts, and persons with diabetes who

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have cataracts have a higher morbidity than those without cataracts.

Drugs: Certain medications have been found to be associated with cataractogenesis and vision loss. There is an association between corticosteroids and posterior subcapsular cataracts[19]. Antihypertensive agents have not shown a high association with onset of cataract.

Ultraviolet radiation: Studies have shown that patients living in environments with high UV-B radiation levels have a higher incidence of cataract, Also, if not protected, persons with higher occupational exposure to UV light are at greater risk for cataract than those with lower occupational exposure rates.

Smoking: An association between smoking and increased nuclear opacities has been reported

Alcohol: Several studies have shown increased cataract formation in patients with higher alcohol consumption compared with patients who have lower or no alcohol consumption[24].

Nutrition: Although the results are inconclusive, studies have suggested an association between cataract formation and low levels of antioxidants (e.g., vitamin C, vitamin E, carotenoids). **Management**

In the early stages of a cataract, where vision is only minimally affected, new lenses for glasses give the sharpest vision possible. When the cataracts start to interfere with your daily activities and glasses cannot improve this vision, surgery is the only option. The surgery is relatively uncomplicated and has a success rate of at least 95 percent.

Cataract surgery involves removing the cataract-damaged lens and replacing it with a clear plastic lens known as an intraocular lens (IOL). The eye is carefully measured prior to surgery so that the appropriate sized intraocular lens can be selected. The aim of surgery is to restore vision (particularly distance vision) as much as possible. Intraocular lenses of differing magnifying power can be used to help correct pre-existing short-sightedness (myopia), long-sightedness (hyperopia) or astigmatism[3].

Surgery involves making a small incision in the front of the eye, through which the old lens is removed and a new intraocular lens is inserted. The incisions are usually made using a hand-held microscopic blade but, in recent times, laser cataract surgery has allowed computer-guided, bladeless incisions to be made. Laser cataract surgery should not be confused with laser eye surgery (PRK and LASIK) which is used to correct problems with the eye's ability to focus.

There are two main techniques for the surgical treatment of cataracts:

Phacoemulsification surgery
A 3mm incision is made in the front of the eye and the lens is broken into tiny pieces by a special machine that emits sound waves. The lens is then suctioned out of the eye capsule. In this procedure the back half of the lens capsule (posterior capsule) is left in place to support the new intraocular lens. The much smaller incision required for this technique has the advantage of a reduced healing time.

Extracapsular surgery
A 10-12mm incision is made in the front of the eye and the lens is removed. The posterior capsule is left in place to support the new intraocular lens. Once the new lens has been fitted the incision in the eye is closed using tiny, invisible stitches[3]. Some people cannot have an IOL fitted due to the presence of another eye disease or have problems during surgery. In these cases a soft contact lens, or high magnification glasses may be recommended.

Recovery
Patients are normally sent home after a few hours of recovery in the clinic or hospital, and when the sedation has worn off. An eye pad is usually positioned over the eye for the first night in order to protect the eye. Driving is not permitted after the surgery so arrangements for transport home will need to be made.

Detailed instructions on care of the eye will be given prior to leaving the clinic / hospital. General guidelines include not rubbing, pressing or jarring the eye. It is usual to feel some mild pain and discomfort in the eye after cataract surgery. This can usually be well controlled with medications such as paracetamol. Eye drops to reduce inflammation and help prevent infection are prescribed for 2 - 3 weeks after the surgery. It is important to take these as directed[3].

While it may take a day or two for the eyes to synchronise, people generally report that vision improves quickly. Distance vision returns but reading glasses will still be required for fine or detailed visual tasks. A new prescription for reading glasses is often given at the second follow up visit.

Most people report that colours seem different and that things are much brighter after cataract surgery. If there is difficulty adjusting to this, dark glasses may be recommended for comfort.

Complications
The success rate of cataract surgery is high, with over 90% of cases achieving a good result. While cataracts cannot recur after cataract surgery, it is possible for the remaining portion of the lens capsule to become cloudy. This clouding tends to develop slowly over a period of months or years and is sometimes referred to as a secondary cataract. The clouding can be easily treated during an outpatient visit to the specialist. A special laser called a YAG laser is used to make a tiny hole in the lens capsule. This lets light through to the retina, quickly restoring vision.

After cataract surgery there is an increased risk of detachment of the retina. Other complications can include fluid buildup in the retina, bleeding within the eye, inflammation and swelling of the eye, increased pressure within the eye and drooping of the eyelid. Again, if any of these complications are suspected or symptoms such as pain, redness, or vision disturbances are experienced in the days or weeks after surgery, the specialist should be consulted immediately.

Conclusion
Cataract is a common problem in an aging population. Reduced vision due to cataract can greatly affect the patient's ability to perform day-today activities. Proper care through both nonsurgical and surgical intervention can lead to improved productivity, reduction of personal suffering, and substantial cost savings for the affected individuals, their

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families, and the health care system as a whole.

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