APPLIANCES

IMPROVED CALIBRATED ELECTRODES FOR DIATHERMY OPERATIONS IN RETINAL DETACHMENT*

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THE report of a new diathermy operation for use in cases of retinal detachment with tearing of the macula lutea (Mađroszkiewicz, 1958) mentioned a set of 15-, 20-, and 25-mm. calibrated electrodes, which could be used for treating retinal holes in different positions.

The instrument has since been improved by the addition of a small projecting knob of 0.25 mm. at the corner of the "elbow" of the electrode (Fig. 1, *pr.*). This gives the elbow better support at the corneal margin; when pressure is exerted upon the globe with the electrode, the projection slightly indents the surface of the denuded sclera at the limbus. This improved instrument was demonstrated at the XXVI Congress of Polish Ophthalmologists held in Szczecin in September, 1958.

A further improvement has now been achieved by making small incisions at 5-mm. intervals on the external surface of the curved arm of the electrode (Fig. 1, *in.*), thus marking out a calibrated scale. The entire electrode is covered with a white insulating varnish (*i*), except for the end point (Fig. 1, *e*) and the thick handle (*n*). The scale, which is marked with red dots, greatly facilitates and accelerates the operation, because measurements with Indian ink and calipers are rendered superfluous.

FIG. 1.—Longitudinal section of improved non-perforating calibrated electrode, with curved arm 20 mm. long.

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Fig. 1 shows the exact dimensions of a 20-mm. calibrated electrode in which the curved arm which reaches round behind the eyeball is 20 mm. long. The length of the straight shaft (*s*) is slightly increased to 18 mm. and it is made about 1.6 mm. thick.

Similar electrodes have been made for perforating diathermy. Fig. 2 shows the longitudinal section of an electrode of this type in which the curved arm is 15 mm. long, the other dimensions being the same. At the end, instead of a plate (*e* in Fig. 1), there is a little sharp spike (*t*) which is 2 mm. long and 0.25 mm. thick.

FIG. 2.—Longitudinal section of perforating calibrated electrode, with curved arm 15 mm. long, showing spike (*t*).

This electrode is useful in dealing with perforating applications to the sclera, especially at the end of the operation, when the superficial burns have been carried out and the subretinal fluid must be evacuated. It is usually necessary to make a through puncture of the sclera and choroid, in the lower half of the globe beyond the equator, *i.e.* 14–15 mm. from the corneal margin. If the 15-mm. perforating electrode is applied to the globe with the projection (*pr*) touching the limbus, further measurement is not required. The spike (*t*) perforates the sclera in the desired position and when the instrument is removed the subretinal fluid escapes. Massage of the bulb assists the evacuation of the fluid. The operation is concluded by suturing the conjunctiva.

Because juxta-macular perforations are contraindicated, a set of 15-, 20-, and 25-mm. non-perforating electrodes with the 15- and 20-mm. perforating electrodes is sufficient for most diathermy operations for retinal detachment.

Summary

Improved calibrated electrodes for non-perforating and perforating diathermy in cases of retinal detachment are described.

REFERENCE

MAĐROSKIEWICZ, M. (1958). *Brit. J. Ophthalm.*, **42**, 739.