ALPHA-CHYMO-TRYPsin IN CATARACT EXTRACTION*

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ALPHA-CHYMO-TRYPsin has been used as an aid to lens extraction in 26 eyes of 23 patients whose ages range from one to 88 years.

Operative Technique

A von Graefe section and peripheral iridectomy were followed by the injection of 0.5 ml. alpha-chymo-trypsin through the iridectomy (half the dose nasally and half temporally). After a pause for exactly 3 minutes during which time a corneoscleral suture was placed, the anterior chamber was irrigated with saline. The lens was extracted with the erisophake with 350 mm.Hg suction. 1 per cent. pilocarpine was injected into the anterior chamber, and the wound closed with two further sutures. Air was injected into the anterior chamber.

In the first fifteen cases the Spanish alpha-chymo-trypsin was used (Chymotrase 1:5000 PEYVA). In four of these cases the solution had been preserved for a week at 4°C., and did not seem to work nearly so well as the fresh solution. Subsequently the British equivalent (Zonulysin 1:5000 Maw) was used fresh for every case.

Operative Difficulties

In 22 eyes the operation was smooth and straightforward; the lens was either loose or completely dislocated forwards and was removed with the erisophake without trouble.

In one case the lens almost delivered itself and delivery was completed with capsule forceps. In three cases the lens seemed to bulge forwards so much that it was extremely difficult to insert the erisophake into the anterior chamber. Being still behind the iris the lens could not easily be delivered with capsule forceps applied to its upper margin, and persistence with the erisophake caused further dislocation and loss of vitreous in one case. In the other two the iris was brushed up over the upper margin and capsule forceps were applied to complete the delivery.

A lower vitreous pressure would have avoided these difficulties. It is inevitable that digestion of the zonular fibres should enable the lens to assume a more spherical shape, and this is not an advantage.

Later Complications

It is difficult to know whether such complications as occurred were influenced by alpha-chymo-trypsin or would have occurred in any event.

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The first patient in the series developed a large vitreous haemorrhage on the fourth day and it was soon apparent that there was a large detachment of the retina.

Another patient had had an early Fuchs's endothelial dystrophy before the operation, and this was made much worse by operation although the extraction was quite straightforward.

In another patient striate keratitis persisted for 2 weeks, but finally cleared altogether. In one patient a number of undigested zonular fibres lay across the face of the vitreous 2 months after operation, but they interfered very little with the corrected visual acuity (6/9).

**Conclusion**

In this small number of cases my impression is that for the patient over 60 years of age the addition of alpha-chymo-trypsin is of so little advantage as to be scarcely worth the extra manipulations involved.

In younger patients, however, it becomes of increasing advantage the lower the age.

It is significant that in patients aged one year and 32 years and in several aged 50-odd years cataracts were delivered with equal ease. No deleterious effects on the ocular tissues attributable to enzymatic action were noted other than the possible effect on Fuchs's dystrophy, and the rather doubtful production of vitreous haemorrhage.