



BY JARROD SHAPIRO, DPM

# Missed Diagnoses and Over-Reliance on Imaging

Clinical judgment often trumps diagnostic tests.

*Practice Perfect is a continuing every-issue column in which Dr. Shapiro offers his unique personal perspective on the ins and outs of running a podiatric practice.*

If you've ever been concerned about the value of podiatry in the general medical world and the importance of our knowledge and contributions, let me disabuse you of that concern. Over a little more than 10 years of practice, I've built up a library of ridiculous cases in which patients received incorrect treatment as a result of an overreliance on "advanced" imaging and lack of expertise and clinical acumen.

Over time, I've come to realize that most medical specialties (outside a couple, including podiatry and orthopedics) seem to forget about the body below the perineum. Although unfortunate for patients who are treated by providers with little understanding of the lower extremities, it is mostly an opportunity for us in podiatry. When I lecture to providers outside of podiatry, I end up telling them the simplest form of treatment is simply

referral, and if anyone reading this is not a lower extremity specialist, I strongly recommend referring your patients with lower leg and foot complaints to your local podiatric colleague. The reason for this is simple: Just as with any other medical problem, the current state of knowledge

clinical acumen and overreliance on imaging. Some of the details will be changed for anonymity, but the overall stories are intact.

## Case of the "Bone Scam"

A nurse from a local surgery center presented for a second opinion.

She had obtained a curbside consult from a vascular surgeon at that same surgery center about pain in her big toe joint. For some reason, the vascular surgeon ordered a three-phase bone scan, which showed increased tracer uptake at the big toe joint area. The vascular surgeon diagnosed the nurse with a bone infection and recommended a partial first ray amputation. Smartly, the nurse sought a second

opinion. Knowing the limitations of bone scans (highly non-specific with poor anatomical detail) and a history completely inconsistent with bone infection (she never had an ulcer or other break in the skin), a radiograph was ordered and a cheilectomy with bone biopsy was performed. As all podiatrists reading this have already figured out, the nurse had mild osteoar-

*Continued on page 36*



is too complicated for any one doctor to know it all, and no one can treat those particular disorders better than the people who spend their entire professional lives gaining experience and expertise in that area. For the foot and ankle, that's the podiatrist.

Here are a few clinical examples that cover just one common mistake made by non-podiatric physicians, misdiagnoses caused by a lack of

## Missed Diagnoses (from page 35)

thrititis rather than osteomyelitis. If she had gone with the first recommendation, she would have undergone an unnecessary amputation, and suffered all of the normal post-op hallux amputation sequellae—apropulsive gait, sub two transfer lesion, shoe fitting issues, etc. The vascular surgeon should not have played podiatrist.

### Case of the Toe That Shouldn't Go

Several years back, a diabetic with a dorsal second toe neuropathic ulcer was admitted to the hospital with cellulitis of the foot. The medicine service ordered an MRI and found “osteomyelitis” of the toe. When a podiatrist was consulted (with a request to amputate the toe) he saw an ulcer that did not probe to bone overlying the proximal interphalangeal joint and a mildly erythematous claw toe. Radiographs (which he ordered after the MRI had already been done—the medicine service went straight to the expensive MRI) showed what looked like normal bone. The podiatrists took the patient to surgery, performed an arthroplasty of the affected joint and MTP joint release, and sent the bone to pathology and microbiology. Can you guess the result? Completely normal bone. The patient healed uneventfully and this toe has been ulcer free for the last six years (she is still being seen for diabetic care). Good thing the podiatrist didn't trust the MRI!

### Case of the Multiple—Wrong—Opinions

A similar situation occurred about two years ago with a patient who presented for a sixth opinion. Yes, a sixth! Some people are just that persistent. This diabetic gentleman had a second digit mallet toe and previously healed neuropathic ulcer. Someone had ordered an MRI, which came back positive and advised him that he needed an amputation. He then went to five other doctors who all, except for a podiatrist, said he needed the amputation. When he finally came to the sixth doctor, he wasn't requesting an alternative diagnosis; rather he demanded

that his toe be amputated. This toe looked completely normal with the exception of the mild flexible contracture at the distal interphalangeal joint and a bulbous appearance to the tip of the toe due to the chronic pressure. There was no ulcer, callus, fissure, or other break in the skin. Nothing. Nada. Nil.

He was told that he didn't need any treatment, especially not an amputation. He then demanded that the toe be amputated, but the podiatrist vociferously refused. They debated

ent antibiotics. At the end of this, she saw another doctor (that's doctor number three) who told her she needed to have her toe amputated. Refusing this, she went to another hospital which admitted her (admit number two and doctor number four), and one of the podiatry residents finally saw her and correctly recommended a partial nail avulsion, which the patient refused. She was discharged to follow up with the podiatric residency director. When the patient saw him, she had a complete-

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back and forth for literally an hour while the clinic became increasingly backed up. Finally, he told the patient, “I refuse to amputate your normal toe. If you want that done, you'll have to find someone else.” The patient was finally convinced to simply wait a little and watch how things progressed. Of course, nothing happened since he didn't have a bone infection, and he continues to be seen for diabetic surveillance.

### Case of the Monster Paronychia

Just the other day, a very nice pre-diabetic lady came in as a follow-up from a recent hospitalization for cellulitis of her great toe. About two months previously, she went to her primary care doctor with redness and swelling around the right great toenail. She was prescribed oral antibiotics, which she completed. A week later, the toe became increasingly red and swollen after bumping the same toe, so she went to the ER. Radiographs were taken, she was diagnosed with a fractured toe, and then had an MRI.

You're probably saying: “An MRI? Who in their right mind would order that?” But they did. Guess what the radiologist diagnosed? Yup. Osteomyelitis. You got it! She was admitted for a week and a PICC line was inserted, and the patient received four weeks of two differ-

ly normal toe other than incurvation of the nail.

It's astonishing that this poor woman underwent so much treatment, for it turned out she had nothing more than a simple ingrown toenail. This story is not exaggerated... it was just an ingrown nail. You see, during all this time, no one removed the offending nail, so the patient had recurrent nail issues. It's almost unbelievable if it weren't so common.

The commonalities between these cases are almost painfully obvious.

1) A lack of understanding of the primary pathological process and clinical situation. Diabetic osteomyelitis in the adult foot occurs by contiguous spread (not hematogenous spread) and there MUST be connection between the bone and the skin for this to happen. Ingrown toenails necessitate removal of the offending nail border and rarely require any antibiotics, much less intravenous ones.

2) An excessive over-utilization and reliance on advanced imaging. Despite the stated high sensitivity and specificity of MRI for diagnosis of osteomyelitis in the medical literature, it does not trump a good history and physical and often overcalls this diagnosis. MRI does not actually diagnose osteomyelitis—that's done by biopsy and culture. MRI simply

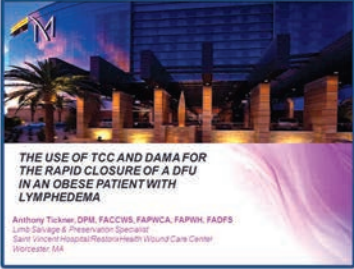
*Continued on page 38*

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38

*Missed Diagnoses (from page 36)*

shows bone marrow edema, soft tissue edema, and sometimes bone destruction (in the more obvious cases). Edema of the bone without infection can occur with trauma or arthritis (such as in the cases discussed here).

3) Doctors treating patients outside of their field of expertise. If you spend most of your time treating conditions that occur above the lower extremity, then what makes you think you're capable of treating complications of the foot and ankle? Do I espouse to be an expert in hypertension or diabetes? No. Do I try to treat hypertension? Of course not. If this is true for podiatrists, then why shouldn't it be true for everyone else? Don't treat what you don't know.

Here are two good pieces of advice for all medical providers. First, the history and physical must correlate or something's missing. Similarly, any imaging ordered must correlate with the history and physical. The body is a machine that malfunctions in predictable ways. If something doesn't fit, then you're missing something. Don't just order more tests. Go back and think logically through the problem...and then refer.

Second, don't treat diseases outside of your knowledge and scope. Consult someone with more knowledge and expertise than you have. You're not less of a doctor if you ask for help. Consult the experts. For the foot and ankle that means podiatry. **PM**

**Dr. Shapiro** is editor of PRESENT Practice Perfect. He joined the faculty of Western University of Health Sciences, College of Podiatric Medicine, Pomona, CA in 2010.