CATARACT EXTRACTION WITH THE AID OF ALPHA-CHYMO-TRYPSIN*

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SINCE the description by Barraquer in May, 1958, of the use of alpha-chymotrypsin in cataract extraction, interest in its use has been widespread. This short paper presents factual observations on 32 consecutive cases in which the substance has been used.

Operative Technique

In all cases section was made with the von Graefe knife and one to three corneoscleral sutures were inserted. Peripheral iridectomy was performed in all except two cases where the iridectomy was complete. Alpha-chymo-trypsin (A.C.T.) 1:5000 solution was injected through the iridectomy above and posterior to the iris below. After exactly 3 minutes the anterior chamber was irrigated with saline and the lens was removed by traction.

In 24 cases the mechanical erisophake† was used, and in eight the capsule forceps (Arruga). Where capsule forceps were employed the lens capsule was gripped above in the 12 o'clock position.

Results

In no case was any serious operative difficulty encountered and it seemed clear that the A.C.T. had greatly weakened the zonule. In several cases the lens appeared to be lying completely loose, but in others moderate traction was still required to achieve the rupture of the zonule. In one case the erisophake slipped off the lens but was successfully re-applied; in one case (in which the erisophake was being used) the capsule ruptured but was delivered complete and the small amount of soft lens material which remained absorbed completely. There has been no vitreous loss in any case.

The 32 patients fell into the following age groups:

Over 60 yrs	23
50 to 60 yrs	4
40 to 50 yrs	4
Under 40 yrs	1

The youngest patient in the series was aged 28 and his cataract was due to trauma. One patient had previously had an operation for glaucoma and

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† Made by Messrs. C. W. Dixey.

another had hypoparathyroidism. In the remainder of the cases the cataracts were senile or pre-senile in origin.

Post-Operative Complications

Striate Keratitis was present at the first dressing in sixteen cases, in all of which the erisophake had been used. In all but one instance the corneal changes settled rapidly. In the remaining case the striae have persisted for 8 weeks, but are gradually disappearing.

Hyphaema of over 2 mm. occurred in one case.

Secondary Glaucoma developed 4 weeks post-operatively in one patient. The glaucoma is at present controlled after cyclodialysis and cyclodiathermy.

Discussion

There is no doubt that alpha-chymo-trypsin is effective in reducing the strength of the zonule and it does not appear to damage other intra-ocular structures. The results in this small series suggest that the erisophake, rather than the A.C.T., was responsible for the occurrence of striate keratitis. As capsule forceps appear to be just as effective it seems logical to use them in preference to the erisophake. Of the other complications mentioned, it seems improbable that the hyphaema was connected with the use of A.C.T. The secondary glaucoma occurred in a patient whose anterior chamber was very slow to reform and in whom peripheral anterior synechiae occurred; this patient also had moderate striate keratitis which almost certainly predisposed to the formation of the adhesions between iris and corneal periphery.

Summary

- (1) Alpha-chymo-trypsin has been used in 32 consecutive cataract extractions.
- (2) No serious complications occurred during operation.
- (3) Striate keratitis is very liable to occur when the erisophake is used, but does not appear to follow the use of capsule forceps.
- (4) One case of aphakic glaucoma occurred post-operatively.

The alpha-chymo-trypsin used was the Chymotrase (Quimotrase) brand, supplied by PEVYA Laboratories, Barcelona, Spain.

REFERENCE

- BARRAQUER, J. (1958). Film shown at a meeting of the Société française d'ophtalmologie in Paris in May, 1958.