



a common injury from running

By Dr. Gordon Kleinpell, DPM

Dr. Kleinpell talks about the pathology, common diagnostic procedures and podiatric treatment of the Morton's Neuroma. This condition is quite common in runners as well as many other types of athletes. This article is available for *Continuing Education Unit* (CEU) credit.

There are many foot injuries that can plague runners and athletes. I'd like to focus on one condition I see frequently in the office. That condition is Morton's Neuroma. Morton's neuroma, or interdigital neuroma, is a pinched nerve in the forefoot, in the area of the ball of the foot.

It is most common between the 3rd and 4th toes, but can occur between any of the toes. Patients typically complain of pain and a 'fullness' in the forefoot. Many patients tell me it feels like the sock is balled up underneath the toes. It can feel like a sharp or dull pain, but often feels hot and burning, and can radiate out into the toes. Tight shoes and excess activity can aggravate the condition. Often times, temporary relief is felt with deep massage of the forefoot and toes.

Read This Article, Take Survey to Earn Continuing Education Points

The Pedorthic Footcare Association (PFA) offers Continuing Education Points (CEPs), approved by the American Board for Certification in Orthotics, Prosthetics & Pedorthics, Inc. (ABC) and the Board of Certification/Accreditation (BOC), via specially designated articles within *Current Pedorthics* magazine.

To take advantage of the program, thoroughly read the adjacent CEU article and then visit:

www.pedorthics.org and click on the *Continuing Education Opportunities* tab to purchase the 10-question quiz associated with this article. CEP quizzes cost \$15 for members and \$25 for non-members. The quizzes are worth 1.0 Scientific or Business CEP, depending on the content. Successful completion of the quiz will result in 1.0 CEP reported directly to ABC and BOC at the end of each quarter.

Look for additional CEP-eligible articles in future issues of the magazine; previous articles are available in the magazine archive at www.pedorthics.org.

If you have any questions, contact PFA, at (229) 389-3440 or e-mail: ceu@pedorthics.org.

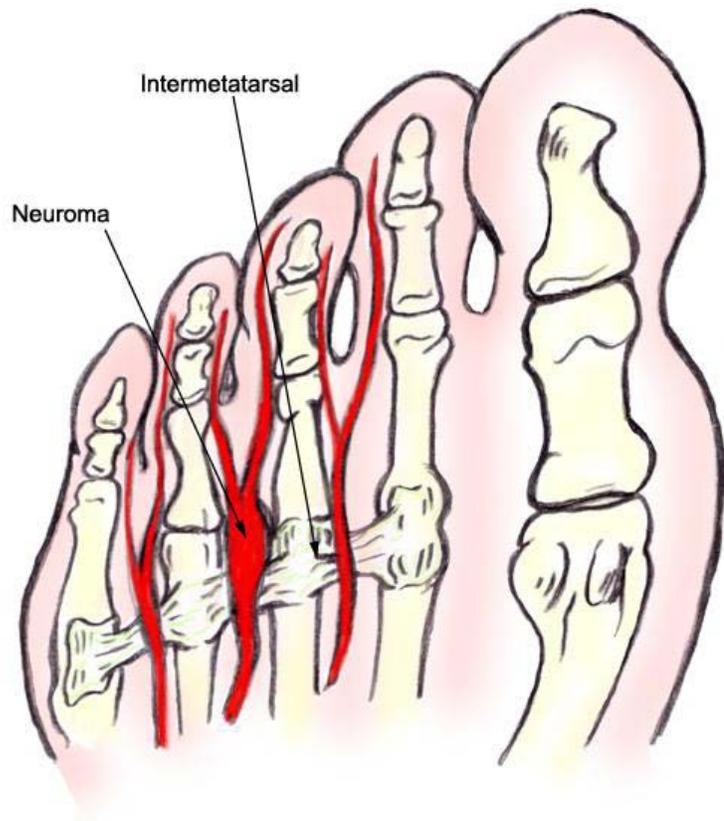
a common injury from running

Why do patients get this condition? Basically, it is due to a pinched nerve. The nerve becomes entrapped between the metatarsal heads. The nerve swells, gets further compressed, and pain is the result. It can be due to a high arched foot, and also 'tight' metatarsals, that is, bones that are too close, compressing the nerve in between. Diagnosis is made with a full history and clinical exam. X-rays are taken to evaluate the bones, and bone structure, and to rule out conditions like

fracture or bone tumor. MRI is often used to visualize the entrapped, often enlarged, nerve and to differentiate it from other types of tumors. Nerve conduction studies also help to rule out other neurological causes. The treatment centers around relief of pain. Wider shoes with better padding are a good start. Cortisone injections are often given to shrink the nerve, and decrease inflammation. If that fails, then an alcohol solution (sclerotherapy) can be injected to further shrink the nerve, without

Possible reported findings provided by the patient with Morton's neuroma include the following:

- The most common presenting complaints include pain and dysesthesias in the forefoot and corresponding toes adjacent to the neuroma.
- Pain is described as sharp and burning, and it may be associated with cramping.
- Numbness often is observed in the toes adjacent to the neuroma and seems to occur along with episodes of pain.
- Pain typically is intermittent, as episodes often occur for minutes to hours at a time and have long intervals (ie, weeks to months) between a single or small group of multiple attacks.
- Some patients describe the sensation as "walking on a marble."
- Massage of the affected area offers significant relief.
- Narrow tight high-heeled shoes aggravate the symptoms.
- Night pain is reported but is rare.



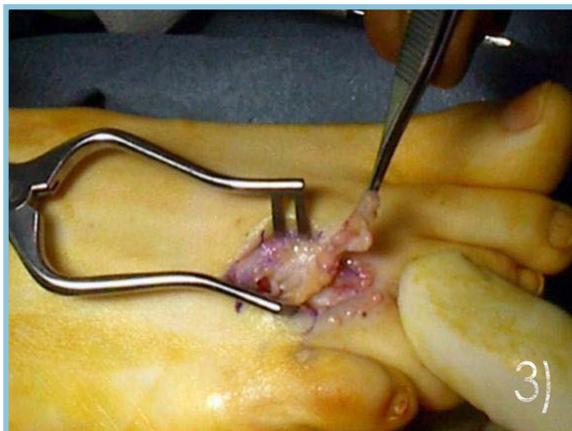
a common injury from running

the side effects of too much cortisone. Conservative therapy is effective at relieving approximately 75% of neuromas. If the condition persists beyond 2 months, and MRI confirms the presence of neuroma, then surgical removal of the inflamed nerve can be performed to give definitive relief.

In order to help alleviate the discomfort caused by this condition, the pedorthist can assist in a couple of ways. As mentioned previously, well-padded, wider shoes help by

not squeezing the trapped nerve between the metatarsal heads. A metatarsal pad placed proximal to the metatarsal heads can increase space between all of the heads. A teardrop pad positioned in the affected interspace proximal to the neuroma can reduce pressure by separating the specific metatarsal heads. These pressure reducing techniques can provide significant relief for the athlete.

PFA



When conservative measures for Morton's neuroma are unsuccessful, surgical excision of the area of fibrosis in the common digital nerve (as demonstrated in the images above) may be curative.

morton's neuroma

FACTSHEET

A thickening of the tissue around a nerve leading to the toes.

COMMON

More than 200,000 US cases per year

Treatable by a medical professional

Requires a medical diagnosis

Lab tests or imaging often required

Short-term: resolves within days to weeks

Morton's neuroma may be caused by pressure or injury, such as from running or use of high heels.

Morton's neuroma may feel like a pebble in a shoe or a fold in a sock.

There may be sharp, burning pain or numbness in the ball of the foot or toes.

Treatment might include arch supports and foot pads, corticosteroid injections, strength exercises, wide-toe shoes, or surgery.

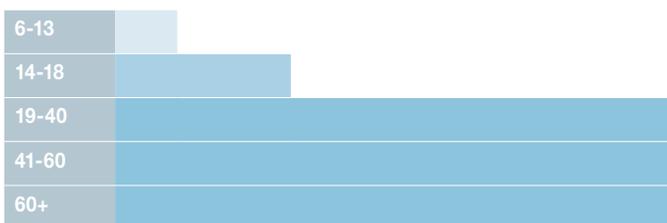
SYMPTOMS

Requires a medical diagnosis

Morton's neuroma may feel like a pebble in a shoe or a fold in a sock.

There may be sharp, burning pain or numbness in the ball of the foot or toes.

Ages Affected



Genders Affected



People may experience:

Pain areas: in the foot

Sensory: pins and needles or reduced sensation of touch

Also common: lump in the sole of the foot or sensation of walking on a marble

TREATMENTS

Treatable by a medical professional

Treatment might include arch supports and foot pads, corticosteroid injections, strength exercises, wide-toe shoes, or surgery.

PRESCRIPTION

Steroids: Methylprednisolone by injection (Depo-Medrol)

SELF-TREATMENT

Anti-inflammatory: Ibuprofen (Advil), Naproxen (Aleve)

Pain reliever: Acetaminophen (Tylenol)

Other treatments: Lidocaine

ALSO COMMON

Lifestyle: Well-Fitting shoes, Activity modifications

Soothing remedies: Ice pack

Devices: Orthotics

Therapies: Physical therapy

Other treatments: Rest, Padding area, Taping area

SPECIALISTS

Podiatrist: Treats disorders of the foot, ankle, and lower extremities.

Pedorthist: Treats the foot, ankle, and lower extremities conditions with specific modalities

Physical therapist: Restores muscle strength and function through exercise

Primary care provider (PCP): Prevents, diagnoses, and treats diseases. •