

RECENT ADVANCES IN OPHTHALMOLOGY

CLAUDE S. PERRY,

Department of Ophthalmology, The Ohio State University

Prior to the present war, research in the field of plastics was advancing into new fields. New varieties of plastics and new uses for them have been found. Thus in the field of ophthalmology we have parts of optical and surgical instruments being made of plastic. There is a transparent retractor of plastic, useful in the retinal detachment operation. Sets of prisms used for measuring muscle imbalance are available but have the objectional feature of being more easily scratched if subjected to hard usage. We have heard much of the prosthesis or "glass eye" made of plastic. It is true that a much better prosthesis can be made of plastic than those we have had before. A mold or pattern can be made of the socket, a plastic casting can be made from this mold which will fit that patient. It is non-breakable and can be repolished when it becomes rough, whereas a prosthesis made of glass must be replaced after a few years because it becomes discolored and rough. It has long been recognized that even the best fitted prosthesis has its limitations. Since it fits by contact under the lids, its motion is limited. This is true particularly in the horizontal plane where its movement is limited by the bony orbit. The correction of this obvious defect has baffled eye surgeons for a long time. At present there are several operations being developed to overcome this objection. One such operation may be briefly described as follows: The enucleated eye is replaced by a complete plastic eye, the posterior half of which is covered with a tantalum wire mesh. Small tantalum plates are sutured to the four recti muscles. These plates are then properly attached to the prosthesis. Such technique permits complete freedom of motion of the prosthesis. As is usually the case certain technical improvements must still be made before this operation can replace the older method. Contact lenses are now being made of plastic, therefore less dangerous to the wearer than those made of glass. Contact lenses of glass are not new, having been originally devised for persons suffering from conical cornea. It might be mentioned here that contact lenses have very definite indications for their use and in no sense are to be regarded as a substitute for glasses.

The coating of optical lenses with a substance to eliminate annoying reflections is making progress. When first developed it was discovered that the coating could be wiped or washed off when cleaning the lens. It is believed that this objectionable feature is not yet ready for the market in any quantity.

A simple device was produced to assist in localizing intraocular foreign bodies. It consisted of a plastic contact lens with four equidistant metallic dots in it so arranged that these dots were very close to, or in contact with the limbus. Military hospitals where the removal of intraocular foreign bodies was being done found that the information obtained by this localizer was often very valuable.

Improvement has been made in the operation for transplantation of the cornea. More eye surgeons are performing the operation, and as instruments become available we can expect this relatively new surgical procedure to become more common. An eye bank has been established in New York City to which donors eyes may be sent. It has been found that the cornea of such eyes sent to the eye bank are suitable for transplantation 36 to 48 hours after leaving the donor. Enucleated eyes with normal cornea should not be wasted. There is a waiting list of those who need them.

Experience gained in the war has given us a much better understanding of the indications, limitations and use of penicillin. Detailed information is now available in current literature. One example may be cited. In Ohio it has halved the taxpayers cost for the care of gonorrhoeal conjunctivitis in the indigent, and concurrently visual loss from the same cause has been greatly reduced.