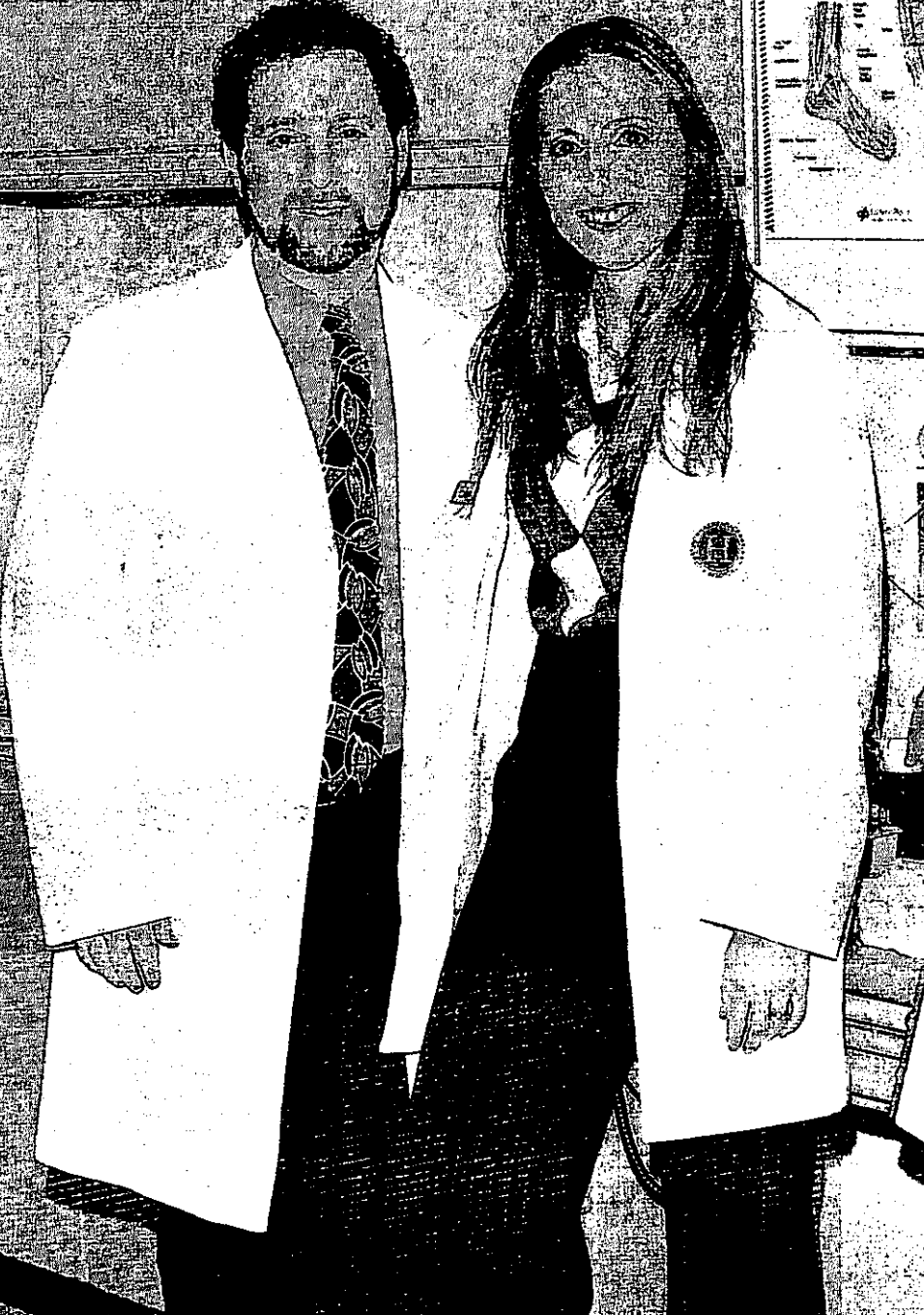


M.D. NEWS

A BUSINESS AND LIFESTYLE MAGAZINE FOR PHYSICIANS



Podiatry Foot & Ankle Institute

Leaders in Providing Comprehensive Medical and Surgical Treatment for the Lower Extremities

Leaders in Providing Comprehensive Medical and Surgical Treatment for the Lower Extremities

By Drs. Gooppers

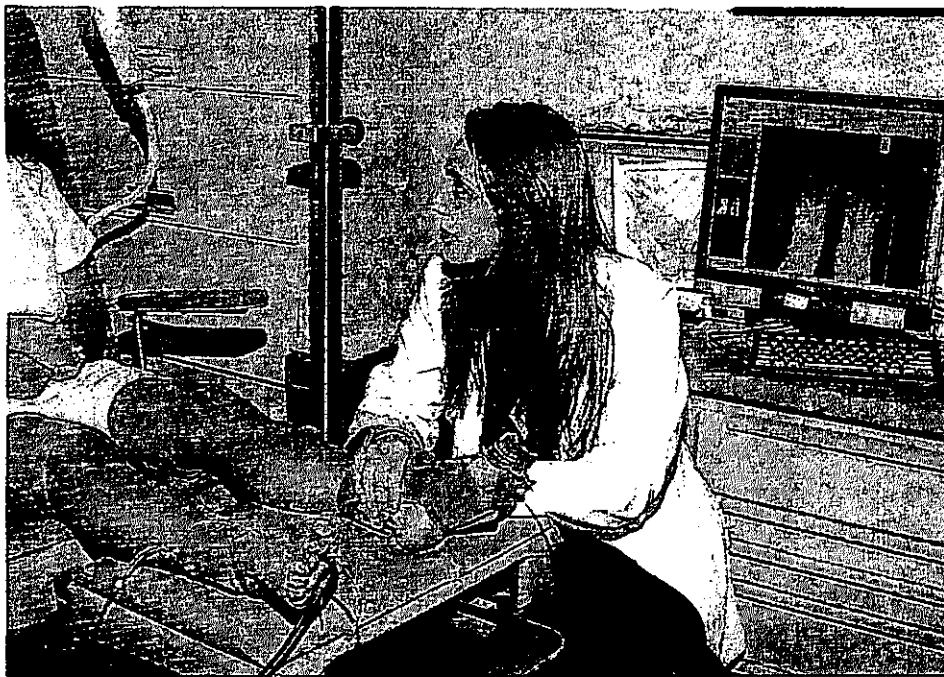
In today's fast-paced world of working hard in our daily jobs and playing hard during leisure time, maintaining the health of our feet must be included in our overall health care regimen. Whether a foot is injured during the course of activity or becomes diseased as a result of a medical condition, the impact on a patient's quality of life can be devastating. When an individual develops a foot problem, he or she may not be sure where to turn. Often, patients will consult with their primary care physician who will then make a referral to a podiatrist, a physician who is specifically trained to medically and surgically treat disorders of the foot, ankle and lower extremity. Podiatry has evolved considerably over the years because of the extensive training podiatry residents receive and because of the advanced technology that is currently available. Many of the procedures performed by podiatrists today are quite complex, including some very intricate surgeries. Unlike other specialties, which attract considerable media attention, podiatry may be less familiar to the general public but is nevertheless an integral part of our health care system.

Serving patients in Northern New Jersey, Podiatry Foot & Ankle Institute is an excellent example of a podiatric practice that is dedicated to addressing the entire gamut of foot and leg care. Whether treating bunions and other common foot problems, closely following diabetics to prevent and treat the many foot and lower extremity-related complications of that disease, diagnosing and treating injuries to the foot and ankle or performing complex reconstructive surgeries to correct congenital deformities, Podiatry Foot & Ankle is equipped with the most innovative technology and has extensive experience which places it at the forefront of its field. Located in the Hackensack University Medical Plaza and under the direction of Edward I. Harris, D.P.M. and Antonella Cella, D.P.M., M.S., Podiatry Foot & Ankle is providing state-of-the-art care to its many patients.

Some of the common foot disorders seen by Drs. Harris and Cella are bunions, hammertoes, metatarsal abnormalities, heel pain, nerve entrapment syndromes such as Morton's neuroma or tarsal tunnel syndrome, arthritis and toenails that are either ingrown or fungal. Many

The entire staff of the practice is focused on providing a comfortable experience to their patients.





The SensiLase System allows Drs. Harris and Cella to assess micro and macrocirculation in ways that other diagnostic tools do not. The system helps the doctors to predict which patients are appropriate candidates for surgery.

of these conditions can be treated noninvasively with a combination of proper daily foot care, medication, orthotics and/or periodic in-office procedures to relieve symptoms. For some patients with these conditions, surgery may be of great value in correcting long-standing pain and irritation. Some of these surgeries include neuroma resection, tarsal tunnel release, fusion procedures for degenerative joint arthritis and surgeries to treat midfoot, metatarsal or toe deformities and foot ulcers.

Diabetics, in particular, are prone to problems in their lower extremities. In the United States the numbers of people being diagnosed with diabetes each year is staggering. Obesity, which causes elevated glucose levels, is dramatically on the rise as a result of poor eating habits and lack of exercise. Patients are being diagnosed at younger ages than ever before and health care providers are facing the challenge of treating this disease aggressively in order to prevent or delay the serious complications associated with diabetes. For example, almost two-thirds of people with diabetes have mild to severe nerve damage. This causes diminished feeling in the feet and patients may not be aware of cuts, scratches and breaks in the skin. Left untreated, these wounds can lead to infection. Because many diabetics suffer from circulatory problems, reduced blood supply to the feet makes many diabetics prone to "diabetic foot." This refers to the cycle of skin breakdown, ulceration, necrosis and bone infection that can lead to amputation and/or the spread of infection to other parts of the body.

Dr. Harris and Dr. Cella see many patients

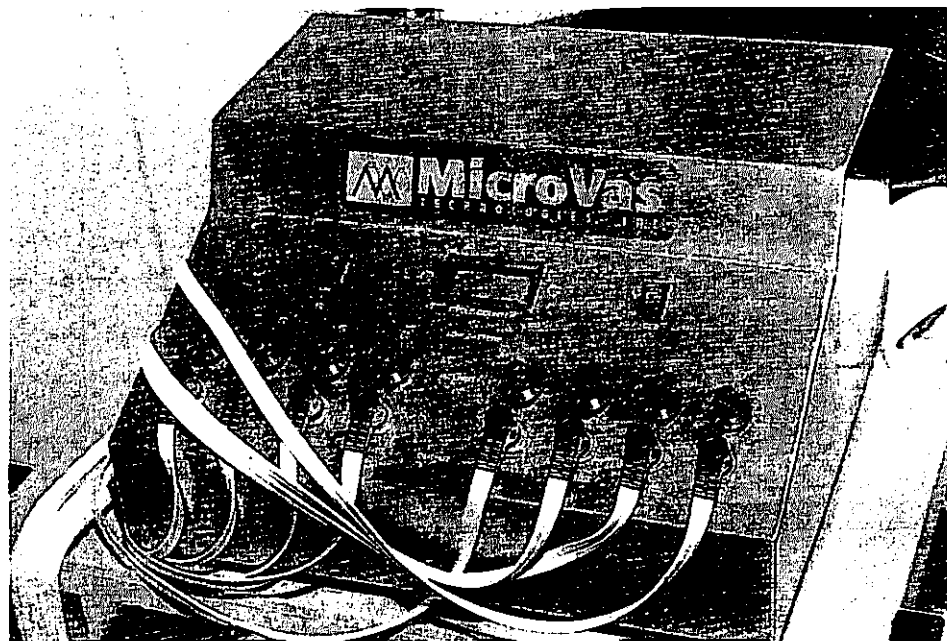
who come to them for treatment of disease related complications ranging from initial skin breaks to necrosis and severe bone infection. Unfortunately, for some patients the physicians at Podiatry Foot & Ankle are forced to perform open surgeries including limb-salvaging procedures such as amputations at different levels of the foot. However, their use of innovative technology is making it possible for some patients to be spared from undergoing invasive surgeries and amputations. Of all the possible mechanisms in the pathogenesis of wounds, ischemia and the hypoxia it causes are the largest obstacle to healing.

Patients who are seen at Podiatry Foot & Ankle for circulatory insufficiency and wounds that don't heal properly may be treated with MicroVascular Therapy (MVT) which is a physical medicine modality that works directly and mechanically to elevate blood flow through neuromuscular stimulation

of the venous muscle pump. This system generates ionic impulses that pass through the body, or an extremity, using strategically placed carbon emitter pads. The ionic impulses pass completely through the limb or body, creating circulation in the treated area through neuromuscular stimulation of the venous muscle pump and by increasing the rate of the metabolic process. MVT increases blood flow and tissue oxygenation, which dramatically accelerates the wound healing process. Soft tissue injuries heal faster and rebuild muscle fiber better with adequate oxygen and nutrients.

MVT administered by Dr. Harris and Dr. Cella has demonstrated remarkable efficacy in the treatment of difficult, long-term, non-healing ulcers. Additionally, patients with poor circulation, vascular

The MicroVas is used to mechanically elevate blood flow through neuromuscular stimulation of the venous muscle pump.



insufficiency and neuropathy see marked improvement after undergoing this treatment. In cases of infection, a large part of the efficacy of neuromuscular stimulation lies in the fact that it improves arterial circulation and delivery of antibiotics to the wound area. Dr. Harris shared the case history of a diabetic woman who had already lost all of the toes on one foot and was now quite close to an amputation from the middle of her calf. "After treatment with the neuromuscular stimulator, circulation in the leg was increased to the point where amputation is no longer necessary," Dr. Harris explained.

Neuromuscular stimulation is also used at Podiatry Foot & Ankle to treat sprains and sport injuries in terms of pain alleviation as well as accelerated healing of inflamed muscle tissue and reduction of swelling. It is also quite effective in the treatment of inflammatory processes such as chronic tendonitis of the foot and ankle.

Another innovative and noninvasive procedure performed at Podiatry Foot & Ankle can assess limb circulation in those patients who are at risk for or known to have circulatory problems. The SensiLase System allows Dr. Harris and Dr. Cella to assess micro and macro-circulation in ways that other diagnostic tools do not. For example, in patients with diabetic foot ulcers and peripheral arterial disease, very often there are no foot pulses and angiograms demonstrate that it is

impossible to get blood to the foot. For these patients, the SensiLase System can tell, with about 90% accuracy, which foot ulcers are likely to heal with good wound care and which are unlikely to heal. The SensiLase System's combination of Skin Perfusion Pressure (SPP) and Pulse Volume Recording (PVR) tests are useful in managing foot ulcers, wounds and other types of symptoms where blood flow in the extremities may be compromised. SPP microcirculatory values measure the health and vitality of capillaries, while PVR macrocirculatory values measure changes in arterial blood volume. This system allows the physicians at Podiatry Foot & Ankle to predict which patients are appropriate candidates for surgery. They work very closely with vascular surgeons to whom some patients are referred as a result of SensiLase testing.

People with certain neuromuscular diseases may also require orthopedic care. Dr. Cella discusses the case of a 14-year-old girl with cerebral palsy who presented to Podiatry Foot & Ankle with a gait that would not lift off the ground when she walked. Additionally, she had a dorsal bunion, meaning her big toe was facing down towards the ground. She required two separate surgeries to correct these problems. During the first procedure, a triple arthrodesis, which is fusion of the subtalar joint, the talonavicular joint and the calcaneal cuboid joint,

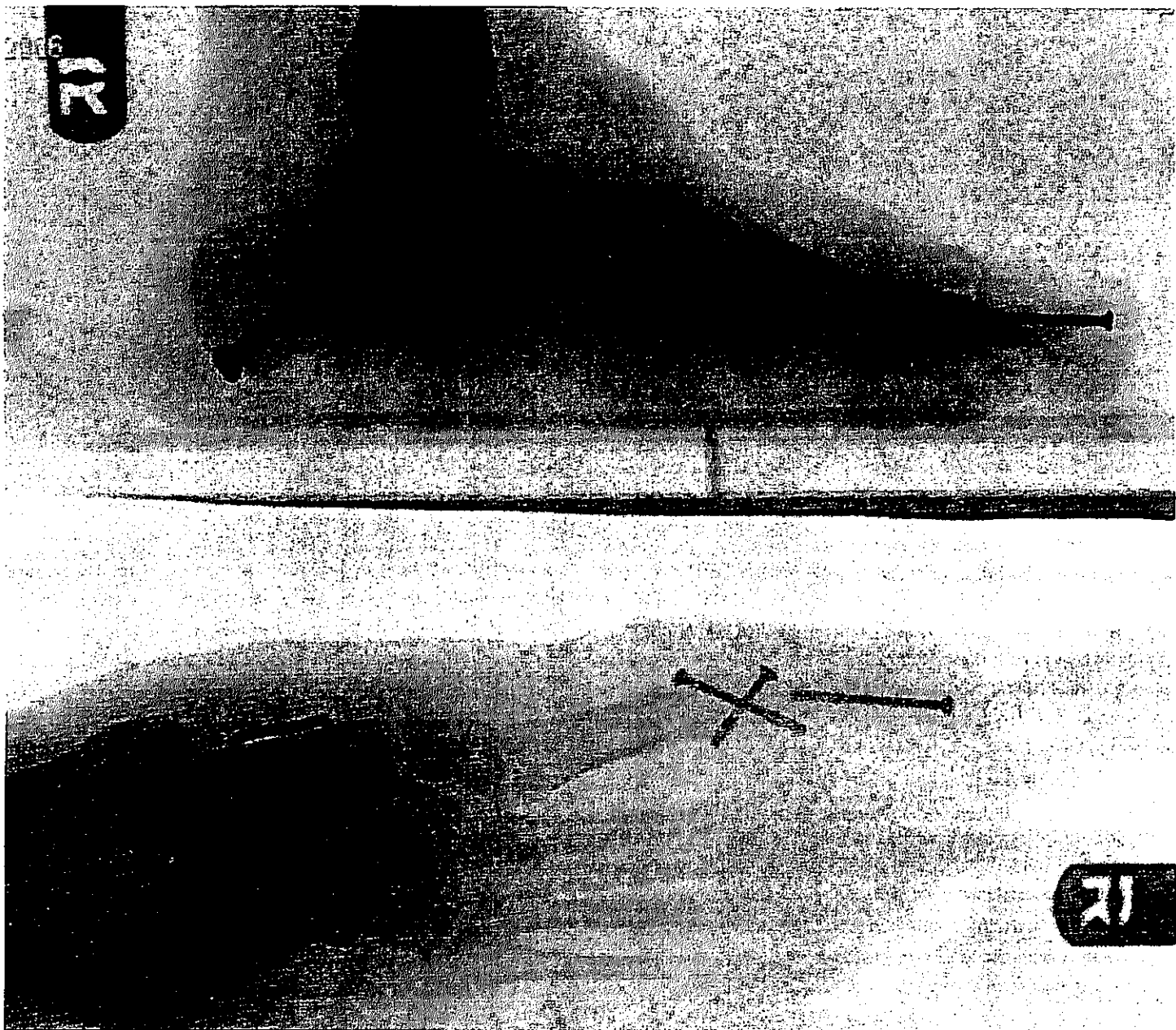
The MicroVas increases blood flow and tissue oxygenation, which dramatically accelerates the wound healing process. This innovative technology makes it possible for some patients to be spared from undergoing invasive surgeries and/or amputations.

was performed. This was done to manage her unstable joints and address the deformity of her foot. Also, because of the cerebral palsy, the posterior tendon muscles were tight and had to be lengthened. Additionally, the posterior tibial muscle in this patient was overactive and a tendon transfer was accomplished as well, allowing the tendon to be rerouted into the dorsal bones so that it could now act to lift the foot off the ground. Physical therapy was then needed to retrain this muscle. The second procedure consisted of forefoot surgery. Since this patient's big toe was heading down and she was walking on the tip of the toe, a fusion of the proximal interphalangeal and metatarsal phalangeal joints was accomplished. In order to give her foot an arch, an osteotomy was performed in the medial cuneiform with the addition of a bone graft. The result of these complex procedures could not have been more positive. "This patient who could not walk is now dancing," Dr. Cella proudly relates.

In addition to treating those patients with disease-related disorders, the physicians at Podiatry Foot & Ankle see many foot problems that result from congenital deformities. One such condition is brachymetatarsia, which is characterized by an overlying toe on the foot that is actually the result of a shortened long bone of the foot (metatarsal). Although this problem is not usually apparent at birth, it develops over time and presents



PHOTO BY KEEN ALSWANG, AT IJDKAL STUDIOS

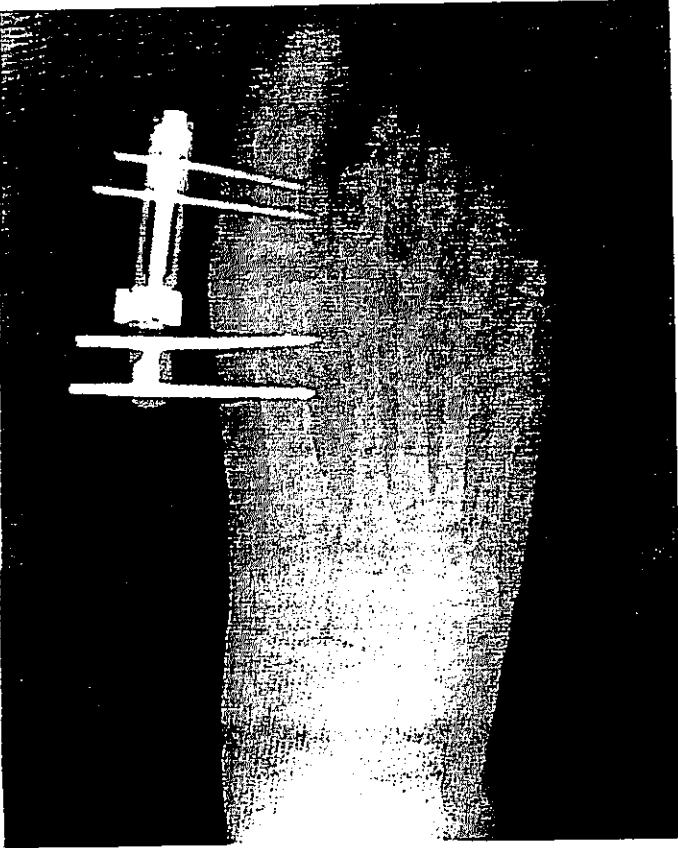


A patient with cerebral palsy suffered from a flat foot that would not lift off the ground when she walked. After two surgical procedures this patient of the Podiatry Foot & Ankle Institute was not only able to walk, but could also dance.

itself between the ages of 4 and 15. Many patients are eager to correct this to avoid embarrassment when wearing open shoes or while barefoot in public places. This can be accomplished by Dr. Harris or Dr. Cella through a procedure that gradually lengthens the bone. In gradual lengthening, a scaffold-like frame, called an external fixator, is attached to the bone with metal pins or wires. The bone is cracked through a small incision; the bone then "rests" for a few days. The patient wears the external fixator until the correction is achieved. The frame creates tension when the patient or family member turns an affixed dial several times daily. The rate of turning is determined by X-rays, which are taken during office visits. The very small amount of tension that the frame exerts on the bone stimulates the bone to grow. This fills the gradually enlarging gap with new bone. The surrounding muscles, nerves, skin and blood vessels also grow. After the bone is lengthened it must heal in the lengthened position. When the

bone strength becomes normal again, the external fixator, pins and wires are removed.

Many of the patients seen at Podiatry Foot & Ankle suffer from disorders caused by participation in sports or other physical activities. One common problem treated by Dr. Harris and Dr. Cella is plantar fasciitis. The plantar fascia is a thick fibrous band that supports the arch of the foot. It extends like a bowstring from the heel to the ball of the foot. It is relatively inelastic and does not stretch very well. Increased tension and overuse causes pulling and irritation at the site where it is attached to the heel. This happens often in people who have structural problems such as high arches or flat feet. Overuse of the feet, as it happens in those who are required to stand or walk for great lengths of time on hard surfaces, may make an individual prone to this condition. Also, prolonged participation in sports such as running, racquet sports or golf may contribute to the tension in the



A patient with brachymetatarsia, a condition characterized by an overlapping toe, can be corrected through a surgical procedure that installs a scaffold-like frame called an external fixator, as shown in the X-ray.

plantar fascia and make one more prone to its irritation. Another activity-related problem that is frequently treated by Dr. Harris and Dr. Cella is Achilles tendonitis. The Achilles tendon is the major tendon that attaches the large calf muscle to the heel bone. Achilles tendonitis occurs as pain and inflammation at the insertion of the Achilles tendon. A palpable soreness or bump may be present on either side of the insertion of the tendon and X-rays often show puffing and calcification in the tendon. In both plantar fasciitis and Achilles tendonitis, treatment is aimed at reducing the pressure and inflammation to the area.

One innovative treatment offered at Podiatry Foot & Ankle for chronic heel pain associated with both of these conditions is Extracorporeal Shockwave Therapy (ESWT). This noninvasive procedure is similar to lithotripsy used in the treatment of kidney stones. ESWT uses shockwaves generated from a special device focused on the targeted tissue. The shockwaves are delivered outside the body to trigger an individual's own repair mechanisms. The concept behind shockwave therapy in tendon disorders is that the shockwave encourages revascularization and other elements necessary to advance normal tissue healing. Additionally, shockwaves help to overstimulate pain transmission nerves, which can lead to a reduction in sensitivity and pain. This procedure is performed on an outpatient basis and requires only local anesthesia.

Sometimes injuries are more severe and involve open surgery to repair. Acute ruptures of the Achilles tendon, for example, require the

removal of all frail and necrotic tissue and tendon. The surgeon must then reapproximate the tendon with suture material. Dr. Cella and Dr. Harris relate the case of a patient who ruptured his tendon playing basketball and did not seek medical help until five months later. He was unable to walk and plantarflex the foot. Surgery involved removing all of the necrotic Achilles tendon. Once the tendon is removed, if the deficit is small, then the tendon can be reapproximated with suture material. If, however, the deficit is large, as it was in this patient, another procedure must be used. In this case a V-Y advancement flap was chosen. After exposure, an incision was made in the fascia of the gastrocnemius muscle. An inverted V-cut was made at the musculotendinous junction and was advanced distally to cover the defect. Once sutured, this looks like a "Y," hence the name V-Y advancement flap. A cadaver graft was then applied to the area to reinforce the attached muscle and strengthen the newly created tendon.

Other sports-related injuries treated at Podiatry Foot & Ankle include peroneal tendon tears, forefoot and rearfoot fractures and ankle ligament sprains. The most common injury in sports involves a sprain of the ankle ligaments located on the outside or lateral aspect of the foot and ankle. Although most of these sprains will heal on their own, 20-40% of patients who have complete tears of the lateral ligamentous structures of the ankle will have enough pain and stiffness to considerably limit their activities. The ligament most frequently sprained is the anterior talofibular ligament (ATFL). Dr. Harris and Dr. Cella can initially treat ankle sprains conservatively with protection, rest, ice, compression and elevation. This is done to help reduce the swelling and minimize the pain. Anti-inflammatories are also used to help reduce tissue swelling in the early injury phase. Short-term immobilization in a cast or ankle/foot orthosis is sometimes sufficient to promote the healing process. In those patients for whom conservative care has failed, the physicians at Podiatry Foot & Ankle are able to perform reconstruction using the most current surgical techniques available. In most cases, a modified Brostrom procedure will directly reattach the injured ligaments, ankle range of motion is maintained and stability returned. Improved suture anchoring techniques used by Dr. Harris and Dr. Cella allow patients to resume aggressive activity levels without limitation.

Whether the problem is a relatively simple one, such as a corn, callus or bunion, or there is significant disease, deformity or injury, Dr. Harris and Dr. Cella are capable of providing patients in northern New Jersey with the most technologically advanced treatment available. At Podiatry Foot & Ankle the emphasis is on treating the whole individual. Each patient's medical history is thoroughly evaluated so that appropriate care for each can be effectively planned. With more than 25 years of experience between them, Dr. Harris and Dr. Cella agree that the extensive training they both have received and their continual updating of equipment, procedures and techniques enables them to set the standard for podiatric care. They look forward to the innovative developments that lie ahead and incorporating them into their practice so that they may continue the tradition of excellence for which Podiatry Foot & Ankle Institute is known.

Podiatry Foot & Ankle Institute is located in the Hackensack University Medical Plaza, 20 Prospect Avenue Suite 803, Hackensack NJ 07601. (201) 488-FOOT (3668) www.anklefootdoc.com