A MODIFICATION OF THE USUAL METHOD OF REMOVING THE LENS IN THE EXTRACTION OF SENILE CATARACT*

BY

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Some time ago, I was told of a case in which a tumour was seen in one eye, lying over the ciliary body in the twelve o’clock position. I did not see the patient myself, but I was informed that the tumour was thought possibly to be malignant. The patient was aphakic, at least there was no lens behind the pupil. The eye was excised. On section the tumour was found to be the lens which had apparently been forced into this position at the time of an attempted extraction.

I have often wondered how it happened. I have observed that, even with a big section, the lens does not always begin to come forwards on the first pressure on the cornea below. I have watched many surgeons operate on many occasions and have seen many differences in technique but rarely have I seen the lens born without some little coaxing, as for example, being "wheeled" out of the wound with the aid of the cystotome.

Some three years ago I began to think out the mechanism of lens delivery. I came to the conclusion that the first result of placing the curette on the lower part of the cornea, was to decrease the intraocular volume. The vitreous presses the posterior, i.e. scleral lip of the wound forwards up against the cut edge of the cornea. Thus the centre of the scleral lip instead of lying in the plane of the section, comes to lie a little in front of it, to a slight extent impeding the exit of the lens. On further pressure the lens is forced out of its capsule by the vitreous behind, and comes to lie in contact with the posterior surface of the cornea. The pressure that has been sufficient to produce this effect has caused the cornea to cockle, and the wound to gape. Further pressure causes the lens to force the cornea a little further forward; at the same time the scleral ring becomes oval. This results in the posterior edge of the wound being tilted upwards into the wound, thereby making it narrower still in its antero-posterior diameter. If no iridectomy has been performed the iris which has been driven out in front of the lens, is being pinched and rubbed between the lens in front and the sclera behind. It is when the lens is in the mouth of the wound that further pressure on the lower part of the cornea sometimes fails to complete the delivery and the cystotome or other instrument is usually employed.

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Now it appeared to me that it would be greatly advantageous if the hole through which the lens was to be delivered, could be made as deep as possible in the antero-posterior direction. It is in this that my modification of the usual technique consists. Having completed a large section, I lacerate the capsule with the cystotome. When operating on the right eye I take a lens scoop in my left hand and the curette in my right. The patient looks down and I press the scoop flat on the sclera at the twelve o'clock position with its edge in contact with the wound. I press it backwards towards the centre of the globe. The wound begins to gape. The vitreous forces the lens forwards against the under surface of the cornea. Further pressure makes the wound gape more and the lens begins to force the iris in front of it out of the wound. Further pressure still pulls the iris from over the front of the advancing lens, and the prolapse begins to be moulded to the shape of the edge of the lens. On further pressure the lens edge is seen to stretch the iris until it comes close up to the pupillary border. It is at this moment that for the first time I begin to apply pressure below with the curette against the cornea.

Owing to the scleral edge of the wound having been pressed backwards, the space through which the lens has to escape is bigger than the lens. Sometimes before I have had time to apply the pressure with the curette, the lens begins to be born through the pupil. At other times it appears to be caught up by the thickened pupillary border of the iris, but only the slightest pressure below is required to release it. I next follow the lens upwards slowly with the curette to the wound, maintaining the pressure on the scoop the whole time. The iris has thus never been subjected to pressure between the sclera and the lens, and has apparently lost little, if any, of its muscular tone, for sometimes by itself, and in any case, on the slightest touch with the repositor or the stream from the irrigator it immediately returns to within the eye and the pupil assumes a central position.

I have looked up the notes of cataract operations that I have done at hospital. Before I employed the method described above, in 33 straightforward simple extractions there were five cases of prolapse. In those days I often used eserin drops at the time of the operation, but I gave up using them as so many of the pupils were difficult to dilate fully thereafter. Of the last 30 cataract extractions in which the eyes were otherwise normal, in only one did the iris prolapse.

I have observed that by avoiding damage to the iris, iritis does not follow even the instillation of eserin.

I attribute this absence of prolapse to the fact that the iris is undamaged. It is not lying, therefore, toneless and flaccid in contact with the wound, waiting to be swept out of the globe on
the slightest provocation should the anterior chamber be lost. It is taut, thus allowing any escaping aqueous to run over its surface.

**SEROUS CYST OF THE ORBIT CAUSED BY AN ANILINE PENCIL**

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On account of its rarity, the following case is thought worthy of record.

John A, aged 4 years, was admitted to Moorfields Hospital in January, 1921, with the history that he had fallen down three weeks previously and broken a pencil into his eye. The resulting swelling subsided but returned eleven days after the injury.

On admission there was a small colourless healed wound in the centre of the upper lid of the left eye. The upper lid was swollen, and beneath it was palpable a fluctuating, fairly tense and well-defined swelling. It was non-pulsating, and gave no impulse on coughing. Definite proptosis was present, with pushing downwards of the globe, and there was limitation of movement in upward regard.

Whilst under observation the swelling increased in size. The cyst was incised and drained. It was found to be filled with violet coloured fluid and to contain several fragments of aniline pencil, whilst the lining tissues were deeply stained.

The sinus continued to discharge for five or six weeks, and then healed, leaving some ptosis. The child was brought for refractive error three years later (March, 1924) when the movements of the lid and eyeball were found to be normal, and there was no proptosis.

**Remarks.** I have been unable to find any record in the literature of an orbital cyst produced by a chemical irritant. Cases are, of course, occasionally met with in which the conjunctiva and cornea are deeply stained by the aniline dye; these require careful removal of the pencil particles, or a severe caustic burn is likely to result. In the last edition of Duane's translation of Fuchs' Textbook, it is recommended to instil at once a 5 to 10 per cent. solution of tannin (Vogt). I have no experience of this treatment, but a recent case in my clinic was treated with a weak solution of methylated spirit, and no coloration remained the next day, when the eye was found to show little reaction.