Filter mount system for the miniature indirect binocular ophthalmoscope

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Since the introduction of the indirect ophthalmoscope by Schepens (1947), the field of ophthalmology has witnessed an increasing sophistication in the instrument (Hovland, Elzeneiny, and Schepens, 1969; Weaver, 1970). The recently introduced miniature indirect binocular ophthalmoscope of Schultz and Crock (Crock, Galbraith, and Parel, 1969) offers a lightweight spectacle-frame instrument with a portable rechargeable battery supply. This instrument has proved to have excellent optical qualities and to give sufficient light for examination and surgery of the retina in consulting room and hospital. The value of the indirect ophthalmoscope in viewing the fundus fluorescein angiograms has been noted by Gass, Sever, Sparks, and Goren (1967). When it is used in combination with the fundus camera and contact lens slit-lamp examination, a thorough evaluation of the retinal status may be obtained. For the indirect ophthalmoscopic examination, either a cobalt blue or a Wratten 47A filter is interposed in the instrument's light beam to permit the visualization of the fluorescein pattern.

Most of the commercially available indirect ophthalmoscopes offer, either by a swinging mount or by a rotating dial, a means of selectively introducing the desired filter, but the Schultz-Crock Indirect Ophthalmoscope does not provide such a carrying system. Because of the acceptability of the Schultz-Crock instrument, a filter-carrying system has been devised and is described below.

The 30 degree insert manufactured by the Carl Zeiss Company for their fundus camera provides an excellent holder (Fig. 1). The desired Wratten gelatin filter is cut to a circular diameter to fit tightly in the diaphragm base and the carrying clips are tightened. The cone end of the diaphragm slips easily over the circular lamp mount of the indirect ophthalmoscope (Fig. 2). The diaphragm remains in position with head movements made during examination and the battery supply provides sufficient illumination for viewing the fundus and the fluorescein distribution. This system has worked well with cobalt blue and Wratten 47A filters.

FIG. 1 30° diaphragm insert with miniature binocular indirect ophthalmoscope

FIG. 2 Diaphragm insert mounted on the indirect ophthalmoscope with filter positioned in base

The fundus can be examined in red-free light by using the Wratten 58 filter. This system has worked well in conjunction with office fluorescein angiography procedures and as an adjunct to photocoagulation treatment.

Summary

A filter mount system for the recently introduced Schultz-Crock Miniature Indirect Binocular Ophthalmoscope is presented. The diaphragm mount is easily obtained and insertion of the filter is simple. This modification extends the range of usefulness of this instrument to the area of fluorescein angiogram examination of the fundus.

References

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