NEW INSTRUMENT TO OBLITERATE INTRACRANIAL SACCULAR ANEURYSMS*

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Aneurysm of the circle of Willis can only on occasion be ligated with an ordinary Cushing silver clip, chiefly in those instances in which the aneurysm has a small neck, which is rare. For the most part, the aneurysms of the circle of Willis have either a short thick stalk or, as so often is the case with the anterior communicating artery, no neck at all. For the wide-base aneurysms, thread ligatures have been used (Sjöqvist, 1948). Many aneurysms that hitherto could not be ligated have, through this expediency, become operable. An especially long silver clip, which, after applica-

![Fig. 1. Instrument (see text for description).](image)

tion, can be removed when necessary has been designed by Olivecrona. A wide lead disc for the obliteration of intracranial aneurysm was demonstrated by Scoville at the International Neurological Congress in Lisbon in 1953.

Since aneurysms of the circle of Willis most frequently bleed from the top, it would appear most important that that portion of the aneurysm be isolated from the general circulation or occluded. For occlusion of wide-stalked aneurysms in those instances in which a ligature of the neck can not, for some reason, be applied, we have constructed the instrument described below. The aneurysm is flattened between the two sides of a triangular silver plate.

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DESCRIPTION OF INSTRUMENT

We decided to construct triangular silver plates of varying sizes, which, when placed side by side, would together provide the size required in every case (Fig. 1). These plates have at the base a breadth of 3, 4 and 5 mm. respectively, but measure only 2 mm. at the top. Their edges are rounded so that they will not perforate or tear the wall of the aneurysm. Furthermore, the plates are curved, rather than bent at right angles, thus permitting them to clasp the top of the aneurysm completely. Since the aneurysm may be expected to soften during hypotensive anesthesia, it can be anticipated that the plates will cover the entire aneurysm.

The plates are supplied at both sides with a small punctate elevation corresponding to a hollow in the jaw of the forceps, which facilitates the insertion of the plate into the jaw of the forceps, steadies the plate, and minimizes the risk of displacement during ordinary manipulation.

Fig. 2. Suprasellar aneurysm of left carotid artery. Preoperative angiograms.

Fig. 3. Suprasellar aneurysm of left carotid artery. Postoperative angiograms.
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In order that these plates may be placed as close together as possible so that they will cover the aneurysm completely, they have been so constructed that on each side they are $\frac{1}{2}$ mm. wider than the jaw of the forceps.

The jaw of the forceps may be opened by a small rotation of the screw placed on the angle of the forceps. These forceps, moreover, differ from the usual type with respect to their rather large handle, thereby permitting a more effective compression of the silver plate. Despite this rather large size, however, the surgeon is not deprived of a good view of the operative field.

COMMENT

This instrument* has been employed in the treatment of 3 aneurysms located at (i) the supraclinoidal part of the left internal carotid artery, (ii) the left anterior cerebral artery, and (iii) the suprasellar part of the left internal carotid artery (Figs. 2 and 3). In all 3 instances the plates proved well suited to their purpose. In one case especially, in which a rupture of the top of an aneurysm of the left anterior cerebral artery was encountered, and in which the application of an ordinary silver clip on the anterior cerebral artery did not arrest hemorrhage because of an efferent vessel from the contralateral circulation, the use of a plate of the aforementioned type resulted in immediate cessation of bleeding. Postoperative angiography revealed that the aneurysm had been obliterated completely and that the plate had been correctly placed.

* The designer of the instrument is A. B. Stille-Werner, Stockholm, Sweden.