

Natural aorta grafts have few side effects for infection-prone patients

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A vascular surgery technique pioneered at UT Southwestern Medical Center, in which veins are removed from the thigh to repair the aorta does not create blood-flow problems and painful side effects in a majority of patients, researchers report.

Vascular disease is a major contributor to life-threatening conditions such as aneurysms or blockages of the aorta. Inserting synthetic grafts to repair damaged aortas, the largest artery in the body, is typically the first line of treatment.

Some patients, however, are prone to infections in these grafts, which typically requires removal of the infected grafts, a surgery that leaves the patient with no blood flow to the legs. Searching for a solution to this dilemma, surgeons at UT Southwestern, led by Dr. Patrick Clagett, chairman of vascular surgery, developed a technique in the early 1990s that uses veins from a patient's own leg to fix and repair infected grafts.

Dr. Clagett and his colleagues recently reviewed the results of those grafts and found that patients had few side effects and fared well in the long-term after receiving grafts from their own bodies. He reports his findings in the September issue of the *Journal of Vascular Surgery*.

Most patients with synthetic aortic grafts experience favorable outcomes, but for the small percentage of patients who develop chronic infections within the graft that do not respond to antibiotics, they are at risk of losing their legs or dying.

"Since the veins of the leg return blood flow to the heart, there was concern that harvesting the deep veins from the thigh to repair synthetic aortic grafts could lead to problems with pooling of blood in the leg," said Dr. Greg Modrall, associate professor of surgery at UT Southwestern and the lead author of the study. "Using the deep vein as an arterial graft, which was popularized by the senior author of this

study, Dr. Clagett, has revolutionized the way we approach graft infections, and we were pleased to see few long-term side effects for patients who have received these grafts."

In addition, the researchers found that natural grafts are not nearly as prone to infection and later failure due to blockage of the graft.

The study examined 180 patients who underwent arterial reconstructions using deep-vein grafting at UT Southwestern. Of those surveyed, 85 percent reported no venous complications flow in the leg. A minority of patients (7.5 percent) reported mild swelling in the leg, and the remaining 7.5 percent reported moderate, but manageable, symptoms.

"These results are astounding, particularly when one considers that most of the patients were facing life- or limb-threatening problems when they arrived at our institution," Dr. Modrall said.

In addition to a detailed interview, researchers performed a physical examination, ultrasound testing and venous physiological testing on each limb after deep-vein harvest. Few differences were noted between the legs that had been operated upon and those that had not.

"Venous complications in the legs, known as venous insufficiency, can include swelling, skin discoloration and open wounds. We were reassured to find that even mild venous complications are quite unusual after removing the deep veins of the legs to treat these difficult graft infections," Dr. Modrall said. "Our hope here is to reassure surgeons who face these complex cases that deep-leg-vein grafts are an acceptable – even preferable – alternative to replacing a synthetic graft with another synthetic graft."

Source: UT Southwestern Medical Center

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