

Vacuum Device Offers Alternative to Surgery for Patients with Potentially Deadly Clots

A minimally invasive procedure, used by UCLA physicians for the first time in California, uses a vacuum device to suck potentially deadly blood clots out of a patient's heart. The device, AngioVac, represents an important nonsurgical option to deal with such life-threatening clots.

UCLA interventional radiologists and surgeons used the AngioVac on a 62-year-old patient who came to the emergency room of Ronald Reagan UCLA Medical Center complaining of shortness of breath, fatigue

and extreme cold. A CT scan revealed a 24-inch clot that stretched from the patient's legs to his heart.

"The clot clogged his heart chamber like a wad of gum in a pipe," says John Moriarty, MD, who performed the procedure. "Every moment that passed increased the risk that the clot would migrate to his lungs and kill him."

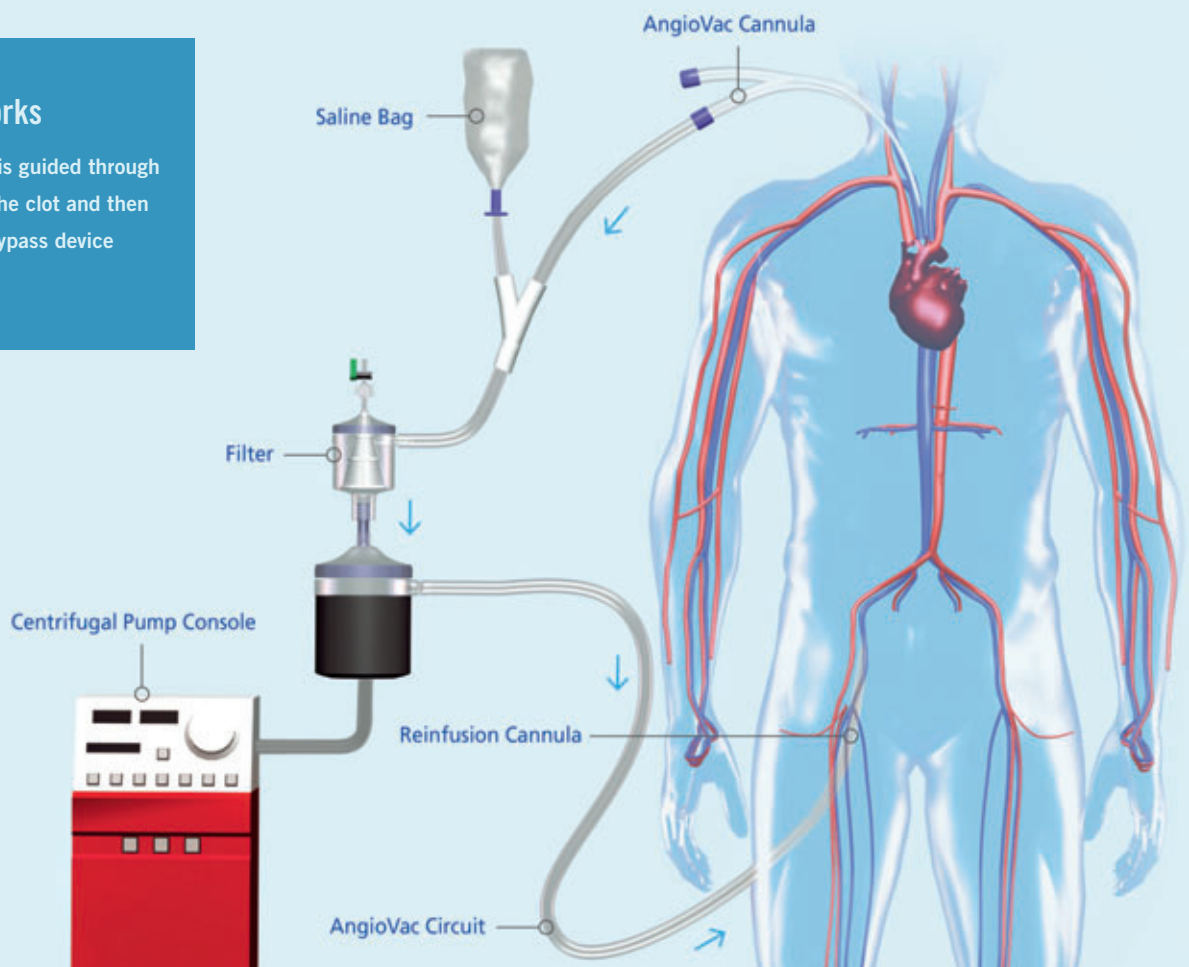
Medication failed to break up the clot, leaving the patient with a difficult choice: an open-heart procedure that he might have been too weak to endure or undergoing the first-time

use of the device. He opted for the AngioVac, and the clot was successfully removed. The patient was able to return home within a week.

To perform the AngioVac procedure, interventional radiologists slide a tiny camera down the patient's esophagus to visually monitor the heart, and then insert a tube with a funnel-shaped tip into an artery in the neck. The tube is guided through the blood vessels until it reaches the clot. With one end of the tube pressed against the clot, the other end is threaded through a vein in the groin

How AngioVac Works

The AngioVac cannula is guided through a vessel to the site of the clot and then connected to a heart-bypass device to create suction.





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Transitioning from Pediatric to Adult Healthcare

Care Program. “But planning these transitions early is crucial because adolescents with complex, chronic conditions need uninterrupted access to appropriate, high-quality healthcare, or they risk becoming very sick.”

Approximately 15 percent of children in the United States aged 17 and younger have complex medical conditions, ranging from asthma, diabetes and congenital heart disease to juvenile inflammatory arthritis, cystic fibrosis, neurological disabilities and organ transplantation. As many as 60 percent of these patients experience gaps in medical care, health-insurance coverage or both during their transition from adolescence to adulthood. To avoid these problems, patients should begin the transition to adult-based healthcare between the ages of 12 and 18, Dr. Lotstein says: “Early planning prevents problems and helps to decrease anxiety for the patients and their parents.”

At UCLA’s Med-Peds Transition Care Program, preparing for the transition involves evaluating patients’ current and future healthcare needs and connecting patients with appropriate providers to meet those needs; addressing insurance-related issues to prevent gaps in health coverage when children are no longer eligible for coverage under their parents’ health plans; educating patients about self-care related to their conditions; and helping patients plan realistic education and career goals.

In the Adolescent/Young Adult Transitional Care Program for Congenital Heart Disease at UCLA, “we try to help patients and their parents understand their condition using an age and developmentally tailored approach,” says pediatric cardiologist, Leigh Reardon, MD, program director. “Many years after heart surgery, some of our patients believe they’re living on borrowed time, while others feel like they’re invincible.” Although an increasing percentage of

children with congenital heart defects are surviving into adulthood and leading active, productive lives, they may still face certain challenges related to lifestyle and career choices.

“Some patients don’t understand why they should anticipate future challenges such as the potential detrimental effects of pregnancy or certain types of exercise,” he says. “Discussing their personal goals and recommendations early on helps to prevent them from being disappointed or from unintentionally hurting themselves later.” Another important goal in the transition process, Dr. Reardon says, is helping young patients develop medical independence.

“There’s an interesting dynamic that occurs when an adolescent takes ownership of their healthcare from their parents. They often feel empowered and begin participating in their care in ways that make them feel that they are not defined by their medical condition,” Dr. Reardon says. “Simple steps like scheduling appointments or refilling prescriptions can help make the transition to the adult setting much more successful. Ultimately, we promote independence so that our patients can learn how to make positive choices for their lives and participate in their own care and decision-making as they become adults.”



and attached to a heart-bypass machine, which creates high-pressure suction. Once connected, the device acts like a vacuum cleaner, sucking out the clot. The system then recirculates the patient’s blood through a blood vessel near the groin, eliminating the need for a transfusion.

Dr. Moriarty notes that the AngioVac can take about half as long to perform as open-heart surgery. Because it is minimally invasive, patients usually experience less pain and discomfort and have a much quicker recovery.

Approximately one in 500 Americans will develop blood clots in their leg veins, a condition called deep-vein thrombosis, and nearly 100,000 people die each year of a pulmonary embolism, when a clot breaks away from the blood-vessel wall and lodges in the lungs or heart. The clot-busting drug tPA is effective at breaking up clots, but it can take up to four days to work and is not always able to do the job; in the UCLA patient’s case, the clot was too large and dense. In addition, certain patients, such as those who have had a stomach ulcer or stroke and are at high risk for bleeding, are not good candidates for tPA.

“The AngioVac procedure is ideal for patients with large clots in areas where it’s not safe to operate, or the operations would be very difficult,” Dr. Moriarty says. “Such patients, if they can’t benefit from medication, should be evaluated because they may now have a much better option than they had before.”



To view a video about AngioVac, go to: uclahealth.org/angiovac