Effect of Parent Artery Geometry on Flow Through Cerebral Aneurysm

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The significance of parent artery geometry in aneurysm secondary flow is studied experimentally using PIV techniques. Several generalized models are used to obtain fundamental information on secondary flow structures, vortex dynamics and wall shear stress under a pulsatile flow. Time-dependent flow field through a model with the aneurysm on the lateral side of a curved parent artery is compared with that through a straight parent artery. The different wall shear stresses and fundamental structures seen within the aneurysm confirm the importance of the parent artery configuration in the development of aneurysm secondary flow. The experimental results are analyzed and compared with the numerical simulations.

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