

## ORAL GLYCEROL IN CATARACT SURGERY\*†

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VITREOUS loss in cataract surgery is a serious complication which may lead to blindness. Knighton (1949) reported it in 0.9 per cent. of cases, Cinotti (1952) reported 1.57 per cent. in the same series of patients, Townes, Moran, and Pfingst (1952) 6.5 per cent., Heath (1961) 7 per cent. in a series extending over 5 years, and Awasthi and Raizada (1965) 6 per cent.

### Present Investigations

**Material.**—This study concerns 176 extractions of senile cataract at Sarojini Naidu Hospital, Agra.

**Method.**—The patients were admitted to hospital 2 days before the operation. Nembutal 1 gr. was given one night before and again one hour before the operation. The series was divided into two random groups of 88 cases each. Group 1 received 6 oz. of a 50 per cent. solution of glycerol in normal saline flavoured with orange or lemon to make it more palatable. This solution was prepared the night before the operation and kept in the refrigerator. Group 2 received 6 oz. plain water. The operating surgeon was unaware of the group in which each patient had been placed.

The same operative technique was used for every eye. Three pre-placed corneo-scleral sutures were used, and the approach was by peripheral iridectomy. Air was injected into the anterior chamber after the operation and 50,000 units crystalline penicillin were injected subconjunctivally.

**Observations.**—In every eye intracapsular extraction was attempted by forceps or by Smith's technique. This was successful in 82 of the 88 cases in which glycerol was used (92 per cent.) and in 74 of the 88 cases in which glycerol was not used (74 per cent.) (Table I).

TABLE I  
TYPE OF EXTRACTION

| Group           | No. of Eyes | Extraction    |           |               |           |
|-----------------|-------------|---------------|-----------|---------------|-----------|
|                 |             | Intracapsular |           | Extracapsular |           |
|                 |             | No.           | Per Cent. | No.           | Per Cent. |
| (1) Glycerol    | 88          | 82            | 92        | 6             | 8         |
| (2) No Glycerol | 88          | 74            | 84        | 14            | 16        |

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It was found that eyes treated with glycerol could stand more pressure on the globe in extracting the lens than the others. Extracapsular extraction was successfully performed in all cases in which the intracapsular method failed.

In some patients the ocular tension was so low that it was difficult to complete the incision, and greater force had to be applied in delivering the lens.

Table II shows that loss of vitreous was five times more frequent in the eyes not treated with glycerol, but that the incidence of post-operative vomiting was much less. However, the vomiting was controlled by intramuscular trifluoperazine hydrochloride (10 mm. Hg) and no complications resulted from it.

TABLE II  
INCIDENCE OF COMPLICATIONS

| Group           | During Operation |               |           | After Operation |                     |          |
|-----------------|------------------|---------------|-----------|-----------------|---------------------|----------|
|                 | Iris in Section  | Vitreous Loss |           | Hypaema         | Other Complications | Vomiting |
|                 |                  | No.           | Per Cent. |                 |                     |          |
| (1) Glycerol    | 3                | 1             | 1.13      | 1               | 2                   | 6        |
| (2) No Glycerol | 2                | 5             | 5.68      | 1               | 2                   | 2        |

**Discussion**

By the end of the first hour glycerol reduces the ocular tension to such an extent that the eye becomes soft and the risk of vitreous loss is much reduced. More force can thus be applied in extracting the lens so that more intracapsular operations can be done with better cosmetic results. The drug did not interfere with post-operative healing nor were there any complications, other than nausea which was easily controlled.

Glycerol is cheap and effective, and can be used with advantage when Diamox is too costly.

**Summary**

In 88 senile cataract operations the pre-operative use of oral glycerol was followed by a reduced incidence of vitreous loss.

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