

# UCLA is first center in California to offer minimally invasive procedure for removing blood clots



UCLA is the first medical center in California to offer a minimally invasive procedure to remove blood clots from patients with deep vein thrombosis and/or pulmonary embolism. The new procedure uses an FDA-approved device called the AngioVac, which vacuums the blood clot out of the vein and filters out solids before returning the cleansed blood to the patient. An alternative to surgery, the procedure is available to many patients with blood clots in the lungs or blood vessels deep in the body, especially the pelvis or belly, that are at risk of breaking off and traveling to the heart or lungs.

## Deep vein thrombosis and pulmonary embolism

Deep vein thrombosis is a blood clot that forms deep in the body, usually in the lower leg or thigh. Pulmonary embolism occurs when a blood clot breaks off and travels through the bloodstream to an artery in the lungs, blocking blood and presenting a serious risk of damaging the lungs or other organs, sometimes fatally.

Prompt diagnosis and treatment of deep vein thrombosis is essential to reduce the risk of a potentially fatal pulmonary embolism. Anticoagulant agents or blood thinners are the first line of treatment for patients with deep vein thrombosis. While these medicines prevent blood clots from growing larger, they do not always eliminate existing ones.

## AngioVac an alternative to open-heart surgery

While more than 100 patients have been treated with the AngioVac clot removal system worldwide, UCLA was the first center to use the device in California, successfully removing a two-foot blood clot from a 62-year-old patient.

The massive blood clot was discovered when the patient arrived at Ronald Reagan UCLA Medical Center suffering from shortness of breath, fatigue and extreme cold.

Faced with the possibility of undergoing open-heart surgery, the patient agreed to allow UCLA physicians to remove the deadly blood clot with the minimally invasive AngioVac system. UCLA interventional radiologist John Moriarty, MD, and cardiovascular surgeon Murray Kwon, MD, performed the three-hour procedure. A week later, the patient was home and on his way to a full recovery.

“Many patients can benefit from this procedure, because it is fast, minimally invasive and reimbursable by insurance,” says Dr. Moriarty. “The AngioVac is a game changer for us in treating people who previously had few or no options other than open-heart surgery.”

Patients with large blood clots that cause severe symptoms are often prescribed thrombolytic medications such as tissue plasminogen activator (tPA) to dissolve their clots. These medications, which are also effective at minimizing damage to the brain and heart when used in the immediate aftermath of stroke or heart attack, work slowly over a period of several days.

Patients with large blood clots who need immediate treatment to prevent heart attack or stroke may undergo catheter-driven thrombolysis, in which a thrombolytic agent is delivered directly to the blood clot, often breaking the clot down in 24 hours or less.

Patients with blood clots in the heart who are not candidates for this procedure typically had only one option: open-heart surgery. During this procedure, surgeons carefully cut the patient's breastbone in half and spread apart the ribs to access the heart and remove the blood clot. Patients may take longer to recover from the physical trauma of open-heart surgery than with other, less invasive options.

### AngioVac is a safe and cost-effective alternative to surgery

The AngioVac clot-removal system is a safe, cost-effective and minimally invasive alternative to emergency open-heart surgery for patients with massive blood clots in the heart, and an excellent option for patients who need immediate treatment for blood clots in their lungs, pelvis or abdomen.

The clot-removal system has two parts: a cannula or tube with an expandable, balloon-actuated tip that is inserted into the vein and an extracorporeal (outside the body) circuit with a filter and pump that keeps blood circulating through the patient's body during the procedure.

Physicians make two small incisions during the procedure — one at the neck, and another at the groin. The interventional radiologist inserts a cannula into the vein with the blockage, usually through the neck, and guides a coiled hose to the blood clot. Threading the other end of the cannula through a vein in the groin, physicians hook the hose to a heart-bypass pump that creates enough suction to remove the blood clot from the vein. A filter eliminates solid material from the blood before it flows back into the patient's body.

### AngioVac is one of many complex interventional procedures performed by UCLA's radiologists

The AngioVac procedure is one of a wide variety of complex diagnostic and interventional procedures performed by the department's interventional radiologists. Our faculty members have extensive experience in embolization therapy, balloon dilations of constricted vessels, and the transcatheter destruction of blood clots (thrombolysis) to treat symptoms of peripheral vascular disease. Other procedures performed include treatment of peripheral arterial disease, vascular malformations, fibroids, central venous access catheter insertion and maintenance, stent placement and transjugular intrahepatic portosystemic shunt (TIPS).

## Participating Physicians

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