INTRACRANIAL ANEURYSMS

I. SOME CLINICAL OBSERVATIONS CONCERNING THEIR DEVELOPMENT*

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The fact that most aneurysms of the cerebral circulation are congenital in origin is general knowledge. Much evidence has been examined and inference and analogy have been drawn concerning the development of these lesions.1,3,6,7,8,9,10,16 It seems to be generally agreed that in all likelihood defects within the muscular and elastic coats at angles of bifurcation of vessels eventually succumb to long-time persistent stress resulting in the formation of saccular dilatations.6,7,8,9,10,16

Less attention has been shown to the mechanism of development of the primitive cerebral vascular network offering through the complexity of its genesis a more simple and logical explanation for these anomalies.1,17 Some writers, having noticed the presence of anomalous vessels, have by-passed the significance of these structures; others, however, have emphasized their importance.1,5,6,9,11,12,14

The following cases illustrate the point in question:

Case 1. F. M., 24-year-old white male. The aneurysm arose from the mid-portion of the left posterior inferior cerebellar artery and had blown out into the left cerebellar lobe. There were multiple anomalies of the surface and pial vessels (Fig. 1).

Fig. 1. Case 1. Anomalous vascular stalk of aneurysm arising from left posterior inferior cerebellar artery. Multiple anomalous dilatations of pial vessels.

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Case 2. M. Z., 40-year-old white female. The aneurysm was an elongated tortuous sac arising from the right anterior cerebral artery midway between the bifurcation and the anterior communicating artery, projecting forward and medially across the dorsum of the optic chiasm (Figs. 2 and 3).

Case 3. F. B., 57-year-old white male. The aneurysm was situated within the sella turcica, elevating the chiasm and optic nerves to an angle of approximately 30°. The chiasm was almost completely bisected. The aneurysm represented a balloon-like termination of a tortuous anomalous vascular stalk arising from the medial wall of the left internal carotid artery beneath the left optic nerve (Figs. 4 and 5).

Case 4. G. R., 31-year-old white male. The aneurysm was a doubly lobulated structure arising from the mid-portion of the right anterior cerebral artery between the bifurcation and the anterior communicating artery. Hemorrhage had occurred from the smaller and more mesial of the two sacs to the left. Two anomalous vessels arose from the larger sac, one coursing superiorly with the right anterior cerebral artery and the other traversing the dorsum of the chiasm and dura of the floor of frontal fossa just to the right of the midline (Figs. 6, 7 and 8).

Case 5. C. S., 32-year-old white female. The aneurysm was situated below the