A New Clip for Surgery of Intracranial and Small Blood Vessels

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At the present time there are two clips with spring action available for intracranial surgery. One was designed by Dr. Frank H. Mayfield and the other one by Dr. Henry G. Schwartz. Although these clips are made in different sizes and shapes, sometimes it is difficult to find the desirable one. The main difficulties that one may face in certain cases are: 1) The size of the whole clip. 2) The size of the body of the clip. 3) The angular application of the clip. 4) The adjustability of the pressure exerted on the vascular structures for temporary or permanent occlusion.

This new clip* provides these facilities. It was designed by Mr. Harry S. Kerr for the Neurosurgical Service of the Toronto General Hospital. The smallest clip made up to the present time measures 15.5 mm., while the present clip measures 8.5 mm. The body of the available clips, which occasionally blocks the operative field and visibility, is reduced to the size that overcomes this problem to some extent. Applicability of the clip in various angles, which is sometimes very much desired, has been considered in the manufacture of this new clip. It can be turned in an angle of over 300 degrees when it is mounted on the clip holder and is ready to be used (Figs. 1 and 2).

Structure of the Clip. The clip is made of stainless steel and has 4 different parts: 1) The blades. 2) The body. 3) The “C”-shape spring. 4) The roller.

The blades which compress the vascular structures are made in two different shapes: straight; and bifurcated ski-board tip, which facilitates its application. The inner surfaces of the blades are serrated. The body is assembled on the roller, and a wedge defect in the rear part of the body allows it to move and separates the blades. On the side surfaces of the body there is a number of symmetrical round depressions which receive the “C”-shape spring. The pressure exerted on the blood vessels or aneurysms could be decreased or increased by moving the “C”-shape spring toward the roller or away from it accordingly. On the side surfaces of the body there also are two other round depressions symmetrically placed on each side behind the roller to receive the pins of the clip holder (Fig. 3).

* Kerr Adjustable Tension Cranial Clip, 184 Clark Ave., Thornhill, Ontario, Canada.
This clip was used on over 100 femoral and carotid arteries in cats for temporary occlusion in different procedures and proved to be satisfactory.

In 30 experimental animals vessels 1.5 mm. in diameter were occluded by these clips for as long as 3 hours at a time without evidence of damage or thrombosis.

By setting the tension appropriately, therefore, these clips may be used for temporary occlusion of the intracranial vessels. When utilized for permanent clipping the tension must be set to the maximum to insure that the clip will remain in place. The tension of the clip cannot be changed while the clip is applied, and, therefore, for aneurysmal surgery a series of clips is necessary with the tensions pre-set.