South County
Orthopedics Specialist

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Hallux Rigidus

Hallux rigidus is arthritis of the great to, specifically the 1st metatarsal-phalangeal joint (MTP joint). This can cause pain and stiffness of the great toe, which greatly affects your level of activity, including walking. There are several risks factors, including a long or elevated first metatarsal bone or other differences in foot anatomy, and prior injury to the big toe. These can lead to excessive wear of the joint, which in turn leads to arthritis.

Pathophysiology: Acute trauma and repetitive microtrauma predispose to arthritic changes
Pathoanatomy: osteophyte formation and degeneration of the cartilage occur dorsally in early stages and progress to involve the entire joint. Causes can include trauma, inflammatory arthritis, and gout.

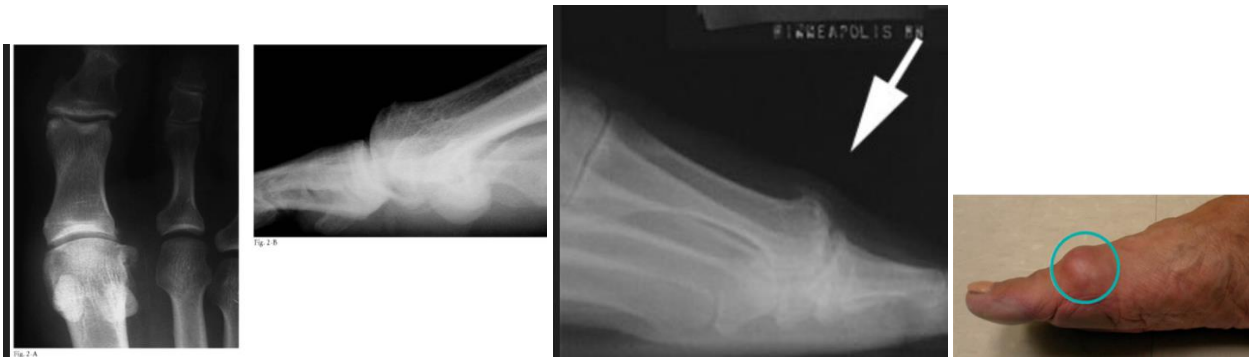
Clinical Presentation

Coughlin and Shurnas Classification		
	Exam findings	*Radiographic findings*
Grade 0	Stiffness	Normal
Grade 1	Mild pain at extremes of motion	Mild dorsal osteophyte, normal joint space
Grade 2	Moderate pain with range of motion, increasingly more constant	Moderate dorsal osteophyte,<50% joint space narrowing
Grade 3	Significant stiffness, pain at extreme ROM, no pain at mid-range	Severe dorsal osteophyte, >50% joint space narrowing
Grade 4	Significant stiffness, pain at extreme ROM, pain at mid-range of motion	Same as grade III

Symptoms: Great toe joint pain that is worse with push off or lift-off phase of gait. Patients may get medial great toe numbness that is due to dorsal bone spurs and compression of medial dorsal cutaneous nerve.
Motion: limited dorsiflexion, pain with terminal dorsiflexion, as disease progresses, patient develops pain throughout arc of motion.

Imaging:

Radiographs (AP, lateral, sesamoid and oblique views of the foot) can show dorsal osteophytes, joint space narrowing, and subchondral sclerosis and cysts.



Non-surgical Treatment

Shoe modifications (rocker type shoes, stiff sole shoe and wide toe box shoes), Anti-inflammatories, Cortisone injections, and activity modification.

Surgical Treatment

Surgery is done under a local anesthetic

1.) Cheilectomy (**Bone Spur Removal**): removing some bone and the bone spur on top of the foot and big toe can be sufficient. Removing the bone spur allows more room for the toe to bend up and relieves pain caused when pushing off the toe. This procedure also can be combined with other bone cuts that change the position of the big toe and further relieve pressure at the top of the joint. (Moberg osteotomy).

2.) 1st MTP joint fusion/arthrodesis: the 1st (MTP) joint is fused. We may recommend this procedure if you already have very limited motion of the joint or your arthritis is too severe. The cartilage in the joint is removed through an incision, and the proximal phalanx and metatarsal are held together by a plate and screws, or simply just screws.

Post-operative care

1. Cheilectomy: You may walk on the foot immediately after surgery, in the post-op shoe provided for you. Dressing change 2-3 days after surgery. You must keep the incision dry until your sutures are removed in the office, at your first post-op appointment in 2 weeks. Will WBAT in post op shoe for 4-6 weeks. At 6 week post op visit patient can increase activity as tolerated and transition to a wide toe, supportive shoe.
2. Joint Fusion: You will be in a non-weight bearing splint for the first 2 weeks following surgery. Weeks 2-6 you will be transitioned to a boot vs cast with limited weight bearing. Weeks 6-10 following surgery you will be in a boot with protected weight bearing until healed fusion.

Returning to sports and physical activity

Several studies have shown that first MTP joint arthrodesis results in good functional outcomes and return to physical activities in patients. [1] A majority of patients are able to return to physical activities and sports within 1 year of surgery at their max participation. 50 percent of patients were able to return to physical activities less than 6 months post op. The other 50 percent returned between 6-12 months post

op. Some activities that took a little longer to return to max participation include: yoga, elliptical trainer, pilates, hiking, ice skating, and skiing.

Risks of surgery

Cheilectomy: The biggest risk of this surgery is that it does not relieve all of your pain, and you may need future surgery. You may also have some numbness after the procedure that is usually transient. The risk of anesthesia, blood clots, infection, and blood loss are minimal for this type of procedure.

Joint Fusion: The biggest risk of this procedure is if the bone does not heal. If this happens, we may have to do the procedure again. You may also have some numbness after the procedure that is usually transient, but you can have some permanent numbness. The risk of anesthesia, blood clots, infection, and blood loss is minimal for this type of procedure. If the hardware bothers you, we can take it out once the bones are fully healed (after 1 year).

References:

1. Big Toe Arthritis (Hallux Rigidus) | FootCareMD
2. DJD & Hallux Rigidus - Foot & Ankle - Orthobullets

[1] Da Cunha, R.J (2019). Return to Sports and Physical Activities After First Metatarsophalangeal Joint Arthrodesis in Young Patients. *American Orthopaedic Foot and Ankle Society*. 6-7.