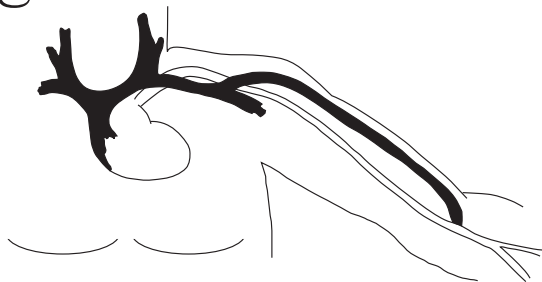


Michigan Vascular Access NEWS

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

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PRACTICE NEWS

New Staff Member

Stacy Lowes joined *Michigan Vascular Access* in December. Stacy brings experience with dialysis care from her previous position as a hemodialysis technician. In her new role as our second full-time Patient Care Coordinator she will be working with Lucretia High to streamline service to the dialysis patient and improve communications with other providers.

Ultrasound-Assisted Digital Photo Mapping

Since moving into our new offices in Southfield in October we have re-emphasized our program of ultrasound-assisted digital photo mapping (see lead article this month and "Fistula of the Month"). Dialysis personnel and patients struggling with fistulas difficult to access may benefit from these diagrams that show where the fistula is and how it runs under the skin. *By appointment during office hours.*

The Lobster Club

"The Fistula of the Month" insert to *Michigan Vascular Access* is intended to be an educational example of what is possible in fistula creation, and is always used with permission. We send a gift certificate to Red Lobster to reward and recognize those patients who generously allow their pictures to be used. If you have an outstanding

example of a fistula and would like to become a member of The Lobster Club, please send your picture (digital preferred) and a signed release for use to *Michigan Vascular Access*.

Michigan Vascular Access News and the "Fistula of the Month"

A monthly newsletter has proven to be difficult to maintain. The *Michigan Vascular Access News* will continue to be produced on an every other or every third month basis.

The "Fistula of the Month" will be sent monthly, either as a part of the newsletter, or separately.

Office Location and Contact Numbers

Our new office in Southfield provides a full-time home for *Michigan Vascular Access*. 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 Eleven Mile Road, Southfield, MI 48076, 248-355-1100 office, 248-355-2717 fax. For a map and printed directions, call *Michigan Vascular Access*.



Achieving the DOQI Benchmark for Fistulas in Hemodialysis: Strategies for 2005

INSTALLMENT SEVEN

"Ultrasound-assisted digital photo diagramming of problem fistulas"

After an arteriovenous fistula is created, it must "mature," and when it is judged mature it is released for use. For many patients, this begins a difficult period in which the dialysis personnel "learn" the fistula. During this process the patient may experience infiltration, difficult cannulation and frustration. After a number of difficult cannulations it is not uncommon for the dialysis personnel to fall back onto reliance on the catheter, or to tell the patient "This fistula is no good." We frequently get a call to replace a difficult fistula with a graft when the dialysis personnel have had too much trouble. For us to say that the dialysis personnel don't know what they are doing is not helpful, and ignores the fact that we are all trying to work together for the benefit of the patient.

In fact, many fistulas do not develop well enough to be used for dialysis. In

my practice, I generally quote a 75 to 80% chance of a fistula developing to the point of being usable. Some situations are more positive, and I have given up to a 95% probability (never 100%), and have offered other, more marginal patients, a 50-50 chance of developing a fistula if the situation warrants. However, if the surgeon feels that a fistula has "matured," it should be usable. Failure to successfully use the fistula may mean that the surgeon's judgment is off, or that additional guidance is needed.

The ultrasound-assisted digital photo diagram can be part of the "users manual" of a fistula, and can help the "user" (dialysis personnel) to use the fistula successfully. Cars come with user manuals, computers come with user manuals, and even toaster ovens come with instructions and diagrams. A life-sustaining vascular access for hemodialysis is no less important.

In our clinic, a digital photograph of the patient's arm is taken and printed immediately on glossy photo paper. The visible landmarks

(operative scars, the elbow crease, etc) on the patient's arm are then labeled on the picture. Using ultrasound, the fistula is drawn on the picture, with depth, width, branches if present and course marked. Areas to cannulate and areas to avoid are indicated. The expectation is that with a better understanding of the fistula, cannulation will be easier for the dialysis personnel, and easier for the patient.

The ultrasound-assisted digital photo diagram does not solve all problems. Some fistulas are too deep, some fistulas require operative or endovascular intervention, some fistulas will never be big enough to cannulate, and some fistulas have insufficient flow from inflow arteries that are just too small. But, a fistula that is converted from a frustrating problem access to a reliable asset after a simple office procedure is a save.

Ultrasound-assisted digital photo diagramming is provided by appointment during office hours at 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 2005"

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 248.335.1100.



Endovascular Topics: Fifth in a Series

Monitoring Dialysis Access — Why, what, how and then what?

All of us have important investments in our lives — homes, automobiles, careers, relationships — whose loss would be a serious blow. To prevent these losses we periodically check up on our investments, and when necessary, re-invest in maintenance, repair or improvements. We monitor the oil and coolant levels in our autos, we keep smoke and monoxide detectors in our houses, we seek performance feedback and mentoring at work, and we pay attention to our loved ones. If something is off, if there is a warning signal anywhere, we act promptly with a back rub, flowers, and a dinner out to prevent loss of an important investment.

Vascular access for dialysis is often only achieved with patient sacrifice and effort. It is not easy to undergo several procedures before a long-term access is achieved, and a well-functioning dialysis access is an investment worth protecting. Unfortunately, like English and Italian sports cars, dialysis accesses can be fickle and tend to break down frequently.

All "permanent" dialysis accesses are prone to failure, and require an occasional "tune-up" or complete overhaul to keep them functioning properly. It is estimated that dialysis patients require between 1 ½ to 2 procedures a year to keep their accesses functioning well. We estimate that 85% of graft and fistula failures are related to correctable narrowings in the access, and that thrombotic events are predictable, treatable and hence preventable. We do not want to procrastinate and end up with a clotted access, a disrupted schedule and an emergency surgery. It is far better to take care of things electively. On the

other hand, because maintenance procedures for dialysis access are invasive (poking, cutting and stitching), and because they are expensive, we would prefer to make sure we are only doing what is necessary. We need some guidance on when to act.

In previous issues we have included "Warning Signs for grafts and fistulas", which represent the problem signs that patients' and their families can watch for. We have many patients who are attuned to their access performance, and call us directly when they see their access failing. They do not want to find themselves on the side of the road waiting for the tow truck.

Anyone who can lay their hand on the patient's arm can make an assessment of dialysis access function — the patient, the family member, dialysis technician or nurse, nephrologist, radiologist or surgeon — and many of the patients with problem accesses are referred for a corrective procedure based on these abnormal physical findings (the "Warning Signs for Grafts and Fistulas").

More scientific assessments are available however, and may more accurately determine which patients are at elevated risk of thrombosis. Elevated venous return pressures indicate venous outflow resistance usually due to outflow stenosis. Static venous pressures in the venous end of the graft over 50% of mean systolic pressures are correlated with a quadrupled risk of graft thrombosis in the near future. Identifying these patients and referring them for an elective corrective procedure keeps the patient on the road and out of emergency situations. Intervention with percutaneous transluminal balloon angioplasty or surgical revision dramatically reduces the thrombosis rates and, in some cases, increases graft longevity (Besarab, "Preemptive Access Monitoring and

Surveillance", Vascular Access for Hemodialysis VIII, Palm Springs 2002)

By most accounts, the most sensitive measure of hemodialysis function is access blood flow. Flow rates of less than 600 ml per minute are correlated with a doubled risk of access thrombosis. Declining rates of blood flow are also. The National Kidney Foundation's Dialysis Outcomes Quality Initiative (DOQI) recommendation in 1997 was that monthly measurements of blood flow should be done, and this recommendation has been proven to be reasonable. Monthly monitoring of access flow, coupled with referral for pre-emptive correction, has been shown to reduce days spent in the hospital, missed dialysis treatments, and catheter usage, as well as overall costs by 50%. Unfortunately, few dialysis centers have invested in this technology.

Whatever the method of assessing the ongoing status of a dialysis access, an important truth is that all "permanent" dialysis accesses are prone to failure, and require an occasional "tune-up" or complete overhaul to keep them functioning properly, just as a Yugo, Chevy or Mercedes require maintenance. Failure to follow a sensible maintenance schedule makes us vulnerable for a breakdown, and exposes us to possible loss of this important investment.

- ◆ 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.



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

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21701 W. Eleven Mile Road, Suite #4
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248.355.1100**

**Michigan Vascular
Access, PC**

Focusing
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HOURS

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

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

January 2005

HOSPITALS

Bon Secours
468 Cadieux Road
Grosse Pointe, Michigan 48230
313.343.1000

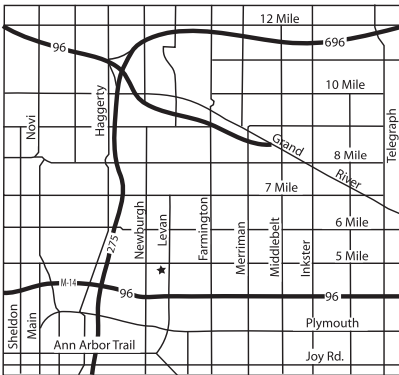
North Oakland Medical Center
461 W. Huron Street
Pontiac, MI 48341-9906
248.857.7200

Providence Hospital
16001 West Nine Mile Road
Southfield, MI 48075
234.849.3000

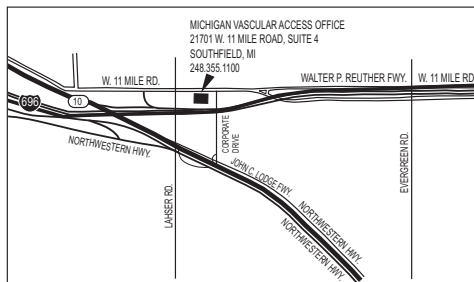
St. Mary's Hospital
36475 Five Mile Road
Livonia, Michigan 48154
734.655.4800

William Beaumont Hospital
3601 West 13 Mile Road
Royal Oak, MI 48072
248.898.5000

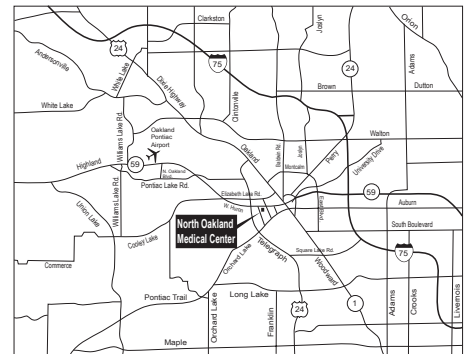
St. Mary's Hospital Marian Professional Building



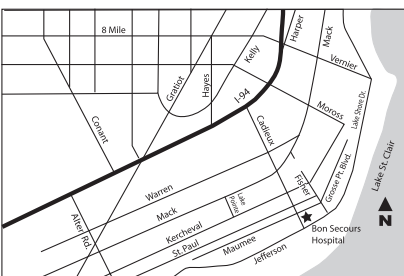
Michigan Vascular Access Office



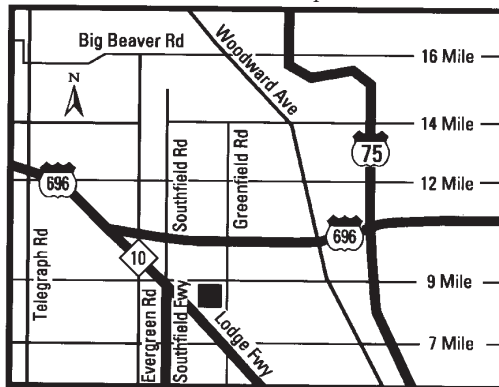
North Oakland Medical Center



Bon Secours Hospital



Providence Hospital



William
Beaumont
Hospital
Royal Oak

