

Sterilizable fibre optic transilluminator

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Direct transilluminators using conventional light sources incorporated within the instrument have been largely superseded by models employing multi-core fibre optic light guidance systems (Amoils, 1968; Gibson Moore, 1969). The heating problems associated with high intensity light sources are therefore eliminated and the reduction in size of these instruments provides superior manoeuvrability. Rapid disinfection of such light guidance systems, however, presents problems (Alder, Gingell, and Mitchell, 1971).

The transilluminator described has the advantages of simplicity and light weight, and each component is separately sterilizable so that the instruments can be assembled swiftly under aseptic conditions in the operating theatre. The single-core light guide is highly flexible and sufficiently inexpensive to be disposable.

Description (Fig. 1)

The probe consists of a modified intravenous cannula (A) curved to follow the contours of the globe. The sharp tip of the cannula has been removed and a small metal

ring braized on to the extremity to provide a smooth surface for contact with the ocular coats (Fig. 2).

The luer fitting is drilled out to provide a seating for a perforated split pin screw (B). The latter when screwed down grips the light guide securely.

The light guide (C) is a Crofon* 1 mm. diameter fibre composed of a polymethyl methacrylate core surrounded by a polythene sheath. The light guide is threaded down the instrument so that the tip projects beyond the end of the instrument. After the retaining screw (B) has been tightened, the projecting Crofon fibre is shaved off flush with the metal ring by a scalpel blade.

The other end of the fibre optic light guide is connected to a standard (Hamblin) direct fibre optic ophthalmoscope light source *via* a brass reducing sleeve which also acts as a heat sink (D).

Sterilization

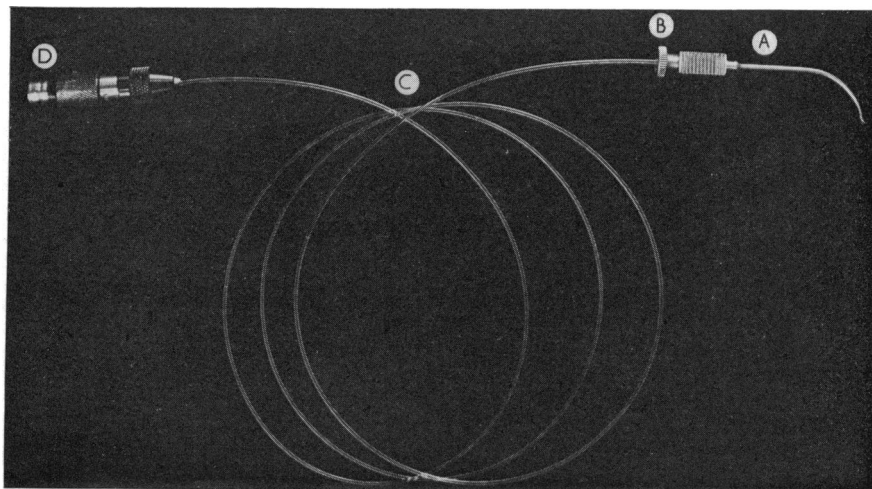
The light guide is sterilized in ethylene oxide in suitable 6 ft. lengths and prepacked for use as required. The probe is sterilized by conventional autoclaving methods.

Method of use

The instrument has been designed for use with the indirect ophthalmoscope both as a scleral indenter and a direct

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A. Curved cannula
B. Screw to hold light guide
C. Light guide
D. Connection to light source

FIG. 1 Direct transilluminator assembled for use

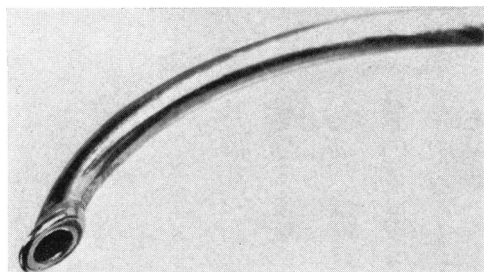


FIG. 2 *Detail of probe tip (A)*

transilluminator. The horizontal ridging on two surfaces of the cannula permits orientation of the probe tip in the dark. Fundus lesions may therefore be powerfully illuminated by either instrument.

Advantages

Because of the design of the probe only a small con-

junctival incision is required to provide access to lesions located at the posterior pole, and since this instrument can be sterilized the risk of introducing infection into the orbit is minimized.

Transillumination is of value in locating large choroidal vessels when selecting a site for draining subretinal fluid in cases of retinal detachment requiring this procedure, and the ease with which the probe may be resterilized, together with a supply of prepacked light guides, permits the instrument to be used as frequently as required.

We wish to acknowledge the aid of Mr. A. E. Christmas, late Head of the Instrument Department, Bristol United Hospitals, in making up the prototype instrument, and Hamblin Instruments Ltd. for advice and for agreeing to manufacture the probe and reducing sleeve. We also wish to thank the Medical Illustration Unit of the United Bristol Hospitals for the production of illustrations and Mrs. D. Archer for secretarial help.

References

- ALDER, V. G., GINGELL, J. C., and MITCHELL, J. P. (1971) *Brit. med. J.*, **3**, 677
 AMOILS, S. P. (1968) *Arch. Ophthalm. (Chicago)*, **80**, 371
 MOORE, J. GIBSON (1969) *Brit. J. Ophthalm.*, **53**, 711

Errata

Editorial November issue, vol. 58, p. 890, 1.19:

for 'chlorio-retinal' read 'chorio-retinal'

p. 891 1.3:

for 'Histoplasm' read 'Histoplasma'

1.20:

for 'and evidence of previous *H. capsulatum* infection' read 'and no evidence . . .'