PATHOLOGICAL EYE CONDITIONS ENCOUNTERED IN GENERAL PRACTICE

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Although general practitioners are concerned with the entire body, ocular ailments are inordinately frequent. It is worth while to remember the normal anatomy of the eye. The reader may usefully refer to an eye atlas in following the text of this discussion.

I will discuss commonly occurring conditions, which are either exogenous or spontaneous in origin. There is a considerable overlap of each category and I will proceed from trauma and infection, through the overlapping inflammatory conditions, to those which are purely spontaneous.

TRAUMA

History and Clinical Picture

The drama of trauma is usually most arresting, but remember that it can often be a form of red herring. A careful history is helpful, but secondary infective or inflammatory features may distort the picture markedly.

1. *Foreign body.* History is very important, particularly that of striking metal with a metal tool. The possibility of an intraocular foreign body having occurred in such a case is high, and the practitioner's suspicions should be aroused, particularly if no external foreign body is found, and/or a wound is seen. In another case-history of suspected foreign body (often being described as blown into the eye), a foreign body may not be seen, although the eye is very uncomfortable, red and watering. Often in such a case, eversion of the upper lid reveals the offending piece of grit, bringing relief to both the doctor and the patient. The use of a magnifying loupe (uniocular or binocular), a bright hand light and fluorescein (today provided on sterile individual paper strips) will prove most instructive. Instillation of 2 m. of 'novesine' (Wander) into the lower fornix, is an aid to easy examination in an irritable eye. To remove the foreign body, 2 further drops of novesine will be adequate for removal with a sharp, pointed, needling knife (Bowman's or Saunders'). Remove the foreign body and as much of the surrounding lamellar of rust stain as is reasonable. (In a survey I completed some years ago,[1] it was well demonstrated how rust remains delay the healing.) At the procedure's completion, a corneal abrasion is left.

2. *Corneal abrasion.* Whether seen after removal of a foreign body, or as a first presentation, the principles of treatment are the same as those for acute corneal ulceration. Staining a cornea with fluorescein clearly shows the demarcation of the lesion.

Where the surface epithelium of the cornea has been interrupted the following treatment should be adopted:

(a) *A mydriatic* must be instilled and the choice of medicament must be related to the expected period required for healing. (2 drops of a 2% solution of homatropine with cocaine dilates the pupil for about 20 hours; 2 drops of a ½% solution of hyoscine for about 4 days; 2 drops of a 1% solution of atropine for about 10 - 14 days.)

(b) *An antibiotic ointment,* preferably neomycin or chloramphenicol, must be placed within the lower fornix.

(c) *The eye must be padded* until the epithelial continuity is restored. Many extra hours of sleep will be provided for both the patient and the doctor, if the patient is specifically told to keep his eye actively shut under the eyepad for 1 hour, after topical anaesthesia. This will avoid a 'pad abrasion' of the cornea, which is extremely painful, and the extensive loss of corneal epithelium is very similar to that seen following a physical burn of the eye. In each case, a repeat instillation of topical anaesthetic, mydriatic, antibiotic ointment, padding the closed eye and a strong sedation, will prove very effective. Both abrasions and acute ulcerations heal rapidly and the above treatment (excluding topical anaesthesia) is repeated daily until the cornea no longer stains with fluorescein.

3. *Ultraviolet corneal burns.* A history of prolonged exposure to welding arc, or sunlight on snow, is followed typically, some hours later, by severe ocular discomfort, conjunctival injection and multiple fine punctate staining of both corneae. Dark glasses, a short-acting mydriatic and a topical combination antibiotic-steroid ointment soon restore comfort.

4. *Chemical burns.* This is one of the few eye conditions in which avoidance of any delay in first-aid treatment is of paramount importance. Urgent removal of the offending fluid or solid with massive irrigation with plain water is essential. If practical, this is best achieved by the patient keeping his eyes open under water in a basin, while moving his head around. Repeated prolonged irrigation for at least 5 minutes is desirable. This usually allows time for the specific antidote, if not too irritant, to be instilled. After ensuring once again that no solid particles remain in the fornix, treatment as for corneal abrasion is completed. Here, however, an ointment containing antibiotic and steroid should be used. In cases of lime burns, 'versene' (disodium versenate) drops can be instilled as well. In these cases, heavy sedation is desirable and antihistamine tablets are indicated. Such cases should be seen by a specialist, so that use of a contact lens shell and 'rodding' of the fornix can be used to avoid symblepharon developing.

5. *Lid lacerations.* Early accurate apposition of lid margins is mandatory and I can heartily recommend the use of 6-0 black silk on atraumatic needles, obtained from sterile packs. This material is ideal for all skin suturing of the face. Debridement of facial wound edges is never necessary in primary suturing, because this region has a wonderful blood supply.

6. *Penetrating and severe contusion injuries.* In these, immediate bed rest, systemic antibiotics, sedation and padding of the eyes are very adequate first-aid treatment. This allows time for consultation and assessment. Oral enzymes are often very useful in lessening haematomata and reactive oedema. Early restoration of wound anatomy is essential and so much more can be achieved, these days, under a screen of broad-spectrum antibiotics and steroids.

INFECTION AND INFLAMMATION

Unilateral Red Eye

1. *Conjunctivitis, corneal ulcer.* A history may be very useful in establishing a diagnosis. A history of trauma, contact with conjunctivitis, a recent systemic viral infection, etc., may indicate the nature of the lesions. Associated pain and/or visual loss are important symptoms. Viral conjunctivitis is most frequently uniocular. Inclusion blenorrhoea, APC (adeno-virus) and herpes simplex viruses, are the most frequent invaders. The first two often occur in epidemics and in groups of people and often affect both eyes. Fluorescein staining of the cornea is particularly necessary in these cases, since punctate keratitis and dendritic ulcer are commonly associated with virus conjunctivitis. Systemic virus diseases of children, e.g. measles, often have associated conjunctivitis, which may be bacterial or catarrhal in origin. In all cases, the treatment of choice is to apply topical broad-spectrum antibiotic ointment, at 3-hourly intervals, with long-acting sulphonamide or tetracyline given orally, if indicated. The use of *local steroid* is specifically *contraindicated. Do not close the eye in conjunctivitis;* order the wearing of dark glasses and strict local-barrier hygiene in nursing. Virus keratitis and dendritic ulcer have a tendency to recur, especially if inadequately treated in the primary attack. Added to the above treatment, the use of IDU (5-iodo-2-desoxyuridine) is recommended, given as 'stoxil' drops or ointment, in very frequent application. Carbolization (the application of pure phenol to the anaesthetized, dried corneal ulcer and surrounding tissue) of a dendritic ulcer is still a potent weapon and often allows more rapid recovery of the cornea. The patient often blames trauma as the cause and, although it may be a false association, it has occurred coincidentally so many times that today it is accepted as a factor in lessening local resistance, allowing a virus infection to start. Topical steroids are also *specifically contraindicated* in virus keratitis, since they potentiate the condition. It is good practice never to use topical steroids in the presence of corneal fluorescein-staining or an eye infection. The principles in the treatment of corneal ulcer are the same as in corneal abrasion.

2. *Iridocyclitis.* The patient again presents with an unilaterally inflamed, red eye and complains of aching pain and blurred vision. This condition may be recurrent. Careful examination will show ocular congestion, which is predominantly concentric to the limbus and has a locally diffuse deep flush, compared with the generalized superficial injection of individual blood vessels in conjunctivitis. The cornea may be slightly hazy owing to the deposition of keratitic precipitates, which can be seen with moderate magnification. The tension is usually normal or softish and the pupil often contracted. This condition must be differentiated from glaucoma, the next condition to be described.

SPONTANEOUS

1. *Angle-Blocking Acute Congestive Glaucoma*

Early diagnosis and prompt treatment are vital for the restoration of normal vision. The patient often presents with the same symptomatology as in iridocyclitis. Direct questioning may show the occurrence of 'rainbow rings' or 'haloes' similar to those seen around electric globes at night, and the loss of vision is usually more marked in this condition. A past history of subacute attacks is often obtainable and nausea and vomiting may occur. The ciliary flush, hazy cornea, dilated pupil (often) and raised tension are diagnostic. Administer 500 mg. of 'diamox' orally, without delay and then 250 mg. 6-hourly. Repeated instillations of eserine 1%, in the eye, may relieve the condition completely. Specialist assistance is very necessary. The use of atropine in cases which have been thought to be iridocyclitis and in fact were glaucoma, has led to many cases of needless blindness, emphasizing that a correct diagnosis is essential. If not certain, it is wise only to use diamox and topical steroid until assistance is obtained.

2. *Spontaneous Loss of Vision (Painless)*

(a) *Vascular occlusion,* particularly if arterial, requires urgent treatment within hours, for any chance of recovery.

(b) *Hysteria* is a very dangerous diagnosis and is really one reached by exclusion in a case with suggestive history and negative findings and normal reflexes.

(c) *Malingering or 'compensitis'* may require careful investigation and 'malingerer-trap tests' to reach a conclusion.

(d) *Intraocular haemorrhage* and/or retinal detachment require investigation, although a mydriatic, sedation and bed rest are necessary preliminaries.

(e) *Glaucoma and iridocyclitis* may present in this category.

3. *Common Lid Lesions*

(a) *Stye; infected meibomian cyst.* The former points at the lash origin, while the latter often discharges through the meibomian orifices and is usually associated with the swelling of the cyst, away from the lid margin. Dacryocystitis must be excluded in a case with severe cellulitis near the inner canthus.

Treatment of these lid lesions, in the first instance, is the same—(*i*) a local application of heat ('hot spooning') for 15 minutes, twice daily; (*ii*) introduction of antibiotic eye ointment into the lower fornix four times daily; (*iii*) administration of systemic antibiotic if necessary. Trans-conjunctival incision of a meibomian cyst is often required.

(b) *Papilloma—intra-epithelial carcinoma.* The distinction is vital and the latter must be suspected in any enlarging firm lesion of the lid, that also has a tendency to ulcerate. Surgery is very effective in these cases. *Avoid diathermy and irradiation around the lid margins, especially towards the inner canthus.*

HEADACHES

Headache is sometimes a feature of pathological conditions of the eye. Headache from other causes may erroneously be referred to the eye.

1. *Congestive conditions,* e.g. glaucoma and iridocyclitis, usually cause severe deep-seated aching around and in the eye. Corneal ulceration may cause this, as well as the sensation of a foreign body. Paranasal sinusitis may present as ocular headache.

2. *Refractive errors,* particularly in cases of presbyopia and astigmatism may result in headaches—supraorbital (owing to muscle spasm in brow) and occipital (cervical

muscle spasm)—which frequently occur in relation to close work and/or cinema going.

3. *Muscle imbalance*, with or without an error of refraction, is a far more common cause of headache. Convergence insufficiency may lower productivity and cause lid congestion and eye discomfort, before persistent headaches occur after close work.

OTHER CONDITIONS OF THE EYE

Squint

The earlier children with squint are investigated and treated, the better are the prospects for complete cosmetic and visual cure. Children do not 'grow out' of a squint and the optimum period of binocular visual development is up to the age of 3 - 4 years. In the adult, sudden ocular deviation causes diplopia, whereas in the child, psychological 'blanking-out' of the image leads to amblyopia exanopsia, which if left sufficiently long, becomes permanent. Provision of spectacles, eye muscle exercises, occlusion of the good-seeing eye and surgery are all part of the armamenterium used in successfully attacking a squint.

Nasolacrimal Obstruction

This is an ailment of babyhood, which should be dealt with surgically, if expression over the nasolacrimal sac, in association with topical antibiotics, does not clear the condition within 1 - 2 months.

Ectropion of Lower Lid

The senile type is very common and varies from eversion of the lower punctum to gross distortion of the lower lid. Early surgical treatment is indicated, and truly, the dictum may hold, that a stitch in time saves nine.

Cataract

Many patients mean removal of a pterygium when they say that they have had a cataract or 'vlies' removed. The elderly are often troubled by slowly progressive visual deterioration. Cataract is a common cause—one eye is usually more affected than the other. Occasionally the patient believes that the onset is sudden, when he inadvertently covers the better eye to discover blindness in the other. Modern methods allow a cataract to be dealt with at an early stage and usually there is no need to allow it to become 'ripe' and possibly amblyopic. Today uniocular cataract and subsequent aphakia can be satisfactorily handled by specialist treatment. It is important that the family medical advisor should encourage the patient and emphasize that cataract removal invariably results in the restoration of satisfactory vision.

REFERENCE

1. Levy, W. J. (1957): S. Afr. Med. J., **31**, 362.