



BY KEVIN FRYLING

Outreach through OUTCOMES

MICHAEL VASQUEZ, MD '90, IS HELPING TO PUT BUFFALO HEALTH CARE ON THE MAP

Michael Vasquez, MD '90, RECALLS HOW ONCE WHEN HE WAS A BOY, HIS MOTHER, CAROL, AN OPERATING ROOM NURSE, DROPPED HIM OFF AT ST. JOSEPH HOSPITAL IN CHEEKTOWAGA, NEW YORK, SO HE COULD BE WITH HIS FATHER, ANIBAL, A SURGEON IN THE EMERGENCY ROOM.

THAT MORNING, IN THE RUSH OF THE ER, THE SEEDS OF HIS FUTURE CAREER WERE PLANTED, SAYS VASQUEZ, WHO TODAY IS A VASCULAR SURGEON WITH A GROWING INTERNATIONAL REPUTATION FOR HIS EXPERTISE IN PERFORMING AND TEACHING A NEW METHOD OF TREATING VARICOSE VEINS.

“The health-care professions have always been in my psyche,” HE SAYS. “I’LL NEVER

FORGET THOSE OCCASIONS WHEN I WOULD GO TO THE HOSPITAL AND WAIT FOR MY FATHER IN THE EMERGENCY ROOM, WATCHING HIM SUTURE—EVEN HAVING THE CHANCE TO WATCH HIM DO A FEW PROCEDURES. IT WAS JUST FASCINATING. I CAN HONESTLY SAY THAT I KNEW AT THAT YOUNG AGE THAT THERE WAS NOTHING ELSE I WOULD RATHER DO.”

But it wasn’t until after his graduation in 1986 from Duke University, where he majored in religious studies, that Vasquez began pursuing his medical ambitions in earnest, enrolling in the UB School of Medicine and Biomedical Sciences and deciding to specialize in surgery after completing his rotations at Buffalo General Hospital.

“I tried to embrace the majority of my rotations with an open mind,” he says, explaining that, at the time, he also had an interest in cardiology. “But when I did my surgery rotation, I really felt most at home—like I had walked in the front door.”

THE NEED FOR CHANGE

As a general surgery resident in Buffalo, Vasquez saw many patients who required vascular surgery, a reflection of the fact that the city’s rate of cardiovascular disease was, and remains, one of the highest in the country. But it wasn’t until he joined a local group of vascular surgeons that he says he came to realize the extent to which the treatments for venous disease, particularly varicose veins, had remained all but unchanged since the 1950s.

“At that time I was a part of the Buffalo Medical Group as the junior attending surgeon,” he says, “so I would do most of the vein patients because those were the cases the senior attendings didn’t want very much.”

ABOVE LEFT: Michael Vasquez, MD '90, clinical assistant professor of surgery

which a long catheter is threaded up into the vein.

“You then tie sutures to the top and bottom of the vein and strip,” he says. “There are blood vessel attachments in the middle of the leg that get torn off—for lack of a better description.”

Patients undergoing the procedure are at risk of incurring long-term nerve damage, and most require several days of hospitalization due to postoperative pain and bruising, with full recovery taking several weeks or more.

Over time, the experience of performing this operation on patients became the motivating force behind Vasquez’s extensive and successful efforts to introduce a new approach to the treatment of varicose veins.

The new procedure, which is a much less invasive option and requires only a local anesthetic, is called The Closure® procedure. It was developed by VNUS Medical Technologies and involves the following steps: First the diseased vein is mapped using ultrasound imaging. Next the surgeon inserts the catheter into the uppermost segment of the vein and then activates a radiofrequency generator. This causes electrodes at the tip of the catheter to heat the vein wall, which in turn shrinks the vein. As the catheter is withdrawn, the vein is closed over an extended length.

And the reason why no one (or at least no one with a choice in the matter) was interested in treating these patients was because the standard of care at the time for venous reflux—the underlying cause of varicose veins—was “vein stripping,” a procedure, which, while effective, was also “pretty crude in terms of vascular surgery,” notes Vasquez.

Venous reflux develops when the valves in major vessels in the legs, which normally force blood up toward the heart, malfunction and allow blood to flow backward and pool in branching vessels, which causes throbbing and chronic pain.

Removal of the compromised superficial veins (“stripping”) addresses the problem by causing the blood flow to be rerouted through healthy deep veins.

Vasquez explains that the stripping procedure takes place usually while the patient is under general anesthesia and involves making several incisions near the groin and upper calf, after

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PHOTO BY DOUGLAS LEVERE

THE CLOSURE® PROCEDURE

Figure 1.
Disposable catheter
inserted into vein



Figure 2.
Vein heats and collapses

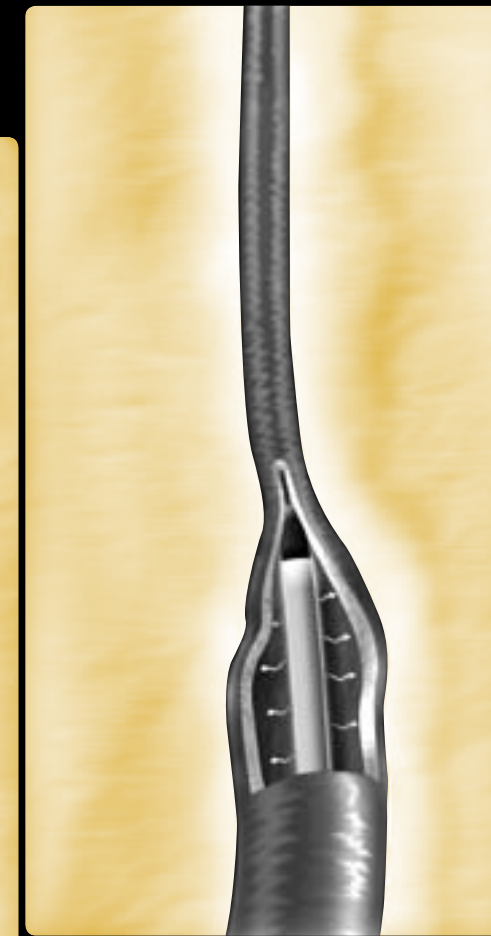
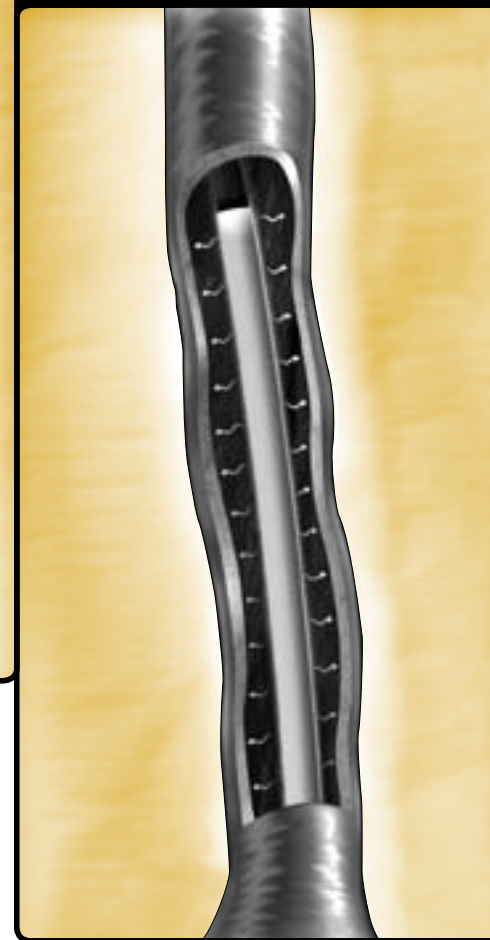


Figure 3.
Catheter withdrawn,
closing vein

Images courtesy of VNUS Medical Technologies Inc.

On average, the procedure takes about 30 minutes and once completed, has about a 94 percent success rate.

"This new procedure is really quite elegant," says Vasquez, who started performing it in 2002, only three years after it was approved by the Food and Drug Administration for use in the United States. "You get the same effect as vein stripping, but with a minimally invasive technique."

Vasquez performs the procedure in his own office as an outpatient treatment; no hospital stays are required, and most patients return to normal activity the next day.

"When I started offering this new procedure, people were coming out of the woodwork to have it done," he notes.

In fact, Vasquez says there was so much interest in the procedure shortly after he started to offer it, that he had to limit the number of his vein patients in order to make sure he had time for patients who needed other types of surgeries, such as bowel resections, hernia repairs, gall bladder and carotid surgery, all of which he also performs regularly. So popular was his introduction of the new treatment that *Buffalo Business First*, a newspaper focusing on business and innovation in Western New York, presented him with a Health Care Heroes Award in 2004.

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TREAT AND PUBLISH

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Vasquez says that when he first received approval to begin performing this new treatment in Buffalo, Merrill T. Dayton, MD, professor and chair of the UB Department of Surgery, strongly encouraged him to track his patients' outcomes in order to determine if the procedure was in fact an improvement over the then-standard procedure of vein stripping and ligation. Using a preexisting scoring system validated by the American Venous Forum, Vasquez surveyed about 500 patients who came to his office for the treatment of 682 limbs in the first year and a half alone. The resulting study was published in the *Journal of Vascular Surgery* in May 2007.

"I was the first to use [the scoring system] in such a large patient cohort," says Vasquez, whose paper caught the attention of vascular surgeons across the U.S. due to the number of patients it involved and the quality outcomes it reported.

To gather the data, interviews were conducted prior to the procedure and then four days, four weeks, four months and a year after treatment.

Nearly everyone surveyed reported significant improvement in all aspects of recovery, including reductions in pain, vein size, swelling, pigmentation, inflammation, hardness, and ulcers or open sores on the leg.

THE INTERNATIONAL STAGE

As a result of his work, Vasquez was invited to speak at the American Venous Forum in Charleston, South Carolina, in February 2007, and was asked to present to the European Venous Forum in Istanbul, Turkey, in June 2007.

"Presenting results at one of the most important national vascular meetings and getting his work published in one of the most respected vascular journals are remarkable accomplishments for a private practice surgeon who receives no reward other than his own satisfaction for participating in this academic activity," says Dayton. "I'm very proud of

Dr. Vasquez and feel that he brings real credit to the UB Department of Surgery."

For his part, Vasquez says performing academic research while also maintaining a busy private practice is a challenging but highly rewarding activity, especially since varicose veins can have such a negative impact on quality of life for those who suffer from them. Aside from physical embarrassment due to cosmetic concerns, he says people with the condition frequently experience disabling pain, fatigue, ulcers on their legs and have a sense of "heaviness," which his patients have described as similar to carrying a large weight all of the time. He says that the relief of his patients is clear from the number of personal cards and letters he has received from them after treatment.

Furthermore, individuals with serious cases of varicose veins also carry a slightly increased risk for more serious, life-threatening forms of venous dis-

ease, such as venous thromboembolism (VTE), a disease that includes deep vein thrombosis, and pulmonary embolism.

Last year, Vasquez had an opportunity to educate the public about these larger concerns when he was invited to participate in a panel on VTE before the National Press Club. He was selected to serve on the panel due to his position as an inaugural member of the Venous Disease Coalition, an extension of the Vascular Disease Foundation, which was established last year to help raise awareness about the threat of VTE. This activity helped spur the U.S. Surgeon General to issue a "call to action" regarding VTE in September 2008.

In 2007, Vasquez also was invited to present the results of his research at a number of other events, including the New Cardiovascular Horizons conference, the VEITHsymposium and a meeting of the Eastern Vascular Society.

"I've had the pleasure of sharing the podium in many national and international meetings with Dr. Vasquez," says Rajagopalan Ravi, MD, director of the

Vein Center at Arizona Heart Institute, host of the Arizona Heart International Congress, before which Vasquez also has spoken. "He's an excellent speaker and educator who's widely sought out in many distinguished gatherings of experts in the care of vascular diseases. His ability to assess the results of treatment is internationally acclaimed."

Most recently, Vasquez spoke before the World Congress of the International Union of Angiology in Greece. For that conference, he brought along his family—his daughters, Jessica, 18, Olivea, 10, and Isabela, 8; and his wife, Melissa, a nurse anesthetist—and took some time away from his work for a family vacation.

Vasquez's forthcoming projects include several more academic publications, including a follow-up article to his first paper about the introduction of The Closure procedure to Buffalo. His review article of the various systems available for the assessment of venous patients, titled "Venous Clinical Severity Score and Quality-of-Life Assessment Tools: Application to Vein Practice," recently was accepted for publication in the international journal *Phlebology*.

"It's just been amazing how this whole world [of venous disease] has opened up before me," says Vasquez, who recently hired a full-time research assistant to help him keep up with his publication efforts. "It's been exhilarating for me to contribute on this level. It's uncommon for a private practitioner to get published in a major academic journal.

"And since I've come to realize that I'm not just affecting my own patients, but also a much larger population of patients through my research, it's become something I have to do. It's almost a calling." **BP**