

AORTIC ELASTIC FIBER DEGENERATION DURING ACUTE TYPE A AORTIC DISSECTION SUGGESTS ONGOING FRAILITY

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Objectives: Acute type A aortic dissection (ATAAD) is a major emergency threat with an estimated total case-fatality rate of up to 73%. The purpose of the study was to investigate whether histopathology adds to the assessment of aortic frailty associated with ongoing aortic events.

Materials and methods: The study investigated 141 patients operated on for ATAAD between the years 2008 and 2021. The aortic wall of patients undergoing reoperation (n=21) due to any new aortic event was compared with those without need of reoperation during follow-up (n=120, Controls) using the Society for Cardiovascular Pathology and the Association for European Cardiovascular Pathology Consensus statement criteria on the following aortic wall histopathological variables media degeneration, atherosclerosis, and inflammation.

Results: The aortic walls of reoperated patients had more elastic fiber fragmentation and loss as well as more elastic fiber disorganization than the Controls (2.1 ± 0.5 vs 1.9 ± 0.5 ; point score unit (PSU), $P=0.043$ and 1.7 ± 0.8 vs 1.2 ± 0.8 ; PSU, $P=0.016$).

Conclusions: Some histopathological characteristics may be related to new aortic events. A histological grading system may facilitate clinical follow-up.