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Bringing specialty care to Central America

A mission to treat vein disease in Honduras

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Waiting room at La Ceiba clinic.

We were awakened early by the sound of roosters and the chatter of local tourists on the beach outside our hotel in Tela, Honduras. Our group of about 35 physicians, nurses, and support personnel had arrived the previous night, following a two-hour bus ride from the tiny San Pedro Sula airport. While eating our breakfast of red beans and scrambled eggs, we could only guess what awaited us at La Ceiba, the coastal city (pop. 250,000) on the Caribbean that was to be our final destination. We hoped to arrive by afternoon to unpack supplies and set up our clinic. We would spend two days getting oriented and organized and five days seeing patients in a makeshift, MASH unit-style clinic.

The mission, organized by the Hackett-Hemwall Foundation, of Madison, Wis., had made many trips to Honduras in the past 30 years to treat a variety of health issues. This trip, however, was only the third to bring specialists to treat vein disease. Having worked with the Indian Health Service before, and having experienced first-hand the face of poverty in our travels to other countries, we were receptive to the invitation to join this mission.

This first stop, in Tela, provided a place to meet with the other vein specialists (phlebologists). They had varied backgrounds, including vascular and general surgery, internal medicine, and interventional radiology. The diverse medical staff had come from across the U.S., as well as Canada and the Netherlands. During our orientation we were divided into two teams. One team would stay in Tela, and our team (of 18 personnel) would travel the winding countryside to our assignment in La Ceiba. The Hackett-Hemwall Foundation had delivered pallets of medical supplies to both locations.

Honduras, a Spanish-speaking country bordered by Guatemala on the north and Nicaragua on the south, is about half the size of Minnesota, with a population of over 7 million. Though Honduras is quite mountainous, we could see the effects of deforestation, with much of the area planted to pineapples, bananas, and sugar cane, and plantations of African palm. Poverty is prevalent; many rural families live in one- or two-room huts with dirt floors.

The clinic in La Ceiba

The Honduras Red Cross clinic where our team treated patients consisted of a rectangular, 600-square-foot room. Late Sunday, we set up seven treatment stations by interconnecting a system of poles draped with sheets. Each makeshift room had a Mayo stand with supplies, a portable ultrasound machine (loaned by Sonosite and Terason for the trip), and (not enough) stepping stools. The padded exam tables, simply handcrafted from plywood and 2 x 2 planks, had received a coat of fresh white paint.

At one end of the room, the lead nurse, students, and staff family members sorted through open boxes of supplies, organizing a long table of the equipment we would need to treat patients. Beyond this room was an adjoining space that would serve as the patient waiting room. For the next five days, this waiting room remained full.

From the waiting area, a larger set of doors opened into the courtyard, where typically about 200 women stood each day. Many arrived as early as 3 a.m. in hopes of receiving care that day. Each time the courtyard door cracked open, patients clamored to be admitted. We had a list of patients who signed up each day, but the crowd grew far beyond that list.

It was always difficult to stop working at 5:30 p.m., when the van arrived for our ride back to our lodging. Although the crowd seemed to fade away about the time our transportation arrived, we were never quite certain if we had seen everyone or if the patients had just disappeared until the next day.

Treatment stations

We saw 854 patients in five days at our clinic in La Ceiba. At each of the seven stations, patients were escorted by a Honduran student/interpreter after being evaluated at the triage station. The students, 10th- and 11th-graders from a local high school, provided excellent translation and an additional hand. They obtained clinical histories at the bedside and assisted with diagnostic ultrasound, and several students became adept at assisting with patient treatments. Following physician treatments, dressings were applied and translated instructions were provided. Many times the physicians worked with minimal or no assistance, and we quickly sharpened our bilingual skills.

Our reward was the grateful thanks of our patients, who often showered us with affectionate hugs or kisses. While adequate medical care is avail-

Medical mission volunteers in La Ceiba.

Grace, Jackie, and Ann in patient treatment area.

able to those with the means to pay, many of these urban and rural poor patients had very limited access to medical care. After they left the clinic, most patients had to negotiate a return to their homes—a six- to ten-hour trip in many cases.

Jackie spent Monday night triaging within the waiting area and courtyard to identify patients with more advanced and severe venous disease. It was harrowing to see the vast numbers of vein-related ulcerations among the many other symptomatic varicosities. Patients with ulcerations and other skin changes were given treatment priority. After the first three days, our supplies began to dwindle, so we did our best to improvise and smile through our feelings of frustration.

Our station team (the two of us and a student interpreter/assistant) treated at least 20 patients our first day. The clinic recorded seeing 184 patients on day one. On subsequent days fatigue started to set in, but we still saw about 150 to 160 patients each day. The most common complaints were leg pains, swelling, bulging veins, and both healing and open ulcerations.

Vein diagnosis

Nearly any abnormality of venous circulation will ultimately result in the development of varicose veins. Varicose veins are nothing more than superficial veins that have dilated in response to increased pressure and turbulence. Increased pressure can enter the superficial veins by failure of key valves at any point of communication between the deep and superficial systems, or in tributaries. Commonly affected are the greater saphenous vein, which courses medially in the lower extremity, and the small saphenous vein, which runs behind the calf. One need only look at the patient's legs to see if there is a potential problem, with patients noting that a varicose vein is "growing down the leg" or "growing up the leg" toward the groin.

Up to 50 percent of patients with varicose veins have secondary cutaneous abnormalities, related to progressive syndromes of chronic venous stasis and chronic venous hypertension. The venous disorders that a phlebologist normally treats are graded according to the CEAP (clinical, etiological, anatomical, pathophysiological) classification scale. Clinical signs are graded from 0 to 6, with 0 representing no visible or palpable signs of venous disease and 6 representing active ulceration. In Honduras, we treated a disproportionately large percentage of patients with grade 4 (skin changes, such as hyperpigmentation and venous dermatitis) through grade 6 disorders. This phenomenon likely was related primarily to the lack of medical care, on top of a genetic predisposition.

Upon arrival at one of the medical stations, patients with varicosities had an ultrasound examination to determine the source of their problem, i.e., was the varicosity due to a saphenous or non-saphenous cause? The ultrasound examinations were done by the physicians in most cases, though at our station we were able to move more efficiently, with Jackie doing the ultrasound evaluations.

Treatment

In the U.S., varicose veins and venous incompetence may be treated surgically or non-surgically. Before the development of minimally invasive techniques, high ligation and stripping techniques relegated venous surgery to the operating room. In the late 1990s, development of endovenous ablation of saphenous veins resulted in outpatient treatment of varicose veins, done with local anesthesia and minimal sedation. Since then, endovenous ablation using radiofrequency or laser has been carried out not only for saphenous veins but also for major tributary veins, as well as for larger surface veins. However, in Honduras, these newer, less invasive ablation procedures are financially out of reach for the vast majority of patients. Our specialty vein clinic therefore provided advanced treatment for varicose veins with the use of ultrasound-guided foam sclerotherapy (described below).

The endovenous and surgical procedures are often complemented by the use of sclerotherapy. Injecting the sclerosant solution into the lumen of the vein causes endothelial necrosis and fibrosis of the vein. Sclerotherapy is a useful adjunct to large-vein surgery as well as a highly effective primary treatment for spider veins. Although smaller branch veins can be removed by stab avulsion (phlebectomy), sclerotherapy presents a rapid and effective alternative.

A technique called foam sclerotherapy makes it possible to treat larger varicosities, such as saphenous truncal incompetence. This form of sclerotherapy involves mixing a detergent solution with a gas and using ultrasound to guide the delivery of the foam sclerosant. Foam sclerotherapy allows better contact between the sclerosant detergent and the vein wall, resulting in spasm and subsequent closure of the vein. In previous visits to Honduras by the same group, the use of foam sclerotherapy to treat saphenous disease had been shown to be effective in treating even advanced disease such as venous ulcers. Moreover, the treatment is relatively inexpensive to produce and administer.

John Bergan, M.D., a renowned vascular surgeon and editor of the journal *Phlebology*, has commented that "the prolonged care of venous ulcers can be erased for the cost of a cup of coffee." Our observation of patients—especially those previously treated with sclerotherapy—validated this view.

Winding down

On Friday, our fatigued medical team began dismantling the clinic. Everything from pole structures to beds and Mayo stands was disassembled and placed in boxes to be transported off-site and stored for the next mission. Only dust and a few tables remained in our rectangular room when we finally closed the door.

Later, we joined the group from Tela and spent the evening comparing our medical adventures over good food and delightful and unexpected native entertainment. In five days, between the two clinics, we had treated over 1,400 patients—an average of 61 patients per physician in five days. Many physicians felt they had provided relief for patients in need of care. Many also felt frustrated with the poor follow-up care, diminishing medical supplies, and lack of teaching opportunities and interactions with local physicians.

Nearly all the medical personnel expressed a desire to return in March 2008. We, too, look forward to returning to provide much-needed vein care, and to rekindle friendships in this impoverished yet culturally rich land.

Primepares G. Pal, M.D., *and* **Jacqueline S. Pal, C.N.P.**, *own and established the Minnesota Vein Center, P.A., in North Oaks.*