

Relationship between Matrix Metalloproteases and Tissue Inhibitor of Matrix Metalloproteinase Levels and Elastic Moduli of Ascending Aneurysms

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Abstract : The objective of this study is to determine if there is a correlation between the biological levels of matrix metalloproteinases and tissue inhibitor of matrix metalloproteinase (TIMP) and the elastic moduli of the ascending aortic wall in patients with ascending thoracic aortic aneurysms (ATAA). Methods: Circumferential specimens from twelve patients with ATAA were obtained from the greater curvature, and their tensile properties (maximum elastic modulus) were tested uniaxially. The levels of MMP2, 3, and 9, as well as TIMP1, were determined in these aortic wall specimens using MMP/TIMP antibodies array. Direct relations were found between MMP2 and the elastic modulus of the ascending aorta wall and between MMP9 and TIMP1.

Keywords : elastic modulus, MMPs/TIMPs levels, Ascending Thoracic Aortic Aneurysm

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