



HALLUX RIGIDUS?

What is Hallux Rigidus?

Hallux rigidus is arthritis of the big toe joint. It is the most common arthritic condition of the foot and second only to hallux valgus (bunion) as conditions associated with the big toe. Females are more commonly affected than males in all age groups and typically develops in adults between the ages of 30 and 60 years.

Symptoms and Clinical Presentation

Most patients present with complaint of pain in the big toe joint while active, especially as you push off on the toes as you walk. Others note swelling and stiffness around the big toe joint or are unable to bend the toe up or down. A bump, like a bunion or bone spur, can develop on top of the big toe joint which can be aggravated by rubbing against the inside of your shoe.

Cause (including risk factors)

The true cause of hallux rigidus is not known. However, several risk factors have been identified to include abnormally long or elevated first foot bone (*metatarsal*)/ differences in foot anatomy, prior traumatic injury to the big toe and family history. Most of these risk factors cause damage to the surfaces of the bone that lead to wear and tear of the joint that lead to arthritis.

Anatomy

The big toe (*hallux metatarsal phalangeal*) joint consists of connection between the head of the first foot bone (*metatarsal*) with the base of the first toe bone (*proximal phalanx*) and the two tiny bones (*sesamoids*) underneath the head of the first foot bone (*metatarsal*). This joint is called the hallux metatarsal phalangeal, or MTP, joint.

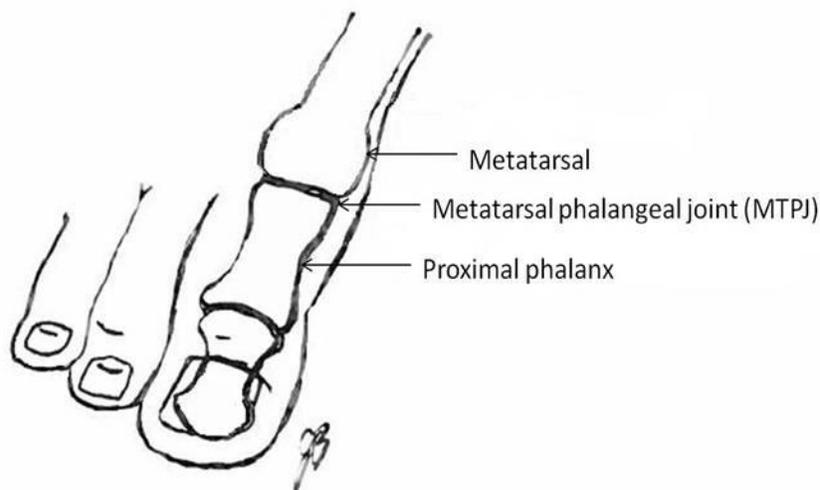


Figure 1 nml foot.jpg



Diagnosis

In many cases the diagnosis can be made by your physician on physical examination alone. He or she will examine your foot for evidence of bone spurs, check the motion of the MTP joint by moving it up and down to see how much motion is available without pain. X-rays may be performed to help understand the extent of joint degeneration and to show the location and size of bone spurs.



Figure 2 Dorsal Bunion

Treatment Options

Non-Surgical Treatment: Non-surgical management is always the first line treatment of this condition. Your physician may suggest pain relievers and anti-inflammatory medicines, ice or heat packs, or even injections into the joint to reduce the pain and stiffness. Often times changes in the shoes you wear such as avoiding thin soled shoes or high heels, wearing wider shoes with a curved sole (*rocker bottom*), or even shoe inserts (see below) that limit the motion at the MTP joint may be suggested. Although these treatments may help decrease the symptoms they do not stop the condition from progressing.

Surgical Treatment: The surgical treatment for hallux rigidus is determined by failure of non-surgical treatment and the extent of arthritis and deformity of the toe.

Cheilectomy

For the more minor type of hallux rigidus, when the damage is mild to moderate, shaving the bone spur on top of the metatarsal (cheilectomy) is sufficient. Removing the bone spur, allows more room for the toe to bend, alleviating pain in the toe caused when pushing off the toe. Advantages of this procedure is that it is joint sparing, preserves joint motion, and maintains joint stability.

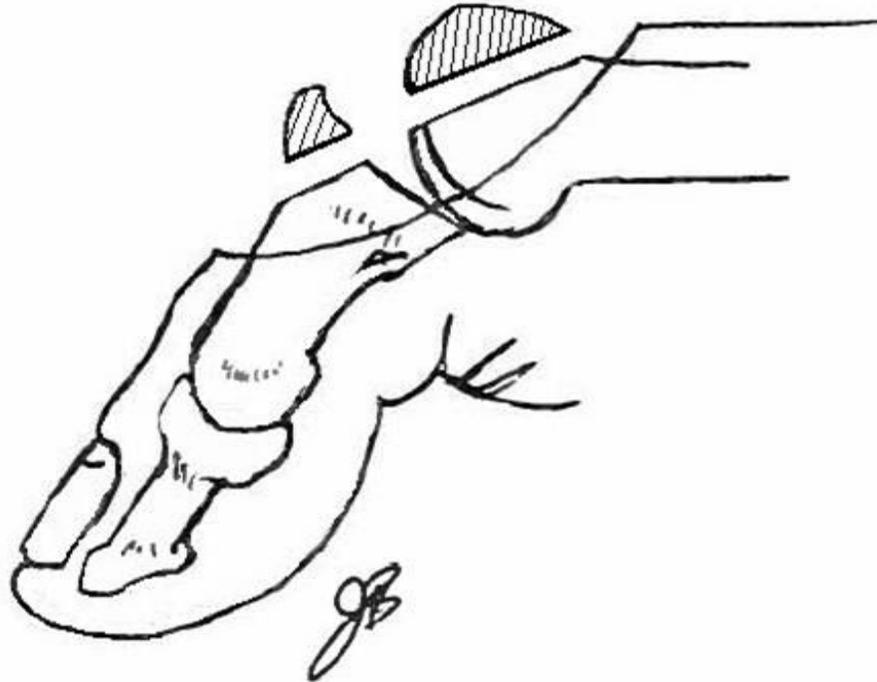


Figure 3 Cheilectomy

Arthrodesis

In advanced stages of hallux rigidus, when the joint damage is severe, is often treated by fusing the big toe (*arthrodesis*). In this procedure the damaged cartilage is removed and the two bones are fixed together with screws and/or plates to allow for the bones to permanently grow together. The main advantage of this procedure is that it is a permanent correction with elimination of the arthritis and pain. The major disadvantage is the restriction of movement of the big toe.

Interpositional Arthroplasty

For the patient with moderate to severe hallux rigidus but who is unwilling to accept the loss of motion at the big toe, an interpositional arthroplasty may be an option. The procedure consists of taking away some of the damaged bone and placing a piece of soft tissue from the foot, such as tendon or capsule, between the joint to allow for some motion. The operation is effective but not as reliable or predictable as a fusion.

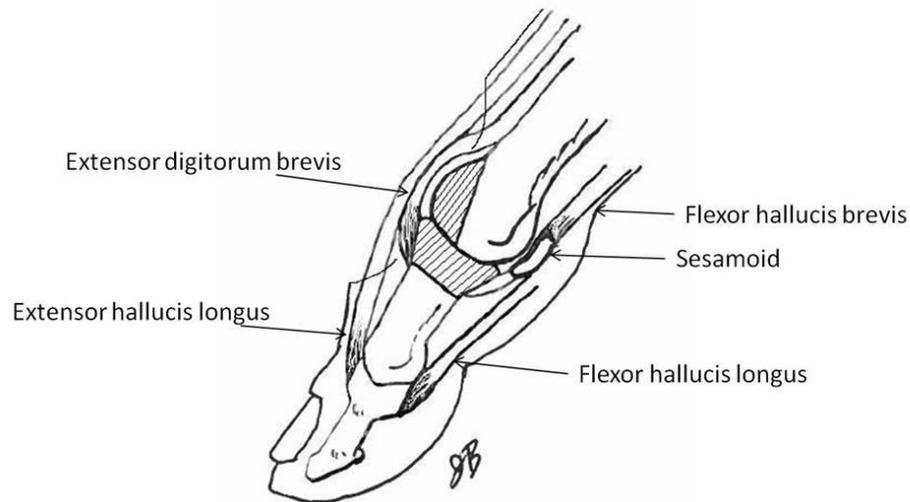


Figure 4 Interpositional arthroplasty

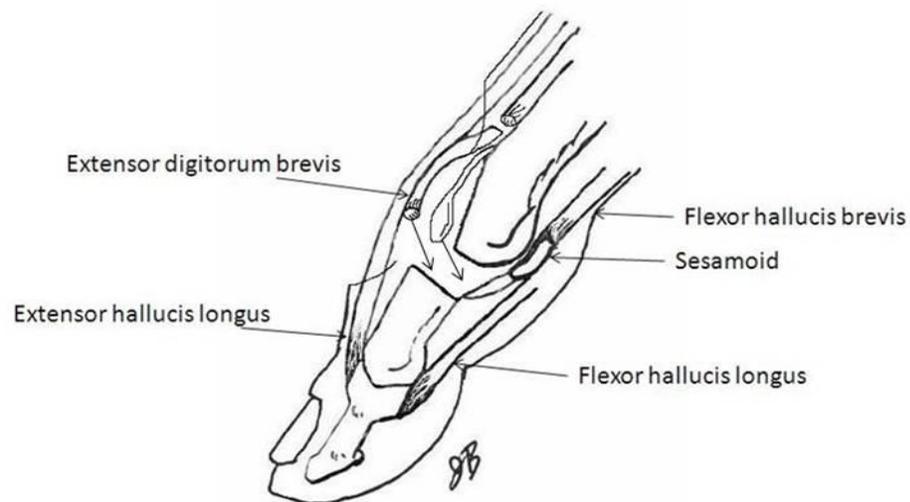


Figure 5 Interpositional arthroplasty



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Recovery

Recovery depends upon the type of surgery performed. For cheilectomy and interpositional arthroplasty most surgeons recommend wearing a hard soled sandal and allow weightbearing as tolerated for about two weeks then gradual return to normal footwear. For arthrodesis procedure weightbearing is limited usually with crutches for 2-3 months and immobilized with a cast for 6-8 weeks. The patient should expect some swelling about the foot for several months after the procedure.

Outcomes

Outcomes are usually quite good. Most patients are able to exercise, run and wear most shoes quite comfortably. Wearing a heel higher than an inch and a half may be more difficult after a fusion of the toe.

Complications

When surgery is warranted, the typical risks of an operation apply such as scar, infection, and failure to relieve symptoms. However, there are minimal risks to these operations.

FAQ

Why can't you replace the MTP joint? Although there is the ability to replace either half (*hemiarthroplasty*) or the entire joint (*total joint replacement*) there is insufficient long term studies to support their use. Many of the current toe implants suffer from loosening and early failure requiring another surgery.

What type of activity is allowed after fusion surgery? Most patients are able to return to their usual level of activity including jogging. However, most patients will have some limitations in footwear.

Additional Resources

1. <http://www.orthopaedia.com>
2. American Academy of Orthopedic Surgeons (AAOS) website <http://orthoinfo.aaos.org>