Coiled aneurysm

A comprehensive review of the literature for studies on surgical treatment of previously coiled aneurysms was conducted. For each study, the following data were extracted: patient demographics, initial clinical status, location and size of aneurysms, time interval between initial/last endovascular procedure and surgery, surgical indications, and microsurgical technique. Petr et al. performed subgroup analyses to compare direct clipping versus coil removal and clipping versus parent vessel occlusion, early (<4 weeks post-coiling) versus late surgery and anterior versus posterior circulation.

Twenty-six studies with 466 patients and 471 intracranial aneurysms were included. All of the studies were retrospective and non-comparative case-series. Patients undergoing direct clipping had lower perioperative morbidity (5.0 %, 95 % CI = 2.6-7.4 %) when compared to those undergoing coil removal and clipping (11.1 %, 95 % CI = 5.3-17.0 %) or parent vessel occlusion (13.1 %, 95 % CI = 4.6-21.6 %) ($p = 0.05$). Patients receiving early surgery (<4 weeks post-coiling) had significantly lower rates of good neurological outcome (77.1 %, 95 % CI = 69.3-84.8 %) when compared to those undergoing late surgery (92.1 %, 95 % CI = 89.0-95.2 %) ($p < 0.01$). There were higher rates of long-term neurological morbidity in the posterior circulation group (23.1 vs. 4.7 %, $p < 0.01$) as well as long-term neurological mortality (4.4 vs. 2.8 %, $p < 0.01$).

The metaanalysis suggests that surgical treatment is safe and effective. The data indicate that aneurysms that are amenable to direct clipping have superior outcomes. Late surgery was also associated with better clinical outcomes. Surgery of recurrent posterior circulation aneurysms was associated with high rates of morbidity and mortality. Given the characteristics of the included studies, the quality of evidence of this meta-analysis is limited [1].

1)
Petr O, Brinjikji W, Thomé C, Lanzino G. Safety and efficacy of microsurgical treatment of previously coiled aneurysms: a systematic review and meta-analysis. Acta Neurochir (Wien). 2015 Oct;157(10):1623-32. doi: 10.1007/s00701-015-2500-y. Epub 2015 Jul 14. PubMed PMID: 26166207.