

FootCare Update



Expert care from professionals who care.

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Patients and their Physicians always benefit when....

DPM's provide a simple, permanent solution to correct painful or infected ingrown nails.

Nail structure (an inherited characteristic), combined with normal shoe gear, is the source of ingrown nail pain and/or infection. "Contrary to popular belief, ingrown nails are not a product of incorrect nail cutting," said Kenneth Leavitt, D.P.M., of Brookline, MA.

The prevalence of ingrown nails is highest when individuals wear shoes, regardless of race, gender or country of origin.

The painful or infected ingrown nail condition usually affects the great toe, but also can affect lesser digits.

Traditional Treatment Ineffective

Ingrown nail treatment, sadly, is still anecdotal throughout most of the world, according to Dr. Leavitt. The most common procedures or approaches, seemingly are those that are most prone to failure, including:

- Soaking and systemic antibiotic treatment of the infection with no surgical intervention.
- Avulsion of the entire nail plate.

"Since the curvature of the nail plate border is the problem, no amount of cutting V's in the center of the nail plate or routine palliative care will change the shape of the nail," Leavitt said. Addressing the nail "root" or matrix proximally is the only solution, according to this specialist, who has had the procedure



Pre-Op: Typical incurved nail plate border (left) with infection.

done on each of his great toes.

Avulsion does resolve the problem temporarily, but the nail always grows back thicker and more incurvated, due to trauma incurred to the nail matrix.

Progressive Stages of Pathology

Three stages define the progression of ingrown nails.

1) Curved nail (Onchocryptosis) is the inherited condition describing an incurvated nail plate border which may or may not manifest pain when contact is made with shoe gear.

2) Penetration (Pyogenic Paronychia) occurs when the curved nail border has broken the surrounding epidermal barrier, introducing

normal skin flora and setting up a nidus for infection.

3) Infection (Pyogenic Granuloma) identifies reactive inflammatory tissue, the result of indwelling of the source of irritation (the nail plate). Over 99% of all hypertrophic tissue identified as pyogenic granuloma is benign and will atrophy upon removal of the offending nail plate and resolution of the infection with antibiotics. Very rarely will a chronic granuloma become basal or squamous cell carcinoma. "Reconstruction of chronic hypertrophic tissue is rarely necessary," Leavitt said.

Quick Surgery Best Treatment for 95% of Patients

Removing the offending portion of nail and deadening the matrix to permanently prevent the nail from growing back works best in 95% of patients. They can be treated without

pain, both before and after the 15 minute procedure, which is normally performed conveniently in the office.

"My own procedure really was simple, painless and permanent. I appreciate the need for skilled specialists in this area." - Michael Bader, M.D.

Rarely does the entire nail plate need to be removed unless there is the presence of ascending cellulitis, gross localized granulomatous infection,



Kenneth M. Leavitt, DPM

MEDICINE & RECONSTRUCTIVE SURGERY OF THE FOOT

Doctor of Podiatric Medicine

Fellow, American College of Foot & Ankle Surgeons

Diplomate, American Board of Podiatric Surgery, Certified in Foot Surgery



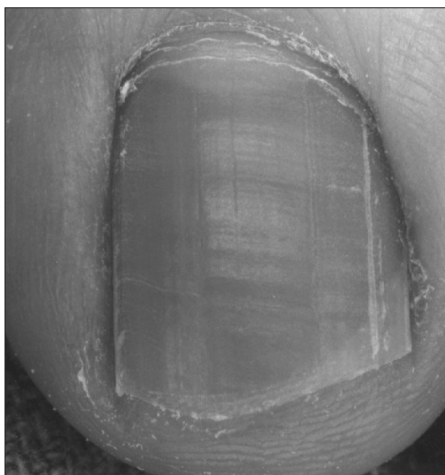
Ingrown Nails (continued)

sinus tract or osteomyelitis.

15 Minute, Painless Procedure

The injection is usually painless. It takes place at the base of the digit, not at the site of the infection or near the nail lip. Approximately 3.0 ccs of a mixture of Xylocaine and Marcaine without Epinephrine is sufficient.

Hemostasis is required, usually with a digital tourniquet and hemostats. The offending nail lip(s) is removed, the operative site is dried



Typical Post Op: Offending nail lip (left) was removed and the nail matrix and exposed groove were deadened to prevent recurrence.

with gauze and the nail matrix region and entire exposed nail groove are phenolized, then flushed with Isopropyl Alcohol. (Some practitioners prefer to use carbon dioxide laser rather than phenol.) A bandaid is the only dressing used and the patient may leave in normal street shoes.

Postoperatively, the patient simply washes and applies a topical antibiotic ointment or cream for 2-3 weeks, depending upon healing potential.

The patient is seen twice during that period to ensure proper wound care.

The procedure is effective in preventing recurrence of the offending nail plate 98% of the time.

Tips to Physicians about nail-related infections and pre-existing complications

Systemic treatment of infections is a judgment call, but the following rule always applies: **Systemic antibiotic therapy without removing the offending nail plate will fail most of the time.** A very localized acute infection of one week or less will almost always resolve with localized care after removal of the nail plate, without the need for systemic antibiotic therapy.

...Bacteriology: The most common infection by far is Staphylococcus Epidermidis or Staphylococcus Aureus. E-Coli and Klebsiella infections run a distant second in healthy patients. Pseudomonas infections are rare, except for compromised hosts. In compromised hosts such as those with diabetes, vascular disease immunosuppression, HIV, etc., the susceptibility to more resistant pathogens increases.

Given the resistance spectrum of the most common pathogens, the Penicillins, such as Amoxicillin, generally are useless in treating these infections. The drugs of choice are the Cephalosporins, Clindamycin and Erythromycin.

All patients with mitral valve prolapse and patients with joint prostheses should be prophylaxed prior to and after nail plate surgery, regardless of the presence or absence of infection. The usual prophylaxis regime in patients who are not Cephalosporin allergic, is 2 grams of Duricef one to two hours pre-operatively and one gram approximately 12 hours post-operatively. Long-term treatment for advanced cellulitis would be 7-10 days of antibiotic therapy, especially in patients with mitral valve prolapse or joint prostheses.

...Factors to Rule Out Prior to Surgery: A complete history and physical examination of the lower extremity is critical in order to rule out other factors causing pain or to be considered prior to surgical intervention. These factors include:

- Vascular disease with resultant ischemic pain.
- Uncontrolled diabetes in the presence or absence of adequate vascular status.
- Nerve compression or neuropathy as the source of pain.
- Subungual (beneath nail plate) bone spur.
- Status of terminal diseases which will alter the surgical approach.
- Drug therapies.

** Diabetic history in the patient does not preclude surgery, but will result in an individualized approach.*



Kenneth Martin Leavitt, D.P.M.

MEDICINE & RECONSTRUCTIVE SURGERY OF THE FOOT

New England Baptist Hospital, Suite 390 • 125 Parker Hill Ave. • Boston, MA 02120

TEL: 617-277-3800 • FAX: 617-277-3808

E-MAIL: kenleavitt@earthlink.net • www.bostonfootandankle.com