

NEWS

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**** U.T. Health Science Center
surgeons using new procedure
to save lower legs and feet
that are injured by diabetes.

DALLAS--Diabetes is one of the leading reasons for leg amputation in this country. But surgeons at The University of Texas Health Science Center at Dallas are using a new bypass procedure to save lower legs and feet of diabetics whose disease has blocked blood flow into the limbs. Without intervention, amputation becomes inevitable when the lower leg and foot lack proper blood supply.

The surgical procedure involves grafting the long saphenous vein from the front of the lower leg to an artery -- bypassing arterial areas clogged by cholesterol plaque, "atherosclerosis." Arteries, which carry blood down the leg to the foot, are commonly narrowed in the diabetic by atherosclerosis brought on prematurely by the disease. Veins, on the other hand, carrying blood back to the heart, are unaffected by the narrowing process.

While the concept of vein bypass sounds simple, techniques for using a vein as an artery have not always been successful, according to health science center surgeon Dr. Richard Fry. The major problem is the fact that veins have valves that if not dealt with, can make a bypass fail, "Failure was due to the 'excision and reversal method,' still the standard treatment in many places. Using this procedure a vein is excised from the groin to the foot and then reversed so valves do not impede blood flow. Often, however, the vein is of poor quality and can't be used. The lining of the vein is extremely vulnerable to injury when there is a loss of natural blood supply and damage to the lining may result in bypass failure," Fry says.

Vein bypass surgery for lower limbs was first put into large scale use during the '50s. Statistics showed a 50 percent limb survival rate over five years, with a 20 percent graft failure rate in the first 30 days. "While this was certainly better than if nothing were done, the results still caused surgeons to re-examine the procedure and try to improve it," Fry says.

Recent success of vein by-pass surgery is due first to leaving the vein in place, Fry says. This technique did not become practiced until invention of an instrument for cutting the valves, a small hook made of thin, flexible steel, devised by an Albany, N.Y. surgeon. Until a few years ago, only the New York surgical group used the improved "in situ" procedure, Fry says. Now the method, no longer experimental, is being used by UTHSCD surgeons.

Diabetic patients seek medical help when they have trouble walking, Fry says. "While these patients need to be compulsive about taking care of their feet, some are not. Some have foot ulcers that won't heal from lack of blood while others wait until gangrene sets into a toe. Some have severe rest pain in the ball of their foot, which is a grave sign that enough vessels are clotted off that loss of the limb is imminent if nothing is done."

Since advanced diabetes can cause degenerative nerve disease (neuropathy), a diabetic can injure a foot without knowing it. Diabetic neuropathy sometimes affects nerves leading to internal organs but commonly damages nerves of the legs and feet. Neuropathy begins with tingling and numbness in the legs and feet and progresses to total lack of feeling. Injury can lead to infection and gangrene since blood flow to the foot is not sufficient to allow healing to occur. Amputation in the past was too often the only alternative.

Today hospital tests begin with non-invasive exams for measuring blood flow and blood pressure in the leg and foot. "Blood pressure below the knee should be about the same as the arm, but with severe vascular disease the leg blood pressure is often less than 40 percent of what it should be. We also test for toe blood pressure, and this too should equal the arm pressure. Using blood pressure and blood flow tests we can select the people at highest risk of losing a limb," Fry says. "Twenty-five or

(more)

leg grafts--add one

thirty years ago the chance of amputation would have been very high.

"Now there is a very high degree of success, with graft success up to 20 percent higher than seen with older techniques, even though the surgery can only treat the symptoms without curing the disease," Fry says. "The procedure does allow diabetics to keep a functional leg longer and gives them more time to be independent."

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