TAKING THE FIFTH

Treatment options for a fifth metatarsal fracture

by Richard Beauchamp, M.D., FRCSC

The metatarsals are bones of the foot connecting the toes to the mid-portion of the foot. As we have five toes, there are also five metatarsals. They are numbered "first" to "fifth", moving from the inside of the foot to the outer edge.

Sometimes, the pull of a muscle can be so strong and forceful that instead of tearing the muscle, a part of the bone where the muscle attaches can be broken off (known as an avulsion fracture). This can be seen in several areas of the body, such as the upper end of the tibia (leg bone), the hip, the thumb, the shoulder, or the area we'll discuss here: the fifth metatarsal of the foot. This injury is also known as a Jones fracture.

The fifth metatarsal—like all the bones of the foot—is an integral part of the skeleton that serves as an interface with the ground during walking and running. The forces generated with running can be upwards of 300 pounds per foot strike. Bones may look and feel rigid, but they are actually able to bend slightly to allow those forces to be absorbed without breaking. Any condition that renders the bones less flexible and more brittle, such as osteoporosis, can make the bones susceptible to fracture. Also, excessive forces through the bones from over-training, anatomical errors and prior injuries can also lead to bone breaks.

If a fracture occurs suddenly, we call it acute. Acute fractures heal the fastest and don't require a lot of conservative treatment. Sometime a simple air cast is all that may be needed for four to six weeks, followed by several weeks of rehabilitation.

Fractures that occur gradually over time can be termed chronic injuries or stress injuries. Chronic, slowly evolving fractures take longer to heal. Sometimes, there is a need for bone grafting, where bone is taken from other parts of the athlete's skeleton (usually the pelvis) or from a special freeze-dried bone bank and laid adjacent to the broken bone. Healing often takes six to ten weeks of immobilization to complete the process, followed by considerable rehabilitation.

X-ray of a 5th metatarsal fracture.

The fifth metatarsal is an integral part of the skeleton that serves as an interface with the ground during walking and running.

There are, however, other factors that may influence the treatment choice by either the injured runner of the treating physician. The location of the fracture on the metatarsal may affect the healing ability, and some surgeons may then be a little more aggressive with recommending an operation. If an athlete, for whatever reason, cannot afford to be immobilized and unable to run or play her sport for the six weeks of casting and several weeks of therapy after cast removal, then she may elect to go with open reduction and internal fixation (ORIF). This usually involves inserting screws, plates or pins to secure the bone fragments together. The incision heals within about two weeks and the athlete can then begin therapy (non-weight bearing with crutches) with water running and other exercises. When the bone is healed (after about six weeks), the athlete is usually ready to participate in her particular sport.

The operation, however, is not without some risk. It usually involves either a general or spinal anesthetic, and it may place other adjacent structures (such as nerves and arteries) at risk from the procedure. Often, a second operation is needed several months to years later, for hardware removal

In summary, there are conservative and invasive procedures for fifth metatarsal fractures, but a variety of factors must be weighed in each individual case. Consult your physician or sports medicine professional for situation-specific advice. RR

Richard Beauchamp is a runner as well as an orthopedic surgeon. His running career has spanned more than 15 years and involved seven marathons. His orthopedic surgery career extends over 35 years. He is the medical director of the Shriner's Gait Lab at Sunny Hill Health Centre in Vancouver and a clinical professor in the Department of Orthopedics at the University of British Columbia. He walks out of the West 4th store with his wife Dorothy.