Editorial

TO EGAS MONIZ

Scientific progress, whether it be advancement in our fundamental knowledge or improvement in the diagnosis and treatment of disease, is often dependent upon the introduction and development of new techniques. Mankind, its scientists and its physicians, have often in the past been deeply in the debt of some original, pioneering mind which by the invention of new methods has paved the way for great progress. In the fields of neurology and psychiatry we are particularly beholden to one of the most challenging, independent and resourceful physicians of our day—Egas Moniz of Lisbon. Through the introduction of Cerebral Angiography in 1927 and its subsequent development in collaboration with Almeida Lima he opened to us a new avenue of approach to a more thorough comprehension of the cerebral circulation and to the study and treatment of various intracranial disorders, particularly neoplasms, aneurysms and other congenital vascular anomalies. Since this innovation by Egas Moniz there have been several valuable modifications which have enhanced the usefulness of cerebral angiography. Quite independently Loman and Meyerson in Boston in 1936 and Kentaro Shimidzu in Japan in 1937 advocated the percutaneous puncture of the carotid artery instead of the open operation.

Visualization of the carotid circulation supplies information about only a part of the vascular supply of the brain. In order that the vertebral, the basilar and the posterior cerebral arteries might be visualized Egas Moniz advocated the retrograde filling of the vertebral artery through the open wound. However, this was never a wholly satisfactory procedure. Several operators had accidently punctured the vertebral artery when seeking for the carotid by the percutaneous method. Taking advantage of these experiences several surgeons began to puncture the vertebral artery deliberately. Takahashi, a pupil of Shimidzu, developed a rather difficult percutaneous method in 1940 which did not meet with widespread acceptance. The simple direct method, now in common use, of puncturing the vertebral artery as it passes from the foramen in the transverse process of one cervical vertebra to the next was discovered by Lindgren in Sweden in 1947. Unfortunately the knowledge of Lindgren’s valuable discovery was not widely disseminated. In 1948 this same method was independently developed and thoroughly publicized by Sugar, Holden and Powell of the University of Illinois in Chicago.

The most recent advance in cerebral angiography has been the development of several different methods for the taking of serial pictures, demonstrating the various degrees of filling and visualization of the arterial, capillary and venous systems of the brain. None of these methods has as yet been thoroughly perfected although several show great promise. There
is undoubtedly much advantage in being able to study the various parts of the cerebral circulation, as compared with simple cerebral arteriography.

These improvements in the technique of cerebral angiography have greatly increased its use and enhanced its usefulness. Many problems, however, still remain to be solved. Chief of these is the development of a perfect contrast medium which will be readily available, reasonable in cost, provide excellent visualization, be non-irritating to the vascular walls and generally innocuous.

With increasing experience, knowledge as to the normal and abnormal angiographic patterns and their significance is steadily being accumulated and published. The hope that by angiography it might be possible to determine the nature of various intracranial neoplasms has been only partially realized but its complete achievement is still a goal to be sought.

Cerebral angiography has made it possible to plan and execute suitable treatment for various intracranial vascular lesions. However, only a beginning has been made in this therapeutic field. These lesions still remain serious and carry with them a high mortality and morbidity. Certainly it is reasonable to believe that with further study of the cerebral circulation, increased utilization of cerebral angiography and continued clinical experience with lesions of this type our ability to deal with them successfully will steadily improve.

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