

## INTRA-OCULAR OPERATIONS IN EGYPT\*

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THE handling of intra-ocular operations in Egypt differs from that in Europe and the Western countries because of the frequent infection of patients with trachoma, which leads to the following complications:

- (i) scarring of the lids (trichiasis and entropion), conjunctiva, limbus, and cornea (trachomatous keratitis);
- (ii) affections of the limbus;
- (iii) corneal scarring by nebulae and leucoma.

The last-named may also be due to purulent ophthalmia, which is more prevalent in Eastern countries (Egypt, Palestine, Syria, India, etc.). In Egypt many patients are also affected by cataract, glaucoma with sunken globes, narrow palpebral fissures, and narrow or obliterated fornices. The sphincter iridis in brown and black eyes is stronger than that in green or blue eyes, and the extra-ocular muscles are also stronger, so that "squeezers" during operations are more often found in the East, and the pupil sometimes does not attain full or even half dilatation, even under strong mydriatics.

Trachoma, which affects about 95 per cent. of the population in Egypt, is mainly responsible for these complications, but gonococcal infection, and Koch-Weeks, Morax-Axenfeld, pneumococcal, and other bacterial infections cause many complications in secondary cataract. In the summer the majority of hospital out-patients (46 per cent.) attend on account of gonococcal infection, and 23 per cent. on account of Koch-Weeks and Morax-Axenfeld infection. These provoke such complications as perforated ulcers, nebulae, and glaucoma with secondary cataract.

In 1950, I visited a number of hospitals in Paris, and there happened to see a smear taken from a small child who was being treated for conjunctivitis. When I asked the laboratory assistant about the percentage of cases affected with gonococcal and Koch-Weeks ophthalmia or other micro-organisms, she replied that she did not expect to see a single case infected with gonorrhoea during the whole year. The child in question was suffering from a mild pneumococcal infection, and the assistant added that these were also very few.

In Egypt, gonococcal infection is prevalent throughout the whole year and becomes epidemic from June to November (MacCallan, 1916). In 1922 certain cases of diphtheritic conjunctivitis (Girgis, 1923) were complicated with gangrene of the orbit leading to the death of the patient, or to nebulae and leucoma

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of the cornea. The affection of the cornea by pannus in trachoma is manifested by the extension on to the cornea of blood vessels, and the affection of the limbus is seen in scarring of the pits known as Herbert pits. The blood vessels derive from the conjunctival vessels and introduce themselves between the corneal epithelium and Bowman's membrane; these pannus vessels must be distinguished from those due to the healing of corneal ulcers or to interstitial keratitis. In some cases of trachoma, Bowman's membrane becomes destroyed here and there, and the cellular infiltration gains access to the stroma of the cornea, where it gives rise to permanent changes in its transparency and curvature. Other results of pannus are weakening of the corneal stroma and bulging. Pannus leads to a form of degeneration of the conjunctiva in which the epithelium becomes thickened by the swelling and proliferation of the cells. This condition is most likely caused by colloid degeneration, which makes the conjunctiva friable, so that the operations of fixing the globe and making a good conjunctival flap, and corneal and corneo-scleral section, become more difficult. In badly affected cases of trachoma of the bulbar conjunctiva, the fornix may be contracted and shrunk.

### Anaesthesia

These complications make it necessary to have the glaucoma and cataract cases well hypotonized and completely quiet so that they do not squeeze and interfere with the operation. Prof. Barraquer of Barcelona uses curare in intra-ocular operations to keep the eye quiet and relaxed, or, to use his expression, "with the vitreous asleep". The nature and use of curare have recently been described by Agarwal and Mathur (1952), but as this drug is rather dangerous I have been searching for something to take its place. During a systematic investigation\* of the pharmacological properties of  $\alpha$ -substituted glycerol ethers, it was found that some of these compounds produced muscular relaxation and paralysis. Administration of small quantities subcutaneously to laboratory animals caused tranquilization, muscular relaxation, and a sleep-like condition from which they could afterwards be aroused. Of the compounds examined,  $\alpha$ :  $\beta$ .dihydroxy- $\gamma$ -(2-methylphenoxy)-propane, subsequently named "Myanesin", was found to be the most potent and also to possess the widest margin between the lethal and therapeutic doses.

I therefore tried "Myanesin" in my private and hospital practice. I have had good results in glaucoma and cataract, and even in simple iridectomy after adherent leucoma, with or without tension, a condition which in Egypt rather frequently follows purulent ophthalmia, and is mostly of gonococcal origin: I have used "Myanesin" in about seventy such cases of adherent leucoma without anaesthesia, and with no complications even in young patients, and I have also tried it in combination with akinesia in cataract and glaucoma.

One tablespoonful of the "Myanesin" elixir was administered 2 hours

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\*Carried out in the Research Laboratories of British Drug Houses Ltd.

before the operation; this was followed by another dose 30 min. before the operation. This dose was used whether the eye became tensed or not, and in fact, I found it was better to use it in cases with tension as the tension then became lowered; after 30 min. the eye muscles were relaxed and hypotony of the eye was seen, the vitreous was "asleep" and the operation could be carried out with safety. Recently I have given a larger dose of the elixer: one tablespoonful 2 hours before, another dose 1 hour before, and a third 30 min. before the operation.

In cases of glaucoma with high pressure, the tension is lowered before the operation and complications are lessened or abolished. Prof. Barraquer uses curare in all intra-ocular operations for the purpose of keeping the vitreous "asleep", but in my opinion "Myanesin" elixer may very well replace curare, since it is not so dangerous in use. A colleague who saw Prof. Barraquer using curare, and wanted to use it in Egypt but was afraid of possible complications, is now also using "Myanesin" in all his intra-ocular operations with complete satisfaction.

## REFERENCES

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