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Preventive ophthalmology*

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THIS is a relatively new field, with a wide scope. It needs to be rapidly developed in order to take away some of the heavy load, that is already over-burdening our short-staffed eye units, in the hospitals. The public health division can play a vital role, in the implementation of the programmes related to preventive ophthalmology.

This subject can be divided into two broad categories. The first, looks at the subject from the public health angle while the second deals with it from the occupational health angle. In my opinion the latter should be a part and parcel of the former, before it could be called a completely balanced service.

I. Ophthalmological Problems in Public Health and their Prevention:

(i) Vitamin A Deficiency:

This is by no means a problem of the past. It is with us even to-day, in most of the states in Malaysia, especially in the rural areas. A survey, done in Kelantan between 1969-72, disclosed an average of 60 cases of Vitamin A Deficiency reported annually. During one of my recent visits to the Kuala Brang area, there were reports of 18 cases of Vitamin A Deficiency from January to October 1976. Many of them had xerophthalmia and some developed keratomalacia. It is imperative that the public health teams aggressively assault this problem, if they are to prevent a child from loosing his sight. Fortunately, the mobile health teams and the school health teams are picking up some children with Bitot spots or with complaints of night blindness. My recommendations to solve, this problem are:

(a) Vitamin A Injections should be given as a prophylactic dose, to the young infants along with other immunizations, especially in the rural areas.

(b) The eating of Vitamin A & D capsules or taking cod liver oil.

(c) In encouraging the policy of "Buku Hijau", advice on the planting of backyard gardens to grow more green vegetables. Carrots are a good source of Vitamin A. Fruits like the papaya can be grown easily and should be eaten.

(d) Poultry should be reared and children encouraged to eat more eggs and a balanced diet.

(e) Health Education should be carried out to change their attitude and their priorities, for example not to sell their complete home produce for the sake of buying a radio or television. This is often at the cost of their own health.

(ii) Infections of the Eyes:

The eyes can be affected with many forms of conjunctivitis, like acute conjunctivitis, purulent conjunctivitis, gonococcal

*Read before the Malaysian Ophthalmological Society.

conjunctivitis and most of these are bacterial in origin; or viral infections like Herpes Zoster. Whatever the cause of the infection, the public should be advised to seek early treatment. If the infections are neglected, many serious sequelae can develop and these can seriously threaten the sight of the eyes.

(iii) Physical Injuries to the Eyes:

Lacerations can easily occur in the eye, for example from foreign bodies. If these are not treated promptly, they can undergo superimposed bacterial infection, resulting in lesions like kerato – conjunctivitis, hypopyon ulcers and so forth. Sharp objects can cause penetrating injuries, which can affect the globe of the eye and even cause cataract of the lens. Explosive injuries, for example, from fire crackers or other penetrating accidental injuries, can easily cause pthysis bulbi, especially if early treatment is ignored, or even sympathetic ophthalmitis of the other eye. Many padi planters come up with punctate keratitis. Removing of scrap rubber before tapping, if done carelessly, can cause eye injuries like corneal ulceration, resulting in opacities.

(iv) Growth in the Eyes:

The commonest example is a pterygium. This should not be allowed to grow over the corneal area as it can form chronic adhesions and even post-operatively leave scars, which hinder a clear vision. This condition is allowed to progress, either due to ignorance or from fear of undergoing surgery. The patient can be convinced that it is a very simple operational procedure, with no danger.

(v) Other Patho-physiological Conditions:

The two good examples of these conditions are cataract and glaucoma. Cataract comes on with advancing age. Very often the rural people do not come to the hospital till they have virtually lost their eyesight. They may be only having light perception left or be able to count fingers. It is the serious handicapping that resorts them to seek advice. They should be told that these conditions need early treatment, through surgery, in which case the eyesight can be restored to normalcy.

Similarly cases of diabetes and hypertension are to be adviced that, if they do not undergo early treatment to control the above diseases, they can easily suffer from retinopathy and defective vision.

II. Ophthalmological Problems Related to Industry and their Prevention:

(i) Dusts: Most dust particles or chips of metal can easily be lodged in the eyes, if no protective eye-wear is used. They can cause irritation and lacrimation. The normal tendency is to rub the eyes. This is more damaging, as a sharp foreign body can cause lacerations, which opens them to infection. As examples, we have granite stone, quarry workers or tomb-stone makers who chip the metal. Similarly machines which are used for metal cutting will have chips of metal flying into the eyes. This can be prevented by using an oil or water jet stream, to wash down the chips, or using protective goggles.

(ii) Splashes of Chemicals in the Eyes:

Many chrome-plating industries use acid baths. Others use alkalis and other chemicals. Splashes are easily liable to occur and if the eyes are not protected, either with goggles or face shields, severe corrosive burns of the eyes can occur. Lesions like kerato-conjunctivitis and severe scarring may also occur.

Many of the rural agricultural workers who spray trees with insecticides get the fine spray into their eyes, when the wind blows it onto them. They should be adviced to use protective eye-wear and spray, in the direction, whereby the wind carries the spray away from them.

(iii) Light Rays which are Harmful to the Eye in Industry:

The infrared or the ultraviolet rays of the light spectrum can cause superficial burns in the cornea or deeper lesions, like the cataract of the lens. The laser, which is a sharp collimated beam of light, is finding extensive use now in industry; for example, in welding, communications, diathermy. It is dangerous, if viewed with the naked eye and it can cause retinal burns. The area using lasers or radar should be 'out of bounds' for non-workers, with adequate warning signs. All workers should be compelled to use suitable eye protection. Many a welder complains of severe, pains in the eyes especially at night,

which occurs from 'arc burns' of the cornea. Workers who work with red-hot furnaces, like in steel plants or glass-works, are affected by the radiant heat and develop cataract. They should be adviced to wear suitable goggles or use face shields, to protect their eyes from the harmful rays.

Summary of Preventive Aspects:

The chemical environment especially and to a lesser extent the physical, are of major concern in industry, in relation to eye problems. Every effort must be made to make the industrial processes safe. Suitable goggles, which fit well, are ventilated and have side shields, should be provided. Alternatively, face shields may be provided. The areas, where the hazards exist should be demarcated. It should be made mandatory to wear eye protection, before entering these areas. Enough people should be trained in first aid to provide early treatment, in emergencies. Sufficient eye washing facilities, in the form of fountains or bottles containing sterile water should be available at strategic points, in the plants.

Conclusion:

All health officers, doctors and other staff or eye departments can participate actively in eyesight conservation programmes, through health education. Even, if a person cannot be convinced totally to avoid his first eye injury, he would be very receptive to advice while undergoing treatment like removal of a painful foreign body. He would at least observe preventive care, for the future. Early treatment, would also prevent damaging sequelae. Surely, anyone can be made to understand that normal eyesight, is perhaps, one of man's best possessions.

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