

GLAUCOMA: A WHITE COLLAR THIEF

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“BE SURE YOU OR YOUR SPOUSE IS NOT THE ONE AMONGST EIGHT MILLION PEOPLE AFFECTED BY GLAUCOMA IN INDIAN POPULATION. 6.7 MILLION PEOPLE ARE ESTIMATED TO BE TOTALLY BLIND DUE TO THIS DISEASE IN THE WORLD“

Gently, quietly and stealthily , the disease kills the Ganglion cells, the most vital unit of vision and leads to gradual imperceptible narrowing of “ Field Of Vision “(Fig.1) finally leading to irreparable total blindness. That is the classical disease of Glaucoma, aptly labeled as KALA MOTIA OR KALA PANI since in earlier days the disease was untreatable and almost always resulted in total blindness.

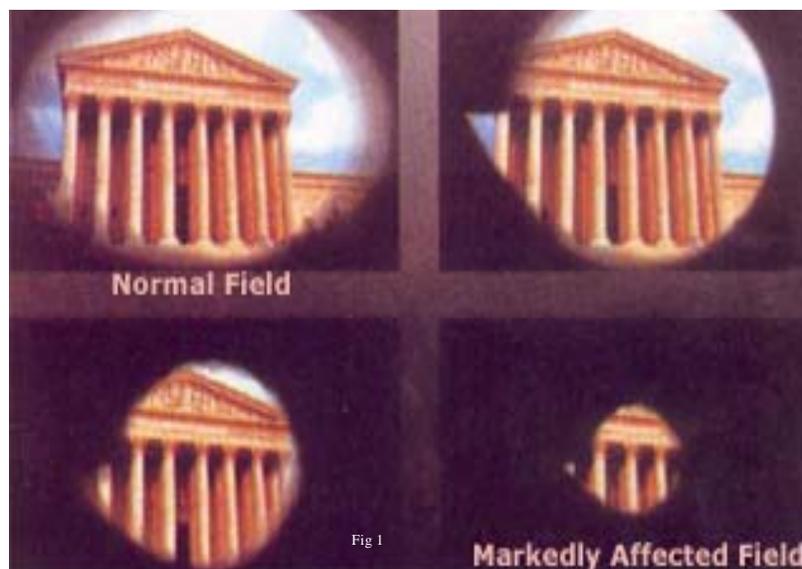


Fig 1 Showing affected field of vision

The worst aspect of the disease is that it betrays no signs and symptoms in almost 30 percent of the patients and hence remains undetected till the person has lost sufficient field of vision. By the time the vision loss becomes evident, 50 percent of Ganglion cells are destroyed. The central vision may continue to remain normal, even 6/6, till the disease is quite advanced. Some of the patients may have the complaint of watering of eyes, ocular heaviness, discomfort or pain, headache, ocular fatigue or **early onset of presbyopia (at the age of 36-38 years) or dusk or night blindness**. Detection of disease in early stage is vital but needs expertise of an Ophthalmologist, who has a well equipped clinic and devotes sufficient time to examine the patient in detail. Opticians, though good in the art of refraction, most often miss the disease since they are neither equipped nor trained to measure the IOP or look into the fundus or assess the fields.

Glaucoma, a blinding disease

High Risk Patients Are Aging Population, Myopes, Diabetics, Hypertensive and Family History of Glaucoma

A fluid called aqueous humor is formed constantly in the eye by the ciliary body to provide nutrition to the lens and cornea and takes away the waste products. The aqueous humour passes in front of the lens, into the anterior chamber towards the angle of anterior chamber. Here, it passes into fine spaces through the trabecular meshwork and out of the eye (Fig 2). The process of formation and drainage of fluid is almost so balanced that certain level of intraocular pressure is maintained which is vital for the normal functioning of the eye. With the advancing age or due to certain other factors, the trabecular spaces becomes narrow and hence produce resistance to out-flow of aqueous, thereby, the intraocular pressure gradually rises which is not compatible with the health and function of the eyes, finally resulting in gradual and persistent damage to the Optic Nerve. This condition is termed as Chronic Simple Glaucoma.

In certain hypermetropic eyes, the angle of anterior chamber gets suddenly occluded thereby leading to sudden and marked rise of pressure associated with severe pain, redness and loss of vision. This glaucoma is labeled as Acute Glaucoma and needs immediate and aggressive treatment. Occasionally, some ailment in the eye like hyper mature cataract, inflammation or trauma (surgical or otherwise) can also lead to glaucoma.

Glaucoma can occur even in new born child or at any age though most often it occurs after the age of 35-40 years. Beware of steroid (cortisone) drops (mostly used in allergic conjunctivitis) since these drops if instilled continuously for 3-6 months even in child's eyes, can lead to glaucoma and blindness.

Population at risk i.e., family history of glaucoma, aged population, myopic and diabetic patients should be especially cautious to get their eyes checked up once at the age of 35 years and then every one to two years to exclude glaucoma. Both sexes are almost equally affected with this disease. Unknown reasons or probably better diagnostic techniques are detecting glaucoma in much younger population in recent years.

Steroid drops can lead to rise in intraocular pressure even in children

To detect glaucoma, pressure has to be recorded, preferably by Applanation Tonometry (Fig.3) or the Non Contact Tonometry and the Ophthalmoscopy must be done to visualize the Optic disc which shows pallor and cupping of the disc (Fig 4 and 5) due to increased intraocular pressure. In suspected cases, Computerized Automated Field Testing (Fig 6) is done and a multicolour record is obtained (Fig 7). Computerized field recording most often clinches the diagnosis even in very early cases as well as it precisely informs about the degree of loss of field of vision. Examination of the angle (Gonioscopy) most often helps in evaluating and managing the case of glaucoma. In recent years, more sophisticated technologies like Confocal Scanning Laser Tomography, Scanning Laser Polarimetry and Optical Coherence Tomography have emerged which can very precisely evaluate the optic disc and measure the Nerve Fiber layer thickness, thereby diagnosing glaucoma at a very early stage.

Rise of pressure above 21mm Hg makes us suspect the case to suffer from glaucoma but some of the eyes even with pressures around 17 mm Hg (Normotensive Glaucoma) may suffer glaucomatous damage, specially myopic eyes.

Medical Therapy

Once diagnosed, the patient is put on the drugs which either reduce the formation of aqueous or increase the facility of aqueous out-flow or both, resulting in normal intraocular pressure. It is vital that the drugs must be instilled religiously at the advised time and interval. Advances in medical therapy in recent years is most often able to achieve the “target pressure” but it is imperative that the eyes are regularly checked up at intervals advised by the doctor since a particular drug may fail and the patient may be advised additional drug or change of drug. The drugs control the glaucoma till they are instilled but never cure it. In spite of best medical therapy, some times the pressure is not controlled or the patient exhibits adverse effects due to drugs, surgery has to be undertaken. Surgery is sometimes the first choice when the patient can not afford to get his eyes examined regularly or can not afford the cost of drugs or the initial pressure is very high.

Till now Timolol, a drug with excellent topical acceptability but with potentiality of some adverse effect in cardio- respiratory patients was the drug of choice but now more potent and relatively systemically safe drugs like Brimonidine, Latanoprost and Bimatoprost have appeared on the scene. Due to high cost, these drugs are mostly employed as second line therapy. Most of the antiglaucoma drugs have some topical or systemic adverse effects. Problem of dryness of eyes, iris and lid pigmentation, allergic conjunctivitis, hyperemia of conjunctiva and even increase in the size of eye lashes are few of the important side effects of newer drugs.

Lasers Trabeculoplasty

The aim of Laser therapy in glaucoma is to open up some of the narrowed trabecular spaces so as to improve the out-flow of aqueous humour. This is done by a procedure called Laser Trabeculoplasty. In Indian population, this procedure has usually short-term effect since due to pigment dispersal, and the trabecular spaces get again blocked. Hence, the procedure is only advocated in very early glaucoma or in bad surgical risk cases.

Microsurgical Procedures

Glaucoma surgery is aimed to provide an alternative passage to drain the aqueous out of the eye. Recent microsurgical procedures like Trabeculectomy and Viscoanalostomy have revolutionized the results with a success up to 95 percent, involving practically no risk to the eyes. Finer dissection under the microscope and the judicious use of antimetabolic drugs not only adds to the success of the surgery but provides long term control of pressure. In some of the formidable glaucomas, we have to implant silicon valves (Setons) to drain the excess fluid. However, it should be understood that in spite of successful surgery, vision already lost can not be regained. Once controversial and dreaded, now it is possible to operate glaucoma and cataract with lens transplant surgery at the same sitting with gratifying results.

Awareness of wide prevalence of the disease involving approximately four percent of the population in India and timely examination of eyes, especially by the high risk patients, can prevent persons getting blind due to glaucoma.