

>> Measure Focus: AVF

Boosting arteriovenous fistula rates in CKD patients requires buy-in and teamwork according to one vascular surgeon.

Nephrologist Dr. Vo Nguyen got his wake-up call about vascular access in 1996.

Actually, it was a triple wake-up call, according to Nguyen, medical director of Aberdeen Dialysis Center, Renal Care Group of the Northwest, Olympia, Wash., and member of the American Society of Diagnostic and Interventional Nephrology.

His dialysis group got a warning letter from the Medical Review Company about a high rate of hemodialysis arteriovenous (AV) graft failure among end stage renal disease patients on chronic hemodialysis.

Then vascular surgeon partners balked at the need to intervene when AV grafts thrombosed — sometimes at midnight after all the day's scheduled operations were completed. And he was shaken by the generally poor patient outcomes from dialysis catheters and grafts, which are more

prone to severe infection.

Nguyen, who had always considered AV access as the concern of the surgeon rather than the nephrologist, went to surgeon Chris Griffith and asked for help. Working with Griffith and other members of the dialysis team, they created a program to shift from grafts to fistula as the standard AV access — an unusual strategy, compared to the standard of practice in the United States.

Why AV Fistula?

Like most nephrologists, Nguyen did not have formal training in AV fistula creation and had gone with AV grafts as the default because they are simpler and quicker to create than fistulae. To create an AV fistula, a surgeon needs a well-mapped target for joining an artery and a vein, and it typically takes weeks or months for the fistula to mature before use.

"Who wants to spend six months waiting?" says Nguyen.

Studies show, however, that AV fistula achieve a higher survival rate than AV grafts, with less thrombosis and infection. Nguyen also knew that most European dialysis patients receive fistula.

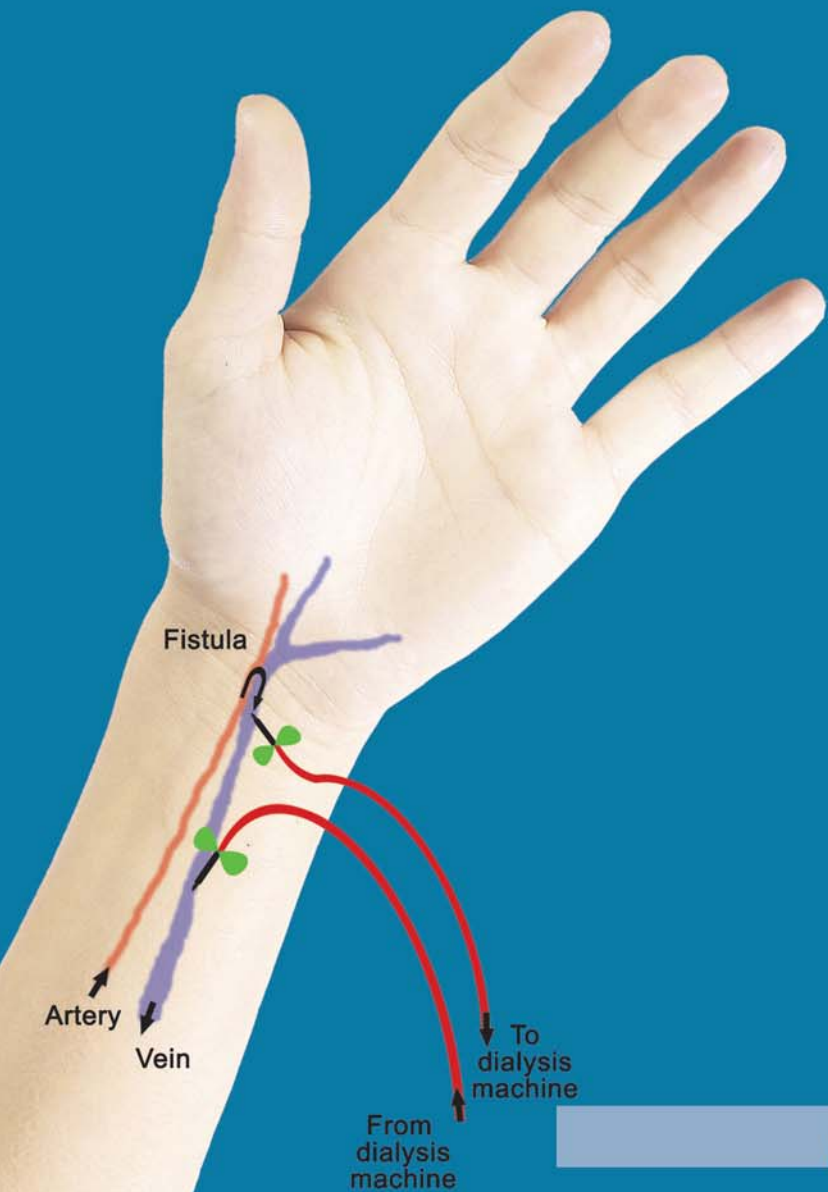
Making the transition became a "true passion" for Nguyen, as he describes it. Griffith helped him understand the vascular surgeon's information needs and operating procedures. Nguyen also read extensively about AV access and talked with European nephrologists during several visits there and online with Renaliste, an email distribution list for Francophone nephrologists. Key nursing staff volunteered to learn the sometimes forgotten art of cannulating fistula, including the Buttonhole technique, and trained others.

The program proved highly successful, with all dialysis patients with failing grafts converted to secondary fistula by the year 2000 and all new patients starting dialysis with fistulae. A more recent survey showed that 98 percent of Nguyen's patients had fistula, with greatly reduced use of catheters.

Steps for Change

As part of the system change process, Nguyen and his team noted several things that needed to take place for the new standard to be a success and recommends them for others to consider.

Recognize that this is a team effort. It requires collaboration and trust, not just between nephrologists and surgeons, but with nursing staff, other dialysis team members,



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primary care physicians, and patients and their families.

The nephrologist must play a central role. In addition to coordinating the effort, nephrologists must have a thorough understanding of Doppler analysis and other vein mapping techniques, surgical options for creating fistula, and cannulating techniques.

Make a roadmap. Establish an outline for the effort.

Prepare for the fistula long before it is needed. Ideally, a referral should be made at least six months before dialysis is needed.

Establish a relationship of trust with primary care physicians. Nguyen's nephrology group started with a letter sent to local primary care physicians, to encourage early referrals. Building this relationship, according to Nguyen, is "a lot of work; a simple letter is not going to do it."

Educate patients and their families. Patients don't want to hear about the operation when they do not feel sick and yet early surgery for fistula is key to success. "I spend a lot of time talking to patients and their families," Nguyen says. "I always invite the whole family to come to the first visit. Convince the family, and they will beat on the patient to do it." It's important to explain the procedure in very simple terms, he said. "I tell them the [result] is just like varicose veins, the uglier the better. A fistula is like car insurance: we hope that we'll never need to use it, but we'll be glad to have it in case of an accident."

Set expectations properly in case the first operation doesn't do the job, since we are dealing with sicker and older patients with higher risk of fistula failure to mature properly, we tell them that another surgery may be needed. In addition, patients must learn to protect all veins that may be needed for future fistula construction: needle sticks are allowed only in hand veins.

Use new surgical approaches when needed. Patients who are older or obese may need special procedures, including transposition of deep upper arm veins. Small anastomosis size helps to prevent steal syndrome (hand ischemia after fistula creation).

Stop revising failing grafts and convert all existing grafts into secondary fistulas using long term vascular access planning.

Encourage home peritoneal dialysis. Late referral patients are encouraged to consider home peritoneal dialysis until the fistula mature in order to avoid the use of hemodialysis catheters which are the worst dialysis vascular access.

Maintain a checklist for each patient. The AV Access Checklist for Nephrologists documents key material for a surgical plan, including mandatory preoperative vein mapping for all patients.

Educate staff. Proper training in AV access is key for all team members. That's a particular issue, in Nguyen's opinion, because historically "there's been no training whatsoever in vascular access for nephrologists and not much for surgeons." Graft cannulation is very different from fistula. Dialysis staff are more familiar with graft cannulation, since the majority of vascular accesses in use in this country are grafts. Training in fistula cannulation is the key of a successful fistula program.

Monitor results as part of a comprehensive quality care control program. Maintain and analyze statistics on AV access by the nephrologist, surgeon, and dialysis unit to encourage change in practice behavior.

5 Reasons Fistulas Are

*the
Gold
Standard*

- 1 Lower risk of infection than grafts or catheters
- 2 Lower tendency to clot than grafts or catheters
- 3 Greater blood flow, increasing the effectiveness of hemodialysis as well as reducing treatment time
- 4 Functions longer than other access types; in some cases a well-formed fistula can last for decades
- 5 Usually less expensive to maintain than synthetic accesses



Download the entire study at:
http://www.fistulafirst.org/pdfs/NNI_nguyen.pdf