Introduce Percutaneous Procedures into Your Practice

They’re an important part of your comprehensive care model.

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In the current residency training environment, podiatrists are exploring more invasive and elaborate reconstructive foot and ankle surgeries than ever before. Many residency programs now expose tomorrow’s surgeons to complex forefoot and rearfoot reconstructions, subtalar and ankle fusions with external fixators and intramedullary rods, total ankle replacement, and cutting edge procedures that the last generation of podiatrists couldn’t have dreamed of performing in a hospital setting. Unfortunately, there are numerous trends that make these types of procedures less attractive, less accessible, less lucrative, and more exposed to litigation.

As our patient demographic becomes older and more dependent on therapies and medications that turn cardiac issues and diabetes into extended chronic disease, these patients will look to us to keep them ambulatory and pain-free despite their increasing surgical risk. As reimbursement for procedures continues to decrease and penalties are imposed for re-admission to hospital for post-operative and medical complications, the cohort of ideal surgical patients grows even smaller.

Decades ago, the last generation of podiatrists performed many procedures in their office out of necessity. Tracking patient satisfaction or infection rates among an increasingly diverse patient population in different eras of medicine is unlikely to provide any useful data, but it is probable that their pain scores, patient satisfaction, and infection rates were not profoundly worse than today. Procedures and protocols discussed below will decrease your time tied up in the operating room and increase the opportunities for generating revenue by strategic use of your staff. As fee-for-service reimbursement decreases, successful practices will look for opportunities to offer more of these comprehensive services. These will improve your patient outcomes, increase the perceived value for their treatment dollar, and ultimately grow your collections.

Myrtle

Myrtle has been a patient at your practice since it opened. She brings cookies and cards and sends every geriatric patient in her church to get their toenails cut by you. She has been asking for years to have her painful hammertoes fixed despite not actually wanting to have surgery. Initially, she received accommodative shoes with a Lycra toe box and Silipos gel tubes. These limited her discomfort, but she still requests a corrective procedure. On exam, you note that her pulses are weakly palpable, and she notes she occasionally has cramping in her feet during ambulation. An arterial brachial index and pulse volume recording is performed, and she is noted to have biphasic signals to the level of the digits.

After discussion of surgical options, you perform flexor tenotomies of toes 2, 3, 4, 5 in the office.

She returns to the office a few days later for a dressing change. She has moderate serous, bloody drainage from the surgical sites, and you dispense Polymem foam dressings.

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Surgical Podiatry

for her to perform at home. She returns for routine post-operative visits. Two weeks after her procedure, her toes no longer rub the top of her shoes and she sings your praises as she dances out of your office. A few weeks later, she returns for the same procedure on the other foot and states she told everyone she knows about this procedure and has a few people coming in to request that you fix their toes (Figures 1-4).

Jim

Jim is a type 2 diabetic with claw toe deformity to several toes on both feet. He has been suffering from recurrent calluses at the tips of several toes for years. He comes into the office every other month with a callus and underlying ulceration, usually with localized cellulitis. He desires correction of this problem but continues to have problems controlling his hemoglobin A1c. He returns for routine monthly follow-up, and you note the callus is deeper and there is possible exposed bone after the nail is debrided free of the nail bed. You start him on antibiotics and obtain non-invasive vascular studies due to his open wound and his smoking history. You also order an MRI of the affected foot to rule out osteomyelitis and place him on oral antibiotics. Due to the hammertoe deformity that is causing this ulceration, you dispense a short cast boot with off-loading insole. He returns to the office after the MRI and the cellulitis has improved. The scan was negative for bone infection. A flexor tenotomy of affected digits is performed. Following a two-week post-operative period, he heals without incident and after post-operative edema resolves, he has rectus toes.

Lucy

Lucy is diabetic and presents to your office with complaint of a bleeding callus to her forefoot. On exam, you note that she has a significant equinus to bilateral lower extremities that causes her to ambulate principally on the forefoot. You obtain an x-ray to examine for any obvious bone infection and to evaluate for plantarflexed metatarsals. Debridement of pre-ulcerative tissue is performed. You place her in a pneumatic boot with accommodation for the plantarflexed metatarsal and order an arterial brachial index and pulse volume recording. Vascular evaluation demonstrates only mild impairment of flow to the digits.

Following a few weeks in the pneumatic boot, the pre-ulcerative tissue has resolved. Further examination reveals dorsiflexion of 0 degrees bilateral. Physical therapy is ordered and the patient returns six weeks later with dorsiflexion to <5 degrees bilateral feet. You elect to perform percutaneous lengthening of the Achilles tendon. Following this procedure, the patient gains 12 degrees of dorsiflexion on the operative foot. Two weeks later, the procedure is repeated on the opposite limb with similar results. The patient is then cast for diabetic insoles and added-depth shoes. Three months later, she has a normal gait and no further recurrences of plantar foot ulceration (Figure 5).

Tom

Tom is an uncontrolled diabetic with a history of multiple hospitalizations for hyperglycemia and pedal infections. He presents

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of the right foot. She has no significant dorsiflexion strength on this foot.

You perform percutaneous flexor tenotomies of toes 2,3,4,5 as well as an extensor tenotomy of the EHL tendon and percutaneous Achilles tenotomy. Following tenotomy, there to your office after having missed several appointments. He noted that he has developed a plantar hallux callus again but thinks it is worse than usual. There is a small pre-ulcerative callus due to significant hallux limitus but with no significant depth. There is swelling and some redness to the forefoot. He is placed in a pneumatic boot to stabilize the hallux limitus deformity. He is given a prescription for oral antibiotics and an MRI is ordered. The MRI reveals osteomyelitis of the distal 1st, 2nd, and 3rd metatarsals. Tom undergoes a transmetatarsal amputation that heals without complication. Following some reduction in post-operative edema, he is cast for a toe filler and custom insoles on the contralateral foot, and added-depth shoes.

**Jenny**

Jenny, who presents with her daughter, is non-diabetic and with a singular complaint of difficulty with fitting shoes. She sustained a right-sided injury related to a car accident many years ago and has had reducible dor-
is immediate improvement in the posi-
tion of the ankle but only to-2 de-
greses dorsiflexion. She is placed in
a pneumatic boot with no heel lift.
Following reduction of post-opera-
tive edema, she is dispensed a night
splint to improve ankle joint contract-
ture. She is also cast for an Arizo-
na-style AFO and ordered a neoprene
toe box-style shoe. Two months later,
she walks out of your office with
a pneumatic boot with no heel lift.
Following reduction of post-opera-
tive edema, she is dispensed a night
splint for this patient keep the dressing intact and
return to the clinic a few days
later. If the wounds are not healed
at 3-5 days post-operatively, the
patient may be prescribed and/or
dispensed appropriate wound care
dressings.

If drainage is significant (moder-
ate to severe), consider dispensing a
foam dressing such as Polymem for
the patient to change at home. Rarely
do these wounds remain open more
than two weeks, even with mod-
erate peripheral arterial disease or
type 2 diabetes mellitus. The results
of a flexor tenotomy can be impres-
sive and are frequently cosmetically
equivalent to open hammertoe repair.

Author’s Preferred Technique:
Achilles Lengthening

Using an 11 blade, employ a med-
dial-lateral-medial triple hemi-section
technique. Performing this procedure
in the outpatient clinic setting is pos-
sible with a local anesthetic block
in a sensate patient. Reserve this for
patients who are significantly or com-
pletely insensate. Using the 11 blade
usually necessitates a single suture
at each incision, giving care to close
only the skin and not the tendon
sheath or re-approximate the actual
tendon. Typically, you will order/
dispense a night splint for this patient
in order to increase the efficacy of
the procedure and prevent limitation
of dorsiflexion from co-existing joint
contracture or fresh tendon edges
healing back together. PM