



Numerical Simulation of Intraluminal Thrombus Compliance Effects in an Abdominal Aortic Aneurysm Using FSI Method

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Aneurysm is widening of an artery (more than 50 % of nominal diameter) or its wall displacement due to weakness in the wall of vessel. Among the common complications of abdominal aortic aneurysm is Intraluminal Thrombus that can have considerable effect on the aneurysm wall stress (the main cause of aneurysm rupture). In this study, the effect of Intraluminal Thrombus on hemodynamic parameters in an abdominal aortic aneurysm is investigated, applying fluid-structure interaction method. To achieve this purpose, an axisymmetric model of abdominal aortic aneurysm having thrombosis with different Young coefficients in the presence of pulsatile blood flow is simulated using ADINA 8.7 software and fluid-structure interaction method. The results indicate that increase of thrombus Young modulus results in decrease of solid medium displacement as well as its maximum effective stress. In addition, increase of Young modulus leads to significant decrease of maximum value of shear stress.