

Aneurysm wall degeneration

Aneurysm wall degeneration is linked to growth and **aneurysm rupture**. To address the effect of **aspirin** (ASA) on **aneurysm** formation under various wall conditions, this issue was analyzed in a novel **rabbit** bifurcation model.

Bifurcation **aneurysms** created in 45 New Zealand White rabbits were randomized to vital (n=15), decellularized (n=13), or elastase-degraded (n=17) wall groups; each group was assigned to a study arm with or without ASA. At follow-up 28 days later, aneurysms were evaluated for patency, growth, and wall inflammation at macroscopic and histological levels.

36 rabbits survived to follow-up at the end of the trial. None of the aneurysms had ruptured. Patency was visualized in all aneurysms by **intraoperative fluorescence angiography** and confirmed in 33 (92%) of 36 aneurysms by MRI/MRA. Aneurysm size was significantly increased in the vital (without ASA) and elastase-degraded (with and without ASA) groups. **Aneurysm thrombosis** was considered complete in three (50%) of six decellularized **aneurysms** without ASA by MRI/MRA. Locoregional inflammation of the aneurysm complex was significantly reduced in histological analysis among all groups treated with ASA.

Aspirin intake prevented **inflammation** of both the periadventitial tissue and **aneurysm wall**, irrespective of initial wall condition. Although ASA prevented significant growth in aneurysms with vital walls, this preventive effect did not have an important role in elastase-degraded pouches. In possible translation to the clinical situation, ASA might exert a potential preventive effect during early phases of **aneurysm** formation in patients with healthy vessels but not in those with highly degenerative aneurysm walls ¹⁾.

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Wanderer S, Grüter BE, Strange F, Boillat G, Sivanrupan S, Rey J, von Gunten M, Remonda L, Widmer HR, Casoni D, Anderegg L, Fandino J, Marbacher S. Aspirin treatment prevents inflammation in experimental bifurcation aneurysms in New Zealand White rabbits. J Neurointerv Surg. 2021 Mar 30;neurintsurg-2020-017261. doi: 10.1136/neurintsurg-2020-017261. Epub ahead of print. PMID: 33785639.

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