**NOTES ON 221 INTRA-CAPSULAR CATARACT
EXTRACTIONS PERFORMED IN THREE
WEEKS AT KHAIRPUR IN 1947**

BY

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[DURING this three weeks in 1947 there were also 172 extracapsular extractions and needling operations performed by my son, R. W. B. Holland, and myself.]

All the intracapsular extractions were done by the Smith method of expression and not extraction by any of the various forceps used, *e.g.*, Kalt, Elschnig, Arruga, Knapp, Sinclair, and Kirwan. I am perfectly aware that this method has been and is still adversely criticised. Its opponents affirm that the pressure required to rupture the zonule must be detrimental to the eye, and also that the loss of vitreous is much more frequent than in the extracapsular method or the forceps methods of extraction. Another objection brought forward is the supposedly frequent occurrence of detachment of the retina following cases in which there had been vitreous escape at the time of operation. Although our staff has performed over 30,000 intracapsular extractions since 1909, I have seen only 2 cases of detachment of the retina following the operation. We are always on the look out for this complication, and when any patient returns complaining of diminution or loss of vision we always examine the fundus carefully in the dark room.

I admit that for the beginner the Smith operation is much more difficult than either the extracapsular or the intracapsular extraction with forceps. We have had 138 visiting surgeons at our Shikarpur clinic, and I always impress on them that no one should attempt an intracapsular Smith operation until he has done at least 50 or more extracapsular extractions. Furthermore, the Smith operation should not be done if a surgeon does only about 5 or 6 cataract extractions a month. It is an operation in which it is necessary to preserve one's sense of touch by constant practice. Having had 38 years of experience I consider that as far as I am concerned the Smith operation is the best for extraction of ordinary senile cataracts, and is the least traumatic procedure to the eye of any method.

There are, however, very definite contra-indications to the Smith operation. They are: (a) Glaucomatous cataract. (b) Cataract with tension over 35 mm. mercury. (c) The big "ox eye,"

found in very plethoric individuals. In these there is a great tendency for the vitreous to be degenerate and liquid in character with consequent danger of loss. (d) Cataract in the young patient. I always do an extracapsular extraction if the patient's hair has not begun to grow grey. (e) Congenital cataracts. (f) Traumatic cataracts. (g) Complicated cataracts—with synechiae, etc. (h) All those cases in which a legitimate amount of pressure does not succeed in rupturing the zonule. Only practice will enable the operator to decide when he has exercised sufficient pressure. If the pressure is applied at the right point and directed in the right axis, only very little pressure is needed in the great majority of cases. The golden rule in this operation is to cease the pressure if the upper pole of the lens does not present in the wound at once. In such cases the operator should replace the speculum and perform an extracapsular operation. 90 per cent. of cases of vitreous escape are due to too prolonged and too great pressure. If the zonule is tough the skilled operator will realise this and be humble enough to desist. He should never make up his mind that in a certain case he is going to do a Smith operation come what may. If he does so, he will often regret his decision. By all means he may say that he will attempt a Smith extraction, but he should be prepared to abandon the attempt should the upper pole of the lens not present at once. I am often amazed at the ease with which the lens is dislocated. At times a mere touch is given on the lower pole of the lens and it "almost walks out to meet you."

My object in this article is to present in detail the results of the Smith operation in the 221 cases under review. I feel I must refer to the Barraquer suction grasp method of extraction since we have tried it in Shikarpur when some 200 cataracts were removed by this method. Our results, except for those done by Lt.-Col. Cruickshank, were not as good as those done by the Smith method, but I have seen Barraquer operating in his clinic at Barcelona, and in his hands the operation produces extremely good results.

The salient points of the Smith operation after the incision and iridectomy are as follows :—

The assistant must take complete control of both upper and lower lids. The upper lid is lifted forward by means of a blunt double hook retractor, the two limbs of which are about half an inch apart. The handle of the retractor is held between the assistant's thumb, index and middle fingers, while the ring and little fingers of the same hand are used for retracting the upper eyebrow, thus fully controlling the upper part of the orbicularis oculi. The lower lid is retracted by placing the thumb of the

other hand flat on the skin immediately below the eye and by drawing it down with the help of a sterile cotton wool swab. I have mentioned this in detail because the assistant's share in the operation is all-important. It must be remembered that the blunt hook retractor is used for lifting up the upper lid to gain access to the eye, and must not be used for pulling on the lid.

The operator now proceeds to dislocate and extract the lens. He takes the spatula in his left hand, placing the end at about 45 degrees on the sclera just below and to the left of the sclero-corneal junction between 4 and 5 o'clock. With his right hand the operator takes a blunt hook. Both hands should be supporting the patient's head, which will ensure greater steadiness and delicacy of movement on the part of the operator. The ball end of the hook is then applied and pressure exerted over the lower third of the cornea in a direction straight back towards the optic nerve, the spatula at this stage being kept quite stationary and used chiefly to steady the eyeball. If the upper pole of the lens does not appear at once in the wound, the ball end of the hook is made to pass slightly from side to side which movements generally succeed in dislocating the lens. Should legitimate pressure not succeed in dislocating the lens, the assistant releases his hold on the eyelids and the speculum is inserted and extraction is made by the extracapsular method. If the lens dislocates it should be followed up by the ball end of the hook, and the pressure on the spatula gradually reduced.

Points of interest in this series

1. *Anaesthesia.* The usual routine was 4 per cent. cocaine surface anaesthesia with facial nerve block. In addition to this, 13 cases were given a retro-bulbar injection of 1/2000 pantocaine-adrenalin. This produced a painless iridectomy, but did not seem to render the operation any easier.

General anaesthesia was given to 28 adults and to all children suffering from congenital cataract. This course was adopted in all cases where it was previously expected that the patient would have little or no self-control, and also when the lack of control was first demonstrated when the surgeon attempted to insert the speculum although local anaesthesia had been already well established. The figures for the respective types of anaesthesia were chloroform 17, pentothal 7, and intra-venous 1 per cent. avertin in saline 4. Many ophthalmic surgeons are afraid to administer chloroform for fear of vomiting and consequent expulsive haemorrhage. In my experience of several hundred such cases, I can only remember one instance of expulsive

haemorrhage occurring after chloroform anaesthesia, and I am quite certain that I have saved many eyes by giving a general anaesthetic, and thus saving the straining of a nervous patient. On looking back over an experience of many thousands of cataract extractions, I am convinced that if we have erred, it has been in not giving a general anaesthetic in a sufficient number of cases. If the patient is not "good," it is the surgeon's duty to see that he is rendered "good" by the administration of a general anaesthetic.

2. *Burst Capsule.* This occurred in 14 cases, in most of which the capsule was removed with iris forceps at the time of operation.

3. *Vitreous Loss.* This occurred in six cases. In one case akinesia was not complete, and the patient squeezed after the delivery of the lens. His loss was denoted by ++. In one case the loss was noted as +, and in the other four cases it was recorded as slight. In all except the case first described, the vision was ultimately good or very good. In four cases the vitreous was lost after delivery of the lens, and in two cases before it.

4. *Iridectomy.* There were 64 full iridectomies, 84 peripheral iridectomies, and 13 cases when no iridectomy was performed.

The iridectomy was always done before the lens extraction because the patients' powers of restraint after the delivery of the lens are obviously to a large extent exhausted and they are apt to become nervous and to squeeze. In thirteen cases no iridectomy was done, which was a safety measure, as the patient became nervous and refused to look down.

In five cases a full iridectomy was accidentally performed with the knife on making the incision, and in 2 cases a peripheral iridectomy. In all these cases the visual result was excellent.

There were 8 cases of prolapsed iris in the 84 cases of peripheral iridectomy, two in the 64 cases of complete iridectomy, and 5 in the 13 cases where there was no iridectomy performed. In this series no sclero-corneal or other suture was used, but a stitch in the upper lid is inserted before operation and attached with sticking plaster to the cheek afterwards to keep the lid down during the period of akinesia.

5. *Dressings.* The intracapsular cases are not opened until the 6th day after operation and the capsulotomies on the 3rd or 4th day. Any iris prolapse is excised or cauterised on the 9th or 10th day after operation.

6. *Selection of Cases.* If all our patients had presented themselves with uncomplicated senile cataracts, our percentage of intracapsular extractions would have been very much higher, and

our results much better. But a glance at the previous list of contra-indications to the Smith operation, coupled with the fact that we have to undertake a large number of very poor risk cases, such as those complicated by old cyclitis, iritis, trachoma, leucoma and glaucoma, will at once show why we were compelled to do so many more extracapsular extractions than we would have chosen. Also a number of cases were accepted for operation on the clear understanding that benefit might or might not result, and in any case the benefit would be only slight. However, on looking back over a period of 40 years' experience in operative ophthalmology, I find that the results of operating on apparently hopeless cases has often been better than I had dared to hope. If a patient after treatment was able to see hand movements, whereas previously he had only perception of light, it was well worth while for him to have come, since his condition was made definitely better. As an example, I remember a case of an old man, aged 85, on whom I operated a year ago. One eye had twice been injured, once by a crowbar when a very young man, and later on by the tip of a billiard cue. At the time of operation he had only perception of light. I operated, and ultimately he was not only able to find his way about quite comfortably, but could also distinguish large letters in a newspaper.

7. *Visual Results.* It is impossible to be dogmatic about these, since accurate end results in this country are impossible to obtain, because the majority of patients on whom we operate are not seen again after their stay of about 12 days in hospital until our subsequent visit to the eye camp a year later; and also because only about 5 per cent. of cases are literate, and even less than this proportion can afford an astigmatic lens where needed.

The majority leave with good vision as assessed by the rough test of counting fingers rapidly at 3 or 4 feet, increased to 20 or 30 feet with a +9 or +10 lens, and by comparing these results with those obtained by refracting and testing carefully the few literates we have, we are able to arrive at a fairly reliable estimate of the probable vision of the illiterates.

Commentary. We fully realise that this is an extremely small series of cases, and we have not included the results of 1,150 cataracts performed at Shikarpur in the six weeks immediately before our Khairpur clinic, because at Shikarpur there were six surgeons operating, several of whom were inexperienced. Therefore we feel that inclusion of their results would not lead to a fair assessment of the Smith operation.

In our clinic we use no sutures on the eye at all, neither superior rectus traction sutures, nor corneal nor corneo-scleral nor conjunctival flap sutures. We feel that the less the eye is interfered

with or traumatised, the better the results. We aim at simplicity and rapidity in our methods, which have been evolved to deal with a large number of patients in a short space of time. No patient with clinically clean eyes has any smear, culture, or other pre-operative investigation, and all are submitted to operation on the day of admission.

In this series we had no case of primary sepsis, and post-operative iritis was, practically speaking, absent. We attribute this freedom from sepsis to a double irrigation of the eye with 1/2000 solution of hydrarg. perchloride at operation coupled with the simplicity of technique and absence of meddlesome surgery.

Our vitreous loss was less than 3 per cent. in the intracapsular method, and this compares with a figure of just under 2 per cent. for our extracapsular cases at this clinic. The advantage gained for the lower vitreous loss of the capsulotomy cases is more than outweighed by the comparatively large incidence of iritis which occurs post-operatively in the extracapsular series.

We hope that this series of cases will convince a fair-minded reader that the adverse criticism which the Smith operation has received is quite undeserved. Moreover, we are convinced that the Smith operation, as outlined above, is the best operation for extraction of uncomplicated senile cataracts in the hands of the surgeon who has to deal with a large number of cases throughout the year.

AN OPHTHALMOLOGIST IN BUDAPEST AND PRAGUE*

BY

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LIKE many ophthalmological colleagues in Great Britain I received an invitation from the Hungarian Medical Trade Union to attend the Centennial Medical Week in Budapest from September 4th to 12th—but unlike them all I accepted. As a large number of British ophthalmologists will have happy memories of both ophthalmology in Budapest and of their Hungarian colleagues, a brief note of the meeting may be of interest.

The Centennial Medical Week covered the whole of medicine with ophthalmology as but one of 22 sections. The chairman of

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