ABC of Ophthalmology

P A GARDINER

CATARACTS

Senile cataract: the commonest problem

There are various types of cataract—congenital, juvenile, traumatic, toxic, and secondary. Far more common than all these put together, however, are senile cataracts.

The optical problems are broadly the same whatever the age of the patient, though management and assessment of cataracts in the elderly tend to be more straightforward.

Lens opacities impair vision

The retina depends for its stimulation on the transparency of all the structures in front of it—the vitreous, lens, cornea, and aqueous. In cataract, the lens loses its transparency, either overall or in spots or stripes that resemble the flaws in imperfect glass. Cataract is therefore internal and invisible without instruments until the lens becomes completely opaque. When it reaches this state it appears as a greyish-white pupil.

The common senile cataract, as opposed to a traumatic or inflammatory one, is always formed gradually. To the patient it seems as if he is looking through glass that is gradually frosting. Even when fully developed light can always be perceived, and shadowy movements can usually also be seen.

Natural history of senile cataracts

Senile cataract rarely occurs before the age of 55 in temperate climates in well-nourished healthy people. Given longevity mild opacification of the lens will almost inevitably occur, though not to the extent of becoming a handicap. As this is unlikely to impair a patient's activities it is best not described as a cataract.

In general, the younger the patient, the more rapidly cataract progresses, though vision often deteriorates in fits and starts. Indeed, progression is not inevitable, and nobody can foresee the rate at which opacities will increase, nor the extent to which they will develop. There is no medical treatment that will halt the decline or improve vision. Conversely, nothing will accelerate the progress.

One possible exception to this general rule is in patients with diabetes, in whom cataracts occur earlier and often progress more rapidly than normal. Observations need to be no more frequent than once every six months, unless there are special features or obvious deterioration over a shorter period.

Removing the lens: the only real treatment

In the early stages of cataract formation the refractive changes that often occur can be compensated for by glasses. Surgery to remove the lens is, however, the only real treatment for cataract. Surgery can (and should) be performed in an otherwise healthy eye as soon as visual handicap is serious.

Patients' needs differ and surgeons' approaches vary, but in nearly everyone the lens can be extracted safely, whatever its state. The operation may be performed under local or general anaesthesia, and no more than a day or two of bedrest afterwards is needed. Most elderly patients can be assured of a technically successful outcome.

Only among the elderly confused does the operation tend to be unsuccessful. Surgery often exacerbates the confusion, even though the practice of padding the eyes after operation is no longer so common as it used to be.

When cataracts are present in both eyes double extractions are increasingly being considered, though both lenses are rarely removed on the same day. A double extraction means the patient's visual environment is totally changed.

Many people need re-education after cataract extraction anyway, and the lack of any previous visual reference after a double operation can be a burden. On the other hand, if the second operation is not done at the same time as the first some patients find it difficult to return to the theatre and prefer discharge. Much depends on the vision in the second eye and the temperament of patient and surgeon.

Substitute lenses may cause problems

To see accurately again after the lens has been removed the eye needs a substitute lens. Ideally the replacement should go in the same position as the original lens. This is technically possible but has complications so the lens is usually provided as spectacles. Because of its position away from the eye the spectacle lens has to have more magnification than the natural one to provide an accurate focus.

If the patient's other eye still has adequate vision then it will transmit a normal-sized focused image. The brain will therefore be confronted with two clear images of the same object but of different sizes, which it cannot merge. A contact lens worn on the eye is near enough to the actual position of the natural lens to overcome this difficulty, but the elderly often cannot manipulate contact lenses.

When only one cataract is removed, the eye with the better vision being left, the operation is really done as an insurance against the better eye suddenly failing. Should it do so the other eye and its spectacle lens can immediately take over. Without this precaution the patient would be effectively blind till surgery could be performed.

Magnification and distortion after removal

The magnification produced by correctly focused spectacles is also a trouble to many when both eyes rely on spectacle lenses. People who rely predominantly on size to give clues to distance have difficulty in judging distance because of the magnification of the image produced by their spectacle lenses.

Not only the magnification causes difficulty: only the centre of a powerful spectacle lens gives a focused image, and people who were formerly able to use their peripheral field confidently become confused by the lens's distortion.

Contact lenses provide the solution to both these problems, but glasses for reading and near work are needed to supplement the contact lenses because after removal of the lens the eye cannot accommodate. If the patient does not have contact lenses but relies on spectacles then he will need two pairs—for near and for far vision—or a pair of bifocals to overcome the loss of accommodation. Appreciable changes in refraction rarely occur later than three months after cataract extraction, so a change in acuity in the elderly any time after this is probably caused by some other condition irrelevant to glasses.

The general practitioner's role

If the general practitioner is told by an optician that one of his patients has cataracts that seem to be progressing, he should follow this up by examining the patient when he next attends or by inviting him for examination. Then he can assess whether or not a hospital visit is necessary, taking account of the patient's personality and general health.

If the general practitioner measures the patient's acuity himself and it appears adequate, then repeat measurements will show clearly whether there is any deterioration and whether the patient needs referring. If patients are worried about their visual deterioration there is little problem, but they often cover up because of fear, or they may be unaware of the changes.

Surgery useless if retina unhealthy

One of the major difficulties facing ophthalmologists who see elderly people with well developed cataracts for the first time is to know whether their retina is healthy. If the retina is degenerate or unhealthy for other reasons, such as diabetes, surgery will provide little or no benefit. This is a good reason for expert examination in the early stages of cataract formation and a reason for referral to a medical ophthalmologist.

Most ophthalmologists need to know about any other disease or disability the patient may be suffering from and any drugs he is taking. Patients will often deny having any constitutional disease, and about half the elderly patients who deny any illness forget that they are having preventive treatment of some sort.

The information that the general practitioner can provide on the patient's general health may therefore be an invaluable aid to diagnosis and to choosing the right form of treatment.

Photographs of mature cataract, lens opacities, removal of a lens, and retinopathy are reproduced by permission of the Institute of Ophthalmology.