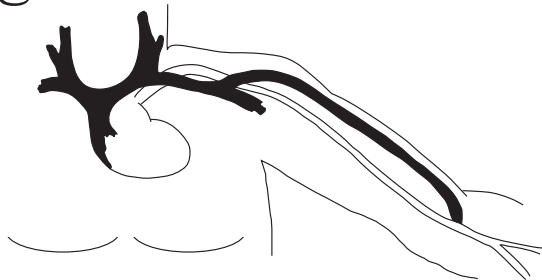


Focusing
on
Fistulas
and
Vascular
Access
Solutions
for
Southeast
Michigan



With monthly discussions on strategies for meeting the DOQI benchmarks for Fistulas and Topics in Endovascular Management of Dialysis Access

VOL. 1 No. 6

November 2004

Editor: Marc Webb, MD, FACS

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PRACTICE NEWS

Michigan Vascular Access News Resumes

"What happened to your newsletter?" The summer vacations, the demands of an expanding practice, and a three-month delay in occupying our new office at Lahser and 11 Mile in Southfield put the MVA News on ice temporarily. The October issue will mark the resumption of regular publication. If you know of someone who would like to receive the newsletter, if you would like to submit a picture of your fistula for the Fistula of the Month (signed release form included, please) or if you have suggestions for future issues, please send information to Michigan Vascular Access, Beacon Square Office Building, Suite #4, 21701 W. Eleven Mile Road, Southfield, MI 48076.

New Office Location and New Contact Numbers

Our new office in Southfield provides a full-time home for Michigan Vascular Access. The new location is expected to be more convenient for many patients, will offer the possibility of more flexible office hours, and will allow us to provide better communication with other providers, and services such as digital photo ultrasound fistula mapping that were not possible in time-share clinic settings.

The new location is centrally located in the Metro area, and easily accessible from most area freeways being located halfway between I-75 and 275 on I-696, within a mile of the Lodge and Southfield Freeways and Telegraph Avenue (see map on insert).

The office is in the Beacon Square Office Building, Suite #4, 21701 W. Eleven Mile Road, Southfield, MI 48076, 248-355-1100 office, 248-355-2717 fax.

Second New Staff Member

Christina Collins is joining Michigan Vascular Access as a Patient Care and Information Technology Coordinator this month. Christina brings a depth of experience with her BA in Business Information Technology from UM Dearborn, her previous position as a hemodialysis technician, and her current educational pursuit of a nursing degree.

In her new role she will be instrumental in managing our Point-of-Care electronic medical record system (Turbo-Doc) to improve service and communications with other providers. She will also assist Lucretia High in getting patients seen and evaluated rapidly, in arranging for surgical scheduling, and in providing important liaison services for patients, dialysis units and referring physicians.

New Surgical Site for Michigan Vascular Access - William Beaumont Hospital in Royal Oak

Michigan Vascular Access is now offering surgical and endovascular services at William Beaumont Hospital in Royal Oak. Surgical and endovascular services are also offered at St. Mary Mercy Hospital in Livonia, at North Oakland Medical Center in Pontiac and Bon Secours Hospital in Grosse Pointe.

Achieving the DOQI Benchmark for Fistulas in Hemodialysis: Strategies for 2004

INSTALLMENT SIX

"Maturation of fistulas once created"

After an arteriovenous fistula is created, it must "mature". In general, fistulas require a three-to-six month growth period as the vein subjected to higher pressure and blood flow becomes larger and tough enough to be cannulated in two places three times a week. As the goal of creating more fistulas has gotten more attention, actual performance in maturing fistulas to usefulness has been examined. Studies show a wide variance in maturation success rates, from 20 to 90%.

Generally accepted guidelines call for re-evaluation of a newly created fistula if it has not been deemed usable by 6 months. Assessment can include applying objective criteria to the fistula, such as protocolized ultrasound examinations and blood flow measurements, or a "gestalt" test can be administered by an experienced access surgeon or dialysis professional. My practice is to more aggressively re-evaluate fistulas when the patient is being dialyzed via a catheter, since the "clock is ticking" and it is only a matter of time until an infected catheter or central stenosis will occur. Slow growth is expected, and sometimes it is reasonable to give more time to achieve the goal, but frequently growth is stymied by anatomic problems which prevent further growth in a reasonable time. In these instances, action to correct the limitation will be necessary to restore the growth curve.

Many factors can interfere with the maturation of fistulas, and awareness of these factors should be included in the assessment process. The office ultrasound machine allows a better understanding of the developing anatomy of a fistula, and frequently identifies or suggests these limiting factors. A specific strategy for each type of problem is important. Waiting for the problem or difficult patient to go away is not a strategy.

Inflow stenoses are common in wrist and elbow level cephalic fistulas. The cephalic vein is frequently smaller between the wrist and the dorsal

branch two inches up the forearm, and also between the antecubital fossa and the lateral branch several inches up from the elbow. Small clamps placed on the veins during surgery may injure the vein and create scarring and stenosis. In either location, a catheter can be placed in the fistula above the stenosis directed retrograde for contrast studies and balloon dilation of the narrow segment. A standard arterial angiogram from the leg out to the arm can also be useful in diagnosing and dilating inflow stenoses. This "minimally invasive" approach is frequently successful, and can be repeated as often as necessary.

An option for stenoses at the wrist is to abandon the venous segment between wrist and dorsal branch, and reattach the fistula at the dorsal branch where it is naturally larger to the radial artery slightly higher. The vessels are bigger, and more flow can be expected, but some length will be sacrificed, and the new fistula will be shorter.

Stenoses just above the elbow are more difficult to revise if venoplasty fails, as the brachial artery and cephalic vein tend to be further apart on opposite sides of the biceps muscle. Nevertheless, the cephalic can be freed and transposed across the biceps to meet the brachial artery several inches above the elbow, a larger lateral branch can sometimes be moved across in similar fashion, or a jump graft can bridge the gap.

Stenoses in mid-fistula or in the outflow are also known, and are generally signaled by pulsatility in all or part of the fistula. Stenoses in the "swing-zone" between the transposed and in-situ portions of the basilic vein in transposed basilic fistulas are very common. A swollen arm after placement of an AV fistula or graft frequently occurs due to central stenosis from catheters left in too long.

Again, fistulography, venoplasty, and (rarely) stenting are employed to diagnose and treat fistulas which are unusable because of pulsatility or other problems. Fortunately, venoplasty is usually successful in resolving the problem, although redilation may be necessary at intervals as scarring and stenosis recurs. The role of the "cutting balloon" recently approved by the FDA

in reducing failure of venoplasty, or reducing the necessary frequency of dilations, remains to be defined. Revision can also be necessary, and the most rational course is sometimes to abandon a complicated and dysfunctional forearm fistula in favor of a surer upper arm fistula option (see "Fistula of the Month").

Unlike grafts, fistulas can have branches which sometimes divert flow away from the desired "central channel" one wishes to develop for dialysis cannulation. One big vessel is far more usable than several smaller channels. Ligation of these branches through small incisions under local anesthesia can be safe and effective in redirecting blood flow in a more desirable direction. Caution should be exercised, however: multiple prominent branches should raise the question of whether there actually is a viable central channel, or whether there is an obstruction in what seems to be the main vessel. In this case, ligating multiple branches creates venous hypertension in the hand, and solves nothing. A careful ultrasound exam, or a concurrent fistulogram performed by the surgeon at the time of ligation provides maximum information, effectiveness and safety.

Once cleared for use, many patients experience a difficult phase as the dialysis personnel "learn the fistula". Infiltrations and problems do occur. Too many problems over too long a time should prompt a re-evaluation of the fistula to smoke out overlooked adverse factors. Ultrasound exam or fistulography may be indicated.

Re-intervention to promote maturation of fistulas should not be regarded as a sign of failure, and no shame should be attached to a corrective procedure. Not all veins are ideal, and not all fistulas develop without help. The patient should be informed of these realities right up front before the first operation is done, and access surgeons should be proactive in monitoring new fistulas and acting appropriately to help them along. The end result - more useful fistulas for dialysis and less complications for the patients - is worth the added effort.



Endovascular Topics: Fourth in a Series

Use of stents in hemodialysis access

In the previous issue (May 2004), we briefly discussed thrombolysis of clotted hemodialysis access. We also noted that it is estimated that 85% of graft and fistula failures are predictable, treatable and hence preventable, yet sometimes they just clot, no matter how careful you are.

What we didn't discuss is that no matter how careful you are, if you are in this field for long you will inevitably get a phone call telling you that the arm graft you declotted last week - the one that looked so good, the one you were so proud of - is clotted again. You will declot the graft again, look for overlooked problems, and hope to find a way to stop seeing that particular patient so often.

I tell my patients I want them to be just like "family", which in my world means I prefer to see them only once a year. To accomplish that, I need to find ways to make my interventions more enduring.

The use of stents in repairing, restoring or normalizing hemodialysis access is controversial. In 1997, the DOQI committee found that the unassisted patency of stents in hemodialysis access was no better than

venoplasty except in cases of elastic stenosis and suggested that stents be limited to surgically inaccessible lesions or where there is a contraindication to surgery (Guideline 19).

Since that time, stent technology has evolved, with dacron-covered stents, PTFE-covered stents, and drug eluting stents either now or soon to be available, and more extensive experience with the use of stents in hemodialysis access. There is now a general consensus that stents are indicated when there is rebound stenosis with more than 30% residual stenosis after balloon dilation, where there is restenosis within a short time period (one to three months) or where there is rupture of a vessel during dilation.

Stents are now being used in more innovative ways - patching pseudoaneurysms in grafts, providing a durable fix in venous anastomotic stenosis, and lining recanalized central venous occlusions with a PTFE-covered channel.

Results are mixed, and depend on many factors. My own experience includes patients whose recurring venous anastomotic stenoses were PTFE-stented up to several years ago, and when re-examined have been

found to be completely clean in the stented areas. Central venous occlusions have also been effectively managed, with preservation of upper-extremity options for dialysis that would otherwise have been lost.

Dacron-covered and bare-wire stents have not fared so well and have required more frequent intervention, or have failed. Nevertheless, it is clear that we have managed to keep many grafts and fistulas functioning well beyond the point that they would have been abandoned or returned to the operating room.

Stents are another tool in the armamentarium of the vascular access provider, and as such can be used wisely in selected circumstances to achieve results impossible otherwise. The injudicious or profligate use of stents will not improve results, and may raise costs.

◆ *To arrange the declotting of a graft or fistula, please contact Michigan Vascular Access.*

◆ *To arrange a presentation of "Endovascular Management of Hemodialysis Access", or "Thrombolysis of Dialysis Access Conduits," contact Michigan Vascular Access.*



EFFECTIVE STRATEGIES FOR IMPROVEMENT IN VASCULAR ACCESS

1. Ultrasound mapping in the surgical clinic and operating room.
2. Looking beyond the dominant arm for secondary fistulas and to find the best vessels.
3. Using a wider variety of fistulas than just wrist and elbow fistulas.
4. Breaking the rules and challenging the usual limitations.
5. Monitoring development of new fistulas and techniques in fistula transposition.
6. Converting grafts to fistulas and converting worn-out fistulas to better fistulas.
7. Digital photo mapping of fistulas to aid dialysis personnel.
8. Monitoring of access to detect dysfunction, guide intervention and prevent loss.
9. Effective surgical and endovascular interventions in the failing fistula.
10. Creation of a coordinated program for vascular access care.

"ACHIEVING THE DOQI BENCHMARK FOR FISTULAS IN HEMODIALYSIS — STRATEGIES FOR 2004"

is a one-hour presentation of 18 strategies and a demonstration of practical surgical techniques to increase the number of fistulas created, matured, successfully cannulated and maintained over time. Surgical examples are drawn from the author's full-time vascular access practice.

For an advance presentation of this talk, contact Michigan Vascular Access at 734.502.1239.

NEXT MONTH!

MONITORING OF AV ACCESS



To be added to the mailing list for Michigan Vascular Access News, simply send your name and address to:

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**Michigan Vascular
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HOURS

MONDAY - FRIDAY
8:00 AM - 5:00 PM

CLINICAL APPOINTMENTS
MONDAY & TUESDAY
8:30 AM - 12:00 NOON

November 2004

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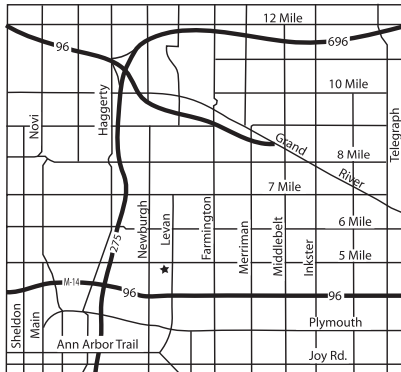
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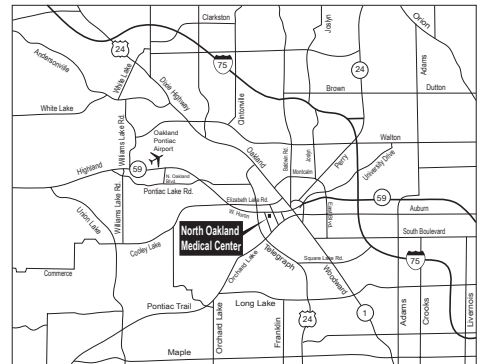
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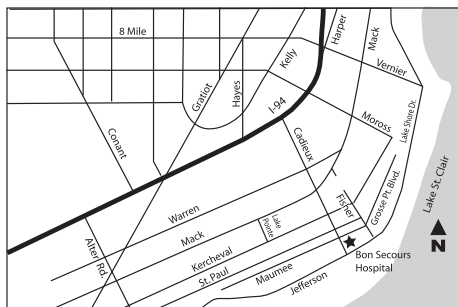
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