

# Ophthalmic Problems Among the Elderly in Malaysia

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## Introduction

In Malaysia, the elderly (those above 60 years of age) make up 5.9% of the population at present. With better health care services provided for the elderly this percentage is expected to rise to 6.6% by the year 2000 and 11.3% by the year 2020.

With advancing age numerous changes take place in our body. There are changes in vision and in the eye which accompany ageing. Some disorders and diseases of the eye are directly related to the ageing process. In Malaysia some of the elderly do not seek medical attention because of the myth that this is part of old age and they think that nothing can be done. Most of these conditions can be prevented or treated and should not be shrugged off as "the price of ageing".

Many of the ophthalmic problems in the elderly are irritating and troublesome but the vision is not affected: such as watery eyes, dry eyes, trichiasis, entropion, ectropion and blepharospasm. Treatable causes of loss of vision are cataract, corneal diseases and retinal detachment. Preventable causes of loss of vision are glaucoma and diabetic retinopathy. Untreatable causes of loss of vision are age related macular degeneration, myopic degeneration and other maculopathies.

## Watery Eyes

Watery eyes may be due to defective drainage of tears (epiphora) or excessive tear formation (lacrimation). Epiphora is a condition in which drainage of tears through the lacrimal passages is faulty. It arises from a number of causes: faulty apposition of the punctum in the lacrimal lake; closure of the punctum, paralysis of the orbicularis oculi muscle, and blockage in the

lacrimal sac and the nasolacrimal duct. Lacrimation in the elderly is usually due to irritation of the conjunctiva or cornea due to trichiasis, entropion, allergy or chronic infection. Treatment of watery eyes is directed at the cause.

## Dry Eyes

Dry eyes is a common problem among the elderly as tear production normally decreases with age. Although dry eyes can occur in both males and females at any age, females after menopause are most often afflicted. Dry eyes can also be associated with arthritis, collagen diseases and Sjogrens' syndrome. Some drops and medications can also cause dry eyes by reducing tear secretion.

The tear film has an important visual function in the eye. A film of tears, spread over the cornea by a blink, makes the surface of the cornea smooth and optically clear making clear vision possible. The tear film consists of three layers: (a) outer oily layer to smoothen the tear surface and reduce tear evaporation, (b) middle watery layer to clean the eye and wash away foreign particles, (c) inner most mucus layer to spread the tear film evenly over the corneal surface and allow the tears to adhere to the eye.

The usual symptoms of dry eyes are stinging, burning, scratchiness and stringy mucus. Surprisingly, increased watering may be a symptom of dry eyes when the lubricating oily layer is deficient and the irritation reflexly produces excess watery tears.

The basis of treatment is replacing natural tears with artificial tears which may be used as often as necessary from once or twice a day to several times an hour. Drops may be supplemented with lubricating ointments or gels especially at night.

## **Eyelid Disorders**

Trichiasis is a condition in which the eye lashes are directed towards the globe and irritate the conjunctiva and cornea. It is due to misdirected growth of the eye lashes, entropion or scarring of the lids. Trachomatous scarring of the lids used to be a common problem in the elderly in Malaysia among those who had migrated from endemic areas of trachoma in India and China. Epilation of the involved eye lashes only gives temporary relief. Permanent relief can be achieved with electrolysis, laser, cryotherapy or surgery.

Entropion is a condition in which the eyelid margin is turned inwards so that the eye lashes irritate the conjunctiva and cornea. In the elderly the atonic type of entropion is due to laxity of the orbicularis oculi muscle and the loss of elasticity of the skin. Temporary relief is achieved by taping the lower lid down to the cheek. Surgery to evert the lid is more effective.

Ectropion is a condition in which the lid margin of the lower eyelid is everted and causes exposure keratitis. It is usually bilateral and common among the elderly. Ectropion may be caused by relaxation of the orbicularis oculi muscle due to ageing or following facial nerve palsy. Surgical shortening of the lower lid in a horizontal direction corrects the condition.

Blepharospasm is characterised by involuntary repetitive spasms of the orbicularis oculi muscle and tends to occur bilaterally in the elderly. The spasms tend to progress in force and frequency resulting in a grimacing expression and closure of the eyes. It causes a cosmetic deformity as well as a visual problem since the patient can only see clearly for brief periods in between the spasms. The aetiology is unknown and treatment was unsatisfactory previously. Today Botulinum A toxin injections provide relief for periods of three to four months.

## **Refractive Changes**

With ageing, the lens loses its flexibility and hardens and is unable to change its shape to focus light from objects at various distances. Presbyopia sets in by the age of forty and one is unable to read at close range. Reading glasses become necessary. The optical power

of the glasses need to be increased between the ages of forty and sixty as the lens continues to harden. The elderly may be able to read without glasses because they become more near sighted due to the development of early cataract, but this "second sight" is only temporary.

Elderly persons with visual problems due to permanent damage of the macula or the optic nerve need low vision aids which are powerful optical devices such as magnifiers, telescopes and closed circuit television.

## **Cataract**

Age-related cataract is by far the most common type of cataract. In fact if we live long enough, most of us will develop cataract. Changes begin to occur in the clear lens after the age of 40 years. When the lens opacity or clouding of the lens interferes with vision it is known as cataract. When the decreased vision interferes with the individual's work, hobbies or lifestyle, it is time for removal of the cataract. In Malaysia, most of the cataract patients are in their sixties or seventies. Some of the elderly still believe that the cataract must be ripe before it can be removed. With modern technology, cataracts can be removed at any stage. Tremendous improvements have been made in the methods of cataract removal. No medical treatment in the form of eye drops, pills or special diets or exercises have been proven to retard the development of cataract. There has been increasing evidence implicating ultraviolet radiation as a significant factor in the occurrence of senile cataracts.

Modern cataract surgery with the introduction of the operating microscope, better instrumentation, viscoelastics, improved sutures and the refinement of the intraocular lenses, is highly successful in restoring vision but like all surgeries there is no 100% guarantee. The most common method for removal of cataract is extracapsular cataract extraction with a posterior chamber intraocular lens implantation. A small number of cases may need anterior chamber intraocular lenses or posterior chamber scleral fixation lenses due to various reasons. Thick aphakic glasses for patients who do not have lens implant is a thing of the past. Alternatively, aphakics used to be fitted with contact lenses but most elderly, especially the Malaysian elderly are unable to tolerate or insert contact lenses easily.

Aggressive marketing and improvement of techniques has led to the reemergence of phacoemulsification that utilises ultrasonic vibrations to emulsify the nucleus through a small incision. Small incision cataract surgery, with or without sutures, enables more rapid recovery with less astigmatism. Cataracts cannot be removed by laser; there has been a misconception about this as well as confusion with phacoemulsification. The YAG laser is used for posterior capsulotomy that is making an opening in the thickened posterior capsule which develops in some patients one to two years after surgery.

### Cornea Disorders

The elderly can have decreased vision from corneal conditions such as corneal dystrophy, corneal scars, bullous keratopathy from glaucoma, trauma and surgical procedures. Cornea grafting in the elderly may have problems as long term oral steroids may be required to prevent graft rejection.

### Vitreous Floaters

The vitreous gel degenerates in middle age and the elderly often forming microscopic clumps or strands in the vitreous cavity. These are seen as floaters in the form of dots, circles, lines, clouds or cobwebs. The most common cause is vitreous shrinkage or condensation called posterior vitreous detachment which is of no consequence. Other causes are bleeding, retinal hole or tear, especially if the floaters are preceded by flashes of light. A retinal hole or tear needs to be sealed with laser photocoagulation to prevent progression to retinal detachment.

### Retinal Detachment

Retinal detachment occurs when the watery fluid from the vitreous enters the retinal hole and separates the layers of the retina. It is more common in myopes and usually occurs in middle aged or elderly individuals. Retinal detachment is usually heralded by floaters, flashes of light or the appearance of a dark shadow in the field of vision. In some cases detachment occurs suddenly and the patient experiences total loss of vision in one eye. Unless

treated early, retinal detachment can lead to total permanent loss of vision.

Several procedures may be necessary to treat the retinal detachment. Cryopexy or laser photocoagulation is necessary to seal the hole. The fluid collected behind the layers of the retina may have to be drained. External buckling with silicone, silastic or sponge bands may be necessary to indent the sclera. Internal tamponade with air or gases may be necessary. Silicone oil may be used as a last resort.

Complicated retinal detachments which have traction bands or haemorrhage may need vitrectomy.

Depending on the patient's health and the length of time needed for the procedure these operations can be performed under local or general anaesthesia. In the elderly, general anaesthesia poses higher risks.

About 90% of all retinal detachments can be reattached by modern surgical techniques but in 20% of cases two or three operations may be necessary. The degree of vision which finally returns, after six months of successful surgery, depends on a number of factors such as early reattachment, state of retina and the presence of a macula pucker. Forty per cent achieve excellent vision while the remainder have varying degrees of sight.

### Glaucoma

Glaucoma is one of the leading causes of blindness in adults. Two out of every 100 people above the age of 40 have their vision threatened by glaucoma and the incidence rises with age. Yet when diagnosed early blindness from glaucoma is almost always preventable.

Chronic open angle glaucoma occurs insidiously without symptoms until the optic nerve is badly damaged - hence the name "sneak thief of sight". Early diagnosis is made easily by periodic eye examinations especially in the high-risk group with a family history of glaucoma, diabetes, myopia, and smoking. The first line of treatment is medical with topical eyedrops such as pilocarpine, betablockers or oral carbonic anhydrase inhibitors. Other modalities are laser therapy or surgery. Trabeculectomy is a refined microsurgical procedure, which is successful in controlling most cases of glaucoma.

Acute angle closure glaucoma is more common in elderly females especially the Chinese. The patient has blurring of vision, rainbow haloes around lights, severe pain, nausea and vomiting. It is an ophthalmic emergency since blindness can result in a day or two if not treated urgently. Intensive miotic drops, intravenous or oral carbonic anhydrase inhibitors or osmotic agents may relieve the attack. Laser iridotomy or surgical iridectomy or trabeculectomy provides permanent cure.

### **Diabetic Retinopathy**

Diabetic retinopathy continues to be one of the leading causes of blindness in the developed world. The risk of developing diabetic retinopathy increases the longer a person has diabetes. Almost 80% of the people with diabetes for 15 years have some damage to the retinal blood vessels. Untreated diabetics are said to be 25 times more prone to blindness than the general population.

Diabetic maculopathy especially the exudative type and oedematous type reduces vision when the macula is involved. Argon laser photocoagulation to the posterior pole in the form of the focal or grid laser prevents further progression of visual loss and even improves vision in some cases.

Patients with preproliferative diabetic retinopathy may not have any symptoms but can easily be diagnosed by funduscopy. If adequately lasered at this stage, preproliferative retinopathy will not progress to new vessel formation.

In the proliferative diabetic retinopathy fragile new vessels proliferate and lead to severe complications of vitreous haemorrhage, fibrous change, tractional retinal detachment and rubeotic glaucoma.

Urgent laser photocoagulation can cause regression and the disappearance of the new vessels. Panretinal laser photocoagulation works by reducing the angiogenic stimulus from the ischaemic retina. It significantly reduces the risk of blindness from vitreous haemorrhage, fibrosis and tractional retinal detachment.

Vitrectomy may be necessary for cases of vitreous haemorrhage. Retinal fibrosis and tractional detachment need more complicated surgical procedures such as membrane peeling, cutting fibrous bands, use of air fluid gas exchange and silicone oil.

Regular monitoring for early detection of diabetic retinopathy and prompt laser photocoagulation prevents blindness in diabetics.

### **Macular Degeneration**

Age related macular degeneration is the leading cause of permanent blindness in the elderly. The incidence increases with each decade over the age of 50. The atrophic type forms small scars on the macula. The exudative type has oedema due to serous fluid collection in the macula which may also have subretinal neovascular membrane. Subretinal haemorrhage leaves a larger scar.

Macular degeneration affects the central vision and the patients have difficulty in reading. Peripheral vision is spared, allowing the person mobility. There is no known treatment or prevention of this condition. In the early stages of the exudative type focal laser may prevent neovascularisation and haemorrhage, thus limiting the scar. Low vision optical aids in the form of magnifiers and telescopes may help these patients.

In pathological myopia, degenerative changes occur in the macular region. Pigment proliferation and subretinal haemorrhage reduces central vision permanently.

### **Miscellaneous Conditions**

In the elderly, painful blind eye from various causes such as absolute glaucoma, rubeotic glaucoma, bullous keratopathy is a problem as Malaysians refuse enucleation and have to be managed conservatively. The elderly in Malaysia are fortunate in that some conditions which cause blindness such as giant cell arteritis and malignant melanoma of the choroid, are rare.

The leading causes of preventative blindness in the world are trachoma, xerophthalmia, leprosy and onchocerciasis but these are not problems in Malaysia.