Comaneci-assisted coiling

Wide-neck aneurysms represent a challenge for treatment in the setting of acute subarachnoid hemorrhage. Stent-assisted coiling (SAC) and balloon-assisted coiling (BAC) are well-known techniques for treating wide-necked aneurysms. Comaneci-assisted coiling (CAC) is a newer technique involving temporary stent deployment to assist aneurysm coiling.

Following PRISMA guidelines, PubMed and Embase databases were queried from the earliest records to July 2022 for literature reporting SAC, BAC, or CAC of ruptured intracranial aneurysms. A metaanalysis of identified articles was performed.

Results: Of the 571 articles queried, 64 articles were included. One study reported BAC and SAC, 8 reported BAC, 52 reported SAC, and 3 reported CAC. These studies comprised 3153 patients with 3207 ruptured aneurysms treated with CAC (161 patients and aneurysms), BAC (330 patients and aneurysms), and SAC (2662 patients, 2716 aneurysms). Rates of periprocedural thromboembolic or hemorrhagic complications, overall or procedure-related mortality, immediate complete occlusion, retreatment, and length of angiographic follow-up did not differ significantly between SAC and BAC. Periprocedural thromboembolic (P=0.03) and hemorrhagic (P=0.01) complication rates were higher with BAC than CAC. Periprocedural thromboembolic (P=0.03) and hemorrhagic (P=0.03) and hemorrhagic (P<0.0001) complication rates were higher with SAC than CAC. Complete aneurysm occlusion rates (P=0.033) were higher with CAC than BAC. No significant differences were present in CAC versus BAC or SAC retreatment rates.

CAC was associated with lower hemorrhagic and thromboembolic complication rates and demonstrated similar complete occlusion and residual retreatment rates to those for BAC and SAC $^{1)}$

1)

Lim J, Monteiro A, Jacoby WT, Danziger H, Kuo CC, Alkhars H, Donnelly BM, Khawar WI, Lian MX, Iskander J, Davies JM, Snyder KV, Siddiqui AH, Levy EI. Coiling Variations for Treatment of Ruptured Intracranial Aneurysms: A Meta-Analytical Comparison of Comaneci-, Stent-, and Balloon-Coiling Assistance Techniques. World Neurosurg. 2023 May 9:S1878-8750(23)00620-4. doi: 10.1016/j.wneu.2023.05.008. Epub ahead of print. PMID: 37169072.

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