Neurocritical ICU

Complex cerebrovascular therapies often require complex post-operative care. UCLA patients benefit from access to an on-site neurosurgical intensive care unit with a staff exclusively dedicated to post-operative care of neurosurgical patients. This 24-bed unit offers continuous EEG brain monitoring, advanced telemedicine, transcranial Doppler and cerebral blood-flow monitoring and a dedicated team of neurocritical care specialists at all times.

Widely published and cited

Research undertaken at UCLA is widely presented and frequently cited. According to a recent survey, UCLA ranked six among 385 institutions worldwide in number of citations (nearly 85,000) in neuroscience and behavior journals during the period 1997-2007, according to Thompson Scientific.

Innovative clinical trials

As a National Institutes of Health “Center of Excellence,” the Aneurysm and AVM Program offers patients opportunities to participate in pioneering new clinical trials involving cutting-edge treatments. UCLA scientists are actively pursuing a better understanding of cerebrovascular disease and improved treatments. When research here or elsewhere yields a promising new therapy, UCLA is often one of the first institutions to offer its patients access to potentially life-altering therapies while they are in clinical study.

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The UCLA Brain Aneurysm and AVM Program is a world leader in the diagnosis, treatment and management of vascular diseases of the brain and spinal cord. These diseases include aneurysm, arteriovenous malformation (AVM), cavernous angioma, stroke and carotid and intracerebral stenosis. UCLA benefits from the skills and experience of a multidisciplinary of team experts who work collaboratively to understand the complete physiopathology of each patient’s disease and carry out an optimal treatment plan.

The Brain Aneurysm and AVM Program’s clinicians and researchers work closely with the UCLA Stroke Center, the first facility in Los Angeles County certified by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) as a Primary Stroke Center.
**Breakthrough inventions**

Many of the life-saving devices and techniques that have become standards of care for aneurysm and AVM were invented and perfected at UCLA. A uniquely deep understanding of these devices and techniques allows UCLA to exploit these innovations to their practical limits and to each patient’s best advantage. UCLA inventions include:

- **The Guglielmi Detachable Coil (GDC).** A revolutionary alternative to surgical clipping, coiling is now the gold standard for endovascular treatment of aneurysm. This minimally invasive procedure uses a microcatheter to place a coil into the neck of the aneurysm, isolating it from circulation.

- **The Mechanical Embolus Removal in Cerebral Ischemia (MERCI) Retrieval System.** The first mechanical device approved in the United States for the endovascular treatment of ischemic stroke, the MERCI quickly and safely pulls clots from blocked arteries in the brain and is deployable up to eight hours post-stroke. UCLA has a longer history with this device than any other medical center.

- **The Matrix coil.** This combination of platinum wire and bioabsorbable polymer (illustrated below) accelerates aneurysmal clot maturation, helping the aneurysm to heal across its neck.

**Unique combination of skills**

While aneurysm can sometimes be treated with clipping or coiling alone, more complex cases may require a combination of surgical and endovascular treatment. UCLA’s cerebrovascular team comprises experts in vascular neurosurgery and endovascular interventional radiology. The team also benefits from the skills of a surgeon-radiologist who is trained and credentialed in both neurosurgery and interventional neuroradiology. This unusual combination of skills is important in highly challenging cases.

**Expertise with giant aneurysms**

Giant intracranial aneurysms are some of the most challenging lesions encountered by cerebrovascular surgeons today. While a number of endovascular therapies exist, none has proven entirely satisfactory in terms of risk and outcome. At UCLA, we treat these highly complex cases using combined surgical and endovascular approaches. Surgical treatment usually requires revascularization and parent-vessel occlusion. Revascularization is a technically demanding, time-consuming and high-risk procedure that involves hand suturing using a filament thinner than a human hair. Only highly skilled surgeons working in state-of-the-art medical centers should undertake such surgeries. UCLA’s surgical team has a track record of successfully treating these difficult aneurysms.

**Complex vascular malformations**

Like aneurysms, AVMs pose complicated treatment challenges due to the risks associated with various treatments. UCLA brings together experts in the various therapeutic approaches who work collaboratively to carefully access risk factors and select the optimal plan for each patient.

Our comprehensive program integrates several disciplines that allow careful evaluation and treatment of complex AVMs. Sophisticated diagnostic techniques depict in detail the architecture and flow patterns of these lesions. Based on the structure of the vascular malformation and its individual characteristics, a multidisciplinary team establishes the treatment plan combining embolization, radiosurgical and neurosurgical strategies.

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For more information and latest updates, visit [www.uclahealth.org](http://www.uclahealth.org)