REPORT ON 104 CASES OF GLAUCOMA OPERATED UPON BY GALVANO-CAUTERY PUNCTURE*

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MY OBJECT in publishing this series of glaucoma operations is to draw attention to the galvano-cautery puncture of Preziosi (1924, 1950) in the hope that other surgeons will give it a trial. It is very similar to Elliott's trephine operation, but is even easier to perform, and takes a much shorter time.

In my report consideration is given to the result of the operation on the tension, together with the period of time each case has been under observation following the operation.

I performed the first galvano-cautery puncture on July 27, 1950, and since that date all cases of glaucoma of whatever type admitted under my care at the Bath Eye Infirmary for operation have had a galvano-cautery puncture.

In all, 121 galvano-cautery punctures have been performed on 104 eyes—100 by myself, and 21 by my assistant, Mr. G. Miller Neatby.

There were 54 operations in cases of chronic simple, 34 in acute or sub-acute, and 33 in secondary glaucoma.

Operation

A local anaesthetic was used on 72 occasions, and a general on 49; the local anaesthetic consists of three instillations of 4 per cent. cocaine hydrochloride at 5-min. intervals, and a subconjunctival injection of 2 per cent. procaine, with or without adrenaline, made above the cornea. This injection makes the operation quite painless and also easier to perform, as the conjunctiva is raised down to the corneo-scleral margin.

The operation, slightly modified from Preziosi's original operation, as performed in my clinic is as follows:

A large conjunctival flap, as in the trephine operation, is dissected down to the limbus with conjunctival scissors—the conjunctiva being held with a double No. 1 silk suture. The flap should extend from about 10 to 2 o'clock, so enabling the conjunctiva to be held well down over the cornea out of the way of the cautery. The ordinary galvano-cautery at red heat is passed through the limbus into the angle of the anterior chamber by one or more touches until aqueous escapes, when the cautery is withdrawn, the current switch being released at the same time. The aqueous usually escapes slowly. The puncture should be large enough for an iris repositor to pass easily into the anterior chamber. If not, the puncture is enlarged with the cautery. The iris is usually burnt.

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Should this not occur and the iris prolapse into the puncture hole, it should be touched with the cautery. I prefer the iris to be burnt at the time of the operation, as this prevents prolapse at a later date, as occurred in one case several days after the operation. This prolapse gradually enlarged, and it was necessary to dissect up the conjunctiva and touch the iris with the cautery. Apart from the iris there is no possibility of damage to the underlying structures, as the aqueous cools the cautery. The conjunctival incision is then closed, drops of atropine are instilled, and a pad and bandage applied. One of the antibiotic drops or ointments can also be instilled if considered necessary. The after care is the same as in the trephine operation.

Results

In assessing these results it should be remembered that the cases were not selected, but included all cases admitted under my care for operation.

The post-operative intra-ocular pressure, unless obviously low, was estimated by a Schiötz tonometer, 25 mm. Hg or below being taken as normal.

I think the necessity to repeat some of the operations in the chronic simple, acute, sub-acute cases was due either to making too small a puncture or to entering the sclera behind the limbus. In the latter case the long tunnel formed probably tended to close more easily than a short one.

Chronic Simple Glaucoma.—54 operations were performed on 49 eyes, the patients' ages ranging from 36 to 84 years. The length of time that has elapsed since the operation varies from 2 months to 4 years 11 months (average 2 years).

Five of the cases required two operations.

Of the successful cases (93·87 per cent.), four had no obvious bleb but had normal tension.

There were three failures. One of these will require a further galvano-cautery puncture. The second drained well after an iridectomy was performed. The third case had refused operation 2 years previously, and the operation had to be performed after a sudden rise in tension; there was no perception of light, and 1 year and 7 months later the operation was repeated, but unfortunately the patient died a few days later.

Acute and Sub-acute Glaucoma.—34 operations were performed on thirty eyes, the patients' ages ranging from 45 to 81 years. The length of time that has elapsed since the operation varies from 2 months to 5 years (average 2 years 2 months).

Four of the cases required two operations.

Of the successful cases (93·3 per cent.), six had no obvious bleb but had normal tension.

There were two failures. One was not seen until 2 weeks, and the other until 6 weeks after the onset of the acute attacks. Neither had perception of light.

Secondary Glaucoma.—33 operations were performed on twenty-five eyes, the patients' ages ranging from 15 to 87 years. The length of time that has

elapsed since the operation varies from 1 year 2 months to 4 years 5 months (average 3 years 7 months).

There were ten cases of haemorrhagic glaucoma; of these four had two operations. Only two successes were recorded, one having no obvious bleb. The tension of these two cases has been normal for 1 year 7 months and 1 year 9 months respectively.

Five out of six cases secondary to uveitis were successful, four having no obvious bleb. One of these, a case of sympathetic ophthalmitis, had three operations. Another of the successful cases also had subluxation of the lens. The one failure eventually settled down on local treatment and the tension has remained normal for 8 months since treatment was discontinued.

Two cases due to dislocation, and one to subluxation of the lens, were failures; the tension of the latter remains normal on pilocarpine.

Of six cases secondary to cataract, only two were successful, and these had no obvious blebs. Of the four failures, one died, one had the eye removed, a third (who had three operations) had normal tension after the lens was extracted, and the fourth failure was a woman aged 77 with hyperpiesis.

Summary

A short report on 104 cases of glaucoma operated upon by galvanocautery puncture has been given.

Although the number in this series is not large, and it would be unwise to draw serious conclusions, this operation appears to be well worth a more extensive trial.

The results in the chronic simple, acute, and sub-acute cases appear to be as successful as are obtained with most other operations. In secondary glaucoma—apart from those due to uveitis—the results are very poor.

The operation appears to have the following advantages:

- (1) The speed with which it can be performed—a very useful point if done under local anaesthesia, especially in old or ill patients.
- (2) The slow escape of the aqueous when the limbus is pierced, which makes an intra-ocular haemorrhage very unlikely.
- (3) The ease with which the operation is performed.

REFERENCES

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