Cataract aspiration-irrigation
Modified needle-tubing-handle combination for push-pull machine

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The push-pull machine for the management of presenile cataracts was first developed and described by Phillips and Wang (1971). This reciprocating push-pull system incorporates the principle of irrigation and aspiration of congenital and traumatic cataracts in exactly equal volumes using two identical syringes with two separate input and output needles.

The push-pull machine is useful and has worked well in our hands in the management of such cases. However, we found the technique described for making the needle-tubing combination cumbersome and time-consuming, as the needle-tubing combination had to be prepared differently according to whether it was for the input or output system, and polythene tubing was unsuitable for autoclaving and necessitated different methods of sterilization.

Besides these preparatory difficulties the insertion and manoeuvring of the input and output needles in the anterior chamber by just holding the small needle shaft with the finger and thumb, is awkward and difficult.

A new needle-tubing combination is now described to overcome these difficulties; preparation of the combination is the same for both input and output systems. A handle has also been incorporated to enable easier insertion and manoeuvring.

**Needle-tubing-handle combination**

The Figure illustrates the needle-tubing-handle combination.

A disposable needle A of standard wire gauge 17 or 19 is used with the sharp end broken and blunted. The hub of the disposable needle should be of polypropylene material as this can be autoclaved. Alternatively a nondisposable needle with metallic Luer end can be used. The Luer end of this needle fits the input or output syringe and the blunt end is inserted into one end of any desired length of silastic tubing B. The silastic tubing used has an internal diameter of 1.02 mm and an external diameter of 2.16 mm (French gauge size 6.5). The advantage of using silastic tubing is that it can be autoclaved without cracking or becoming rigid or discoloured on repeated autoclaving. A metal handle C is attached to the other end of the silastic tubing. The handle C is made from a brass (or stainless steel) rod 6 mm in diameter and 5 cm long, through the whole length of which a hole is drilled. To one end of this rod, the broken and blunted shaft of a disposable needle of gauge 17 or 19 is soldered and this is then inserted into the silastic

**FIGURE** Needle-tubing-handle combination for push-pull machine
A—needle        C—handle
B—silastic tubing        D—input/output needle

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tubing. The other end of the rod is male Luer tapered to fit any gauge size (preferably no. 25 and 23 gauge for input and output needles respectively) disposable input or output needle D for insertion into the anterior chamber. The outer surface of the handle is knurled for a firmer grip and easier handling.

The needle-tubing-handle combination once prepared can be repeatedly autoclaved and used. Two such combinations are required, one for the input and the other for the output system. The incorporation of the handle makes the insertion and manoeuvring of the two separate input and output needles in the anterior chamber, for aspiration and irrigation of the soft lens matter, an easier procedure.

Summary
A modification of the needle-tubing combination for the push-pull machine used for aspiration-irrigation of congenital and traumatic cataracts, is described. The new needle-tubing-handle combination is advantageous in that the incorporated handle makes the insertion and manoeuvring in the anterior chamber easier and also the whole combination can easily be autoclaved as silastic tubing is used.

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Reference

Correction
In the December 1974 issue on p. 974, in the article by S. S. Hayreh, the two figures 7a and 7b have been transposed and printed upside down. Figs. 7c and 7d are placed correctly.
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