

Abstract Submitted  
for the DFD06 Meeting of  
The American Physical Society

**Treatment of Basilar Aneurysms with SMP Foams** J.M. ORTEGA, J.N. RODRIGUEZ, D.J. MAITLAND, T.S. WILSON, Lawrence Livermore National Laboratory (LLNL), J. HARTMAN, U.C. Davis Medical Center — Researchers in the Medical Division at LLNL are currently developing a shape memory polymer (SMP) foam aneurysm treatment technique. This technique involves the catheter delivery of a compressed piece of SMP foam to an aneurysm. When the foam is heated by laser radiation from a diffusing fiber-optic element embedded within the catheter, the foam expands, filling the aneurysm volume. If proven successful, such a treatment alternative will provide clinicians the ability to not only isolate an aneurysm from the vascular system with one device, but also to customize the shape of the lumen beneath the aneurysm neck. Consequently, the flow patterns beneath the aneurysm neck could potentially be optimized to minimize the hemodynamic stresses on the lumen. In this computational study, multiple lumen shapes are simulated beneath the necks of several patient-specific basilar aneurysms. A comparison is made between the pre-treatment and post-treatment configurations, as well as with a conventional surgical clipping configuration. This work was performed under the auspices of the U.S. Department of Energy by the University of California, Lawrence Livermore National Laboratory under Contract No. W-7405-Eng-48. UCRL-ABS-222933.

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Date submitted: 19 Jul 2006

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