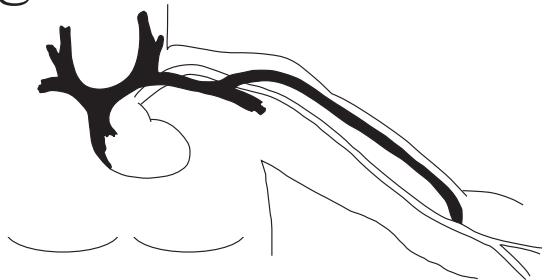


Focusing  
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Access  
Solutions  
for  
Southeast  
Michigan



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

VOL. 1 No. 5

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May 2004

Editor: Marc Webb, MD, FACS

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### PRACTICE NEWS

#### New staff member at Michigan Vascular Access

Lucretia High is joining Michigan Vascular Access as a Patient Care Coordinator this month. Lucretia brings a depth of experience from her previous positions as a hemodialysis technician, as a transplant coordinator, and from working three years in the endovascular lab and clinic of the Henry Ford Hospital Division of Vascular Access.

In her new role as Patient Care Coordinator for Michigan Vascular Access, she will be instrumental 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.

Lucretia will be available during normal business hours.

#### New office location in Southfield

In response to requests to provide a more convenient office location for patients coming from Pontiac, Royal Oak, Southfield, Detroit and elsewhere, the Michigan Vascular Access office will be moving from its current location at the Marian Professional Building at St. Mary's Hospital in Livonia, to The Beacon Square Professional Buildings, Suite Four, at 21701 Eleven Mile Road just east of Lahser Road. This location offers superbly easy access from the Lodge, from the Southfield Freeway, from Telegraph, and from I-696.

The move is expected to take place in early July 2004, depending on completion of construction. Office days and hours (Thursday and Friday

mornings, 8:30 to noon) will remain the same, but expanded consultation hours will be available throughout the week by special arrangement. The scheduling/message number remains the same.

*A locator map will be mailed out in the June edition of Michigan Vascular Access News.*

#### New surgical site for Michigan Vascular Access

Michigan Vascular Access is now offering surgical and endovascular services at St. Mary Mercy Hospital in Livonia for patients on the west side of the Detroit Metro area. St. Mary Mercy Hospital is a full-service community hospital located at Levan and Five Mile Road near the intersection of I-96 and I-275.

Surgical and endovascular services are also offered at North Oakland Medical Center in Pontiac and Bon Secours Hospital in Grosse Pointe.

#### Michigan Vascular Access is now a HAP provider

Dr. Webb has become a HAP provider in the Eastern Shores Network. Patients enrolled in other networks will be seen with or without pre-authorization, and if surgery is recommended, every effort will be made to secure authorization for needed services from the patient's network.

Dr. Webb also participates in Medicare, Blue Cross, and Medicaid. For questions regarding other insurances plans, please call Michigan Vascular Access and leave information for a call-back from our staff. ☎

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

### INSTALLMENT FIVE

#### "Creating forearm fistulas above the wrist!"

The most well known location for AV fistulas is at the wrist. The so-called Brescia-Cimino fistula was the earliest described fistula and is still the gold standard for fistula creation (see the fistula of the month). This fistula provides convenient and comfortable dialysis, preserves all the upper arm options, and should be the first choice where the patient's anatomy permits.

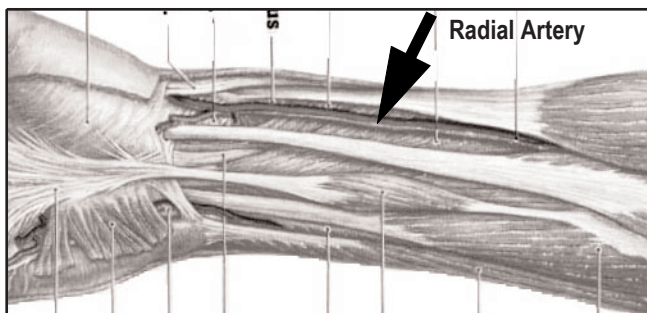
Unfortunately, the vein at the wrist may be too small, or may be damaged from previous intravenous catheters during a hospital stay. In many people's minds, the next option is a fistula at the elbow, so frequently a second forearm option is overlooked.

The cephalic vein receives an important branch from the back of the hand about two or three inches above the wrist. Like the Ohio River joining the Mississippi, the dorsal branch doubles the size of the cephalic vein, and this may be the only place a fistula is possible in the forearm. In my practice, I distinguish between a wrist fistula and a forearm fistula, the latter fistula being created at or above that dorsal branch.

This option may be missed because the veins are deep or otherwise not visible. Ultrasound in the doctor's office (see "The role of ultrasound in

the creation of fistulas" in the February issue of *Michigan Vascular Access News*), or vein mapping in the Vascular Lab can prevent this mistake. Even if the vein is deep, it may become visible once it has grown, may be later moved to the surface (see "Superficialization of fistulas too deep to use" in the March issue of *Michigan Vascular Access News*), or may succeed in building the veins in the upper arm.

The option may also be missed because a radial pulse palpable at the wrist may fade away further up the forearm. The artery may not be palpable two or three inches up from the wrist, but it is still there (see diagram/arrow below). Opening the



fascia (connective tissue layer) next to the brachioradialis tendon reveals the artery. Dividing a couple of branches usually allows the artery to be mobilized enough to be used.

A fistula can even be performed in the mid-forearm by reflecting the brachioradialis muscle slightly to get at the artery. In this situation, only three

or four inches of usable fistula develop in the forearm, and the second needle may need to be placed above the elbow.

Most often, both artery and vein are approached through the same 1 ½ inch incision, but occasionally they are far apart, and two incisions are required. In that case, the vein is brought through a tunnel between the two incisions.

The procedure is done as outpatient surgery, and healing is rapid. The patient is seen at one week, at one month, and at monthly intervals until the fistula is released for use. Forearm fistulas above the wrist are typically larger than standard wrist fistula and are frequently usable within a month of creation. Because the vessels are larger, the risk of failure in the hands of an experienced surgeon is less than with a wrist fistula, reducing futile operations and patient frustration. These forearm fistulas build the cephalic and basilic veins and preserve the options in the upper arm.

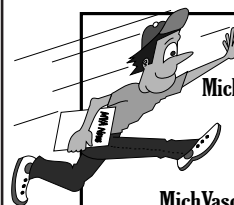
Disadvantages include a slightly more difficult surgery and slightly shorter length.

The forearm fistula may represent the best first step in vascular access for dialysis and should be considered before placing a forearm graft or creating a fistula at the elbow.



### 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.



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

MichVascAccess@aol.com or  
Beacon Square Office Building  
21701 W. Eleven Mile Road, Suite #4  
Southfield, MI 48076  
248.355.1100

## Endovascular Topics: Third in a Series

### Thrombolysis of AV grafts.

In the previous issue, we briefly discussed endovascular maintenance of access. In a future edition, we will discuss monitoring and detection of failing grafts and fistulas. It is estimated that 85% of graft and fistula failures are predictable, treatable and hence preventable.

Unfortunately, in the real world we live in, resources for monitoring are not currently funded by Medicare, the usual payor for most dialysis services. The units that do invest in monitoring must find the funds to provide monitoring at the expense of other needed services. Procrastination and denial on the part of the patients, combined with the many demands on dialysis providers, and uneven experience also contribute to a failure to catch the failing access before it clots.

And sometime they just clot, no matter how careful you are.

So - inevitably - in a dialysis population, a certain number of patients will clot their accesses every day. In the past, this usually meant spending hours in emergency, hours waiting for the surgeon, another and another surgery, and disruption to the personal schedule. Worse yet, the patient could find him or herself with a catheter, and weeks or months of delay until another access is successfully placed and the catheter removed. Fortunately, newer approaches now exist.

Endovascular thrombolysis of dialysis access is an extension of endovascular maintenance of access (see the April issue of Michigan *Vascular Access News*). It is generally an outpatient procedure performed by Interventional radiologists, qualified surgeons, or Interventional nephrologists.

The procedure can take between 45 minutes and two hours, depending on the severity of the problem and the experience of the operator. In general, 85% of clotted grafts can be rescued without open surgery, and the graft is almost always usable the same day.

First, the clot in the graft must be removed or dissolved by one of several means. I prefer mechanical thrombolysis, which consists of grinding up the clot in the graft and then suctioning it out (think "Rotorooter"), but some doctors prefer chemical thrombolysis, in which enzymes are dripped into the clot to dissolve it (think "Draino"). Once the clot is dissolved and removed, a small amount of x-ray dye is injected to examine the graft and find the reason for thrombosis.

Although the problem causing thrombosis of the graft is generally narrowing at the venous anastomosis (seen in 90% of clotted grafts), narrowing in the body of the graft due to frequent punctures, narrowing in the central veins due to previous catheters, and narrowing in the arterial inflow of the graft are also frequent problems, and must be corrected to

achieve an acceptable result. Failure to recognize and correct all the problems can mean that the patient will return sooner than expected with a reclotted graft.

All narrowings are dilated with balloons inserted through the same small punctures used for the thrombolysis and x-ray examination. If necessary, a stent can also be placed if an acceptable result is not obtained (to prop open a stubborn narrowing), or if the graft ruptures during dilation (to patch the leak from the inside). Finally, the clot in the arterial end is removed, and flow restarted. When the result is judged acceptable, the punctures are sutured, and the patient can return to dialysis immediately with a usable graft.

In cases where the access cannot be saved, a catheter placement may be necessary, but valuable information to guide a revision may be gained, making the procedure worthwhile nonetheless.

Endovascular thrombolysis is not simple, and should be attempted only by trained and experienced providers, but it has been shown to reduce unnecessary surgery, provide more timely service and restoration of access, and should be the first resort in patients with clotted access.

- ◆ 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.



### Warning Signs for Grafts and Fistulas

- ❖ Prolonged bleeding from access after dialysis - over 20 minutes.
- ❖ Change from a "buzz" or vibration felt over the graft or fistula to a pounding pulse.
- ❖ More than one episode of infiltration or bruising around the graft or fistula.
- ❖ Poor dialysis (insufficient clearance, recirculation) due to low flows.
- ❖ A trend toward decreasing blood flows in a graft or fistula.
- ❖ Elevated venous pressures on dialysis.
- ❖ Swelling of the hand or arm on the side of the graft or fistula.
- ❖ Development of "new veins" or popping out of old veins.
- ❖ Pain in the graft or fistula.
- ❖ Swellings in the graft or fistula.

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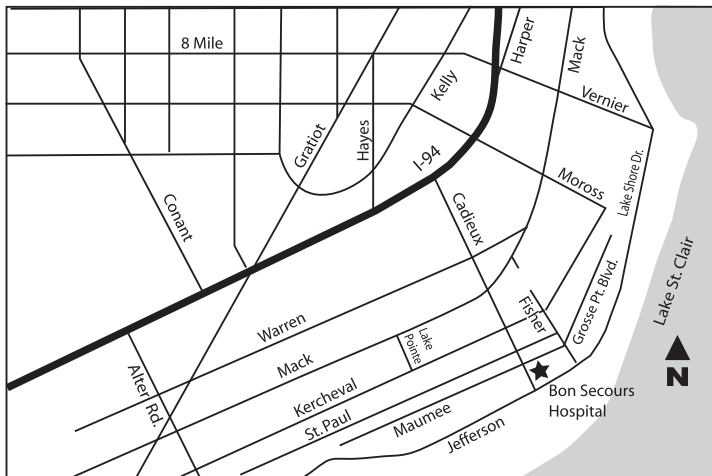
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