



# When ‘Time is Brain,’ Prompt Response Essential to Successful Stroke Treatment

## STORY HIGHLIGHTS

The UCLA Comprehensive Stroke Center is a first point of contact to quickly assess and intervene with patients thought to have had a stroke.

A large team that can respond quickly is essential to the successful treatment of a stroke.

As the first point of contact in quickly assessing and intervening with patients brought to the UCLA Comprehensive Stroke Center, the interventional neuroradiology team plays a key role in the success of UCLA’s stroke program.

When patients in Los Angeles appear to be suffering from acute stroke, emergency responders use the Los Angeles Prehospital Stroke Screen, a tool validated at UCLA, to identify those who should be transferred to the UCLA Comprehensive Stroke Center for potential interventional treatment. For patients who are routed to UCLA, the “brain

attack” team is activated. After an initial rapid evaluation to determine whether the patient is suffering from an acute stroke as opposed to a stroke mimic, the team ensures that the patient is stable before further assessment using advanced imaging — either CT or MRI. If stroke intervention is indicated, the front-line treatment is medical, in the form of intravenous tissue plasminogen activator (tPA), a clot-busting drug that can be administered effectively up to four-and-a-half hours after an acute stroke.

If a patient shows blockage of a large vessel of the brain — most commonly the internal carotid

artery, the middle cerebral artery or the basilar artery — he or she is taken to the angiography suite. There, assuming intravenous tPA hasn't resolved the problem, the interventional neuroradiology team seeks to remove the clot. "This requires a large team that can respond quickly," says Gary R. Duckwiler, MD, chief of the Division of Interventional Neuroradiology at UCLA. At all times, he notes, UCLA has a neurologist and interventional neuroradiologist on call, along with MR/CT techs, nurses and angiographic techs. "It is essential to have a system in place that will attend to the patient immediately and efficiently, because 'time is brain,'" Dr. Duckwiler says. "We know that opening up blocked arteries as quickly as possible provides the best chance of recovery."

The mainstay for removing clots and reopening vessels in patients with large occlusions that can't be unblocked by tPA are devices that Dr. Duckwiler and his colleagues navigate, under X-ray guidance, through the artery of the groin, after an angiogram has identified the site of the blockage and the flow of blood to the brain. These stent-retriever devices are attached to a small wire and deployed through a catheter toward the brain vessels. "The devices are self-expanding," Dr. Duckwiler says. "We place the device at the level of the clot, the stent retriever expands in the clot, the device captures it and then we pull it out in an effort to restore flow in the blood vessel."

UCLA has been involved in developing the clot-removing technique from the beginning — the UCLA Division of Interventional Neuroradiology invented the first device approved by the U.S. Food and Drug Administration for use in opening up brain vessels in acute stroke, the MERCI retriever, and conducted the clinical trials that showed it improved outcomes for patients with large-vessel occlusions who fail to respond to medical therapy. "Our team has been involved in the advances in acute stroke care from the outset, both with medical and interventional therapies," Dr. Duckwiler notes. The devices have improved significantly over the years, to the extent that Dr. Duckwiler and his colleagues are now able to successfully retrieve the blood clot in 80-to-90 percent of cases.

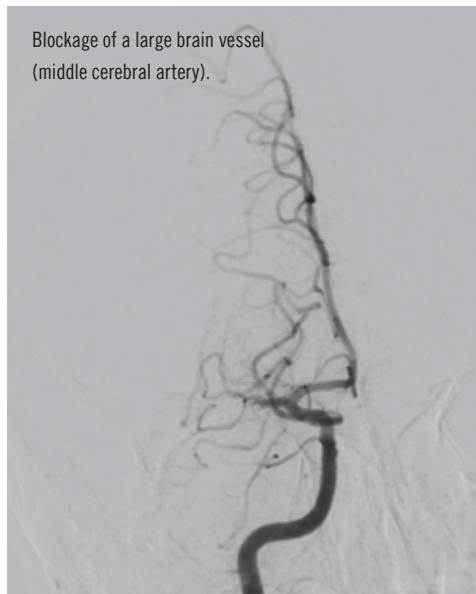
**"It is essential to have a system in place that will attend to the patient immediately and efficiently, because 'time is brain.' We know that opening up blocked arteries as quickly as possible provides the best chance of recovery."**

Patients who are successfully treated also benefit from the full continuum of care offered by the UCLA Comprehensive Stroke Center, including the dedicated neurointensive team attending to patients in the neuro ICU, along with the specialists who work with patients during rehabilitation.

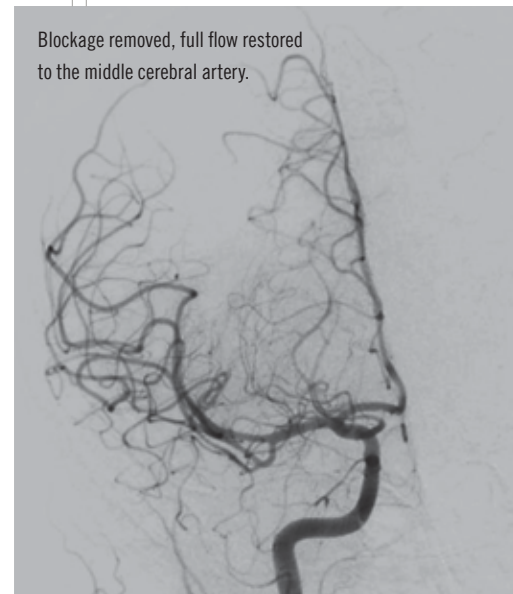
"Honing our practice over many years has made our team adept at getting patients assessed and treated quickly and successfully, in an environment where every aspect of care across the continuum is critical for overall patient recovery," says Dr. Duckwiler. "This has contributed to significantly better overall outcomes, as demonstrated in multiple studies."

If a patient shows blockage of a large vessel of the brain, he or she is taken to the angiography suite of the UCLA Comprehensive Stroke Center, where a neurologist and interventional neuroradiologist are always on call, along with MR/CT techs, nurses and angiographic techs.

Blockage of a large brain vessel (middle cerebral artery).



Blockage removed, full flow restored to the middle cerebral artery.



## One-Call Stroke Acceptance Line

**For immediate acceptance of acute stroke transfers to UCLA, call (310) 825-0909 Press 1**

For patients whose symptoms began in the past 12 hours with:

Brain hemorrhage • Subarachnoid hemorrhage • Brain trauma • Ischemic stroke