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LIGATION OF THE GREAT VESSELS OF THE NECK*

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of Philadelphia, Pa.

The latter years of the eighteenth century and the beginning years of the nineteenth witnessed the first ligations of the carotid arteries of the neck. It is for approximately 150 years, therefore, that these ligations have been practiced.

Probably every surgeon who practiced in the nineteenth century, and almost certainly every living surgeon today has performed or has had personal contact with the surgery of these vessels. In spite of such widespread knowledge and tremendous total experience, the question of whether to ligate the common carotid or internal carotid primarily when a choice is presented remains a source of controversy whenever mentioned. Such controversy has its origin, of course, in the cerebral complications which so frequently follow the obliteration of either one of the main vessels.

At the moment of ligation or immediately thereafter, the patient may experience a sense of fainting combined with nausea and vomiting, cold sweat, ringing in the ears, and darkening of the fields of vision. These symptoms may be of a few seconds' duration only, or may be associated with homolateral headache, aphasia, partial or complete contralateral hemiplegia with anæsthesia and paræsthesia, and persist for days or weeks. The majority of these symptoms have a tendency toward improvement and usually completely disappear after a longer or shorter period of time. Too numerous are the patients, however, who develop permanent hemiplegia, with or without aphasia, blindness and mental deterioration. Too frequent also are the cases where the above symptoms precede by a few minutes only a deepening and slowing of respiration, generalized convulsions and death. If none of these signs or symptoms complicates the operation itself, the surgeon must still face an uncertain period of from several days to a week or ten days during which the signs of severe cerebral disturbance may suddenly occur, with hemiplegia or with death closing the scene.

Five theories are championed in interpretation of these cerebral disturbances.

First, anæmia due to failure of collateral circulation chiefly because of anomalies of the circle of Willis. Second, thrombosis and embolism. Third,

* 1933 Annual oration read before The Philadelphia Academy of Surgery.

† The author wishes to acknowledge the assistance of Dr. Paul Loudenslager, in the preparation of the statistical matter contained in this paper.