Enucleation of the Eyeball

ENUCLEATION OF THE EYEBALL UNDER LOCAL ANÆSTHESIA.

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About a year ago a discussion took place in the British Medical Journal on the question of anaesthesia for eye operations. At that time I pointed out that local anaesthesia is gradually supplanting general anaesthesia in regard to certain ophthalmic operations which have hitherto been almost solely performed under a general anaesthetic.*

In certain cases cocaine drops, as ordinarily used, fail to produce adequate anaesthesia, which can, however, be obtained by means of injections, either subconjunctival, post-ocular, or subcutaneous, or, if necessary, by a combination of these methods. A very small residue remains, consisting of a few cases in which conditions such as intra-orbital tumour or cellulitis contra-indicate the passing of a needle to the back of the orbit, and those in which youth, old age, extreme nervousness, or insanity compel resource to a general anaesthetic. In the latter class of case it is not so much the patient's tissues as the patient himself who must be anaesthetised. Thus the true function of general anaesthesia in ophthalmic surgery is the production of a passive patient: if the subject can be trusted to exercise the necessary self-control, the actual anaesthesia is practically always more satisfactorily obtained by local measures.

It is not my purpose at the present time to enter into the general question of the use of local anaesthesia in all of the ophthalmic operations where anaesthesia cannot be obtained by drops, but merely to refer shortly to enucleation of the eyeball. On the Continent both enucleation and evisceration have been widely done in this way for some years, and more recently this method has found favour in America. In this country, however, nothing appears to have been published on the subject as yet, although the method has been successfully used by several operators.

In a series of twenty-seven enucleations under local anaesthesia I have obtained completely satisfactory results. The anaesthesia was perfect in 21 cases (78 per cent.); nearly perfect in 3 cases.

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(11 per cent.); and unsatisfactory in 3. It was never necessary to resort to a general anaesthetic, the three unsatisfactory cases being so classed, not because the pain was unbearable by the patient, but because the result was definitely disappointing to myself.

**Technique.**—An ordinary hypodermic syringe with a fine and sharp needle is required, and also a larger syringe, holding about 5 c.c., with a fine needle about 4 cm. long. The needles should be very sharp and smooth so that they glide into the tissues with the least pressure. Two solutions were used:—

1. Novocain . . grs. viij. 2. Novocain . . grs. iv.
Cocaine hydrochlor. grs. ij. Cocaine hydrochlor. gr. ½.
Sod. chlor. . . grs. ij. Sod. chlor . . grs. ij.
Pot. sulphate . . gr. iss. Pot. sulphate . . gr. j.
Adrenalin (1-1000) m vij. Adrenalin (1-1000) m v.
Aq. dist. ad. . . ½j. Aq. dist. ad. . . ½j.

A few drops of a 4 or 5 per cent. solution of cocaine are instilled into the conjunctival sac at intervals of three or four minutes, or little pledgets of cotton-wool soaked in the solution may be placed beneath the lids. When the conjunctiva is anaesthetised four subconjunctival injections are made over the insertions of the recti muscles, using the small syringe and about 0·5 c.c. of the strong solution for each injection. Then, with the large syringe and long needle, deep injections are made at the outer and inner sides of the eyeball, using altogether from 3 to 5 c.c. of the weak solution. The injection is commenced as soon as the needle point is beneath the conjunctiva and is slowly continued as the needle is gradually pushed on until the periosteum near the apex of the orbit is touched. Here the needle is slightly withdrawn and a few more drops injected so as to make a little pool of solution in the back of the orbit. In about two minutes the operation may be commenced. This little interval is occupied by the final completion of the arrangements for the operation, so that no time is really lost in waiting.

In the six cases in which perfect anaesthesia was not obtained there were experimental variations or accidental omissions in the technique which I am confident were responsible for the unsatisfactory results. If the method is properly carried out there should never be a failure. Acute congestion or inflammation of the eyeball was not found to prevent the attainment of complete anaesthesia. This agrees with the observations of American and German writers.

The advantages of this method are obvious. The patient is
spared the inconvenience and disagreeableness of the usual preparation for a general anaesthetic as well as the subsequent nausea and discomfort. No assistant is required at the operation, and all the worries which may occur, and which need not here be enumerated, when the course of general anaesthesia does not run smoothly, are escaped. The risk of damage to the patient's good eye either by accidental drops of anaesthetic or by the assaults of those who practise "testing the corneal reflex" is obviated, and the possibility, however remote, of such a calamity as its removal is totally avoided. Lastly, time is saved, and I have found that this method is much preferred by the nursing staff on account of its convenience. The patient may go home the same day if his domestic arrangements are suitable and medical attendance available if required.

There are few contra-indications. Patients who cannot control themselves on account of extreme youth (my youngest was a boy of nine who did not murmur), old age, nervousness, etc., have been already referred to. Cases of purulent conjunctivitis and perforated panophthalmitis are considered by some writers on theoretical grounds to contra-indicate the use of the long needle in view of the danger of infecting the deep orbital tissues. Severe mangling of the eyeball due to injury is also mentioned under this heading. As a post-operative complication slight vomiting has occasionally been noted, but did not occur in any of my cases. There remains the sentimental objection. It is supposed that a peculiar feeling of horror and repugnance attaches to the removal of an eye, and that patients who must suffer this mutilation would very much prefer to be quite unconscious during the operation. Some writers have expressed themselves strongly on this point, but it is a striking fact that such views appear to be held practically only by those who have not used this method themselves and are not found in the reports of surgeons who have tried it. In my cases no such shrinking or aversion appeared to be present either in men or women; in fact, most patients seem to be relieved when they know they will not require a general anaesthetic. That other surgeons who try this method continue to use it is the strongest evidence in its favour.

My best thanks are due to Dr. J. V. Paterson, who handed over to me a considerable number of the cases.