ANEURYSM CLIPS

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SUMMARY

Aneurysm clips as Neurosurgical treatment of aneurysms of the circle of Wiills was introduced more than 30 years ago originally used by Walter Dandy to those is use 40 day and has since become a standard procedure. The history is rich with many contributions from neurosurgical pioneers and innovators.

Keywords: Aneurysm of the circle of Wills; Aneurysm clips; History of Neurosurgery; Neurological pioneers

INTRODUCTION

Neurosurgical treatment of aneurysms of the circle of Willis by permanent closure with “spring clips”, placed over the neck of the aneurysm, was introduced more than 30 years ago and has since become a standard procedure. Silver clips introduced by Harvey Cushing in 1910 (Figure. 1),5,8,9,15

![Figure 1: Harvey Williams Cushing (1869-1939)](image)

PIOENEERING ERA IN ANEURYSMS SURGERY5,7,8,9,10,15,18

The goal of surgery is to isolate the thin-walled aneurysms from arterial flow while maintaining the normal patency of the parent artery and the adjacent branches. On March 23rd, 1937, Walter Dandy was the first to accomplish this by applying a V-shaped malleable silver clip to the neck of an internal carotid artery aneurysm (Figure 2).

Aneurysm clips produced during this era were: Dandy (Figure 2), Olivecrona (Figure 3), Mayfield (Figure 4), Drake (Figure 5), Heifitz (Figure 6), Lougheed-Kerr (Figure 7), Sundt-Kees (Figure 8), Sundt (Figure 9), Scoville-Lewis (Figure 10).
MODERN ERA IN ANEURISMS SURGERY

Routine use of the microscope placed new demands on aneurysm clips, particularly because surgeons had to navigate increasingly narrow and deep surgical corridors. Yasargil, therefore, developed a cross-action “spring clip” with strong closing pressures and a narrow base which increased visibility of the aneurysm neck (Figure 11).

Sugita created very long clips to treat giant and deeply located aneurysms (Figure 12)
Drake and Kees modify the clip angles and lengths (Figure 13). Aneurysm clips manufactured during this era: McFadden (Fig. 14), Mayfield (Fig. 15), Spetzler (Fig. 16), Perneczky (Fig. 17).

Figure 13: Drake and Kees clip  
Figure 14: McFadden clip  
Figure 15: Mayfield clips  
Figure 16: Robert F. Spetzler  
Figure 17: Axel Perneczky

REFERENCES

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