



Foot surgeons need bio-mechanical insight to realign deformed joints.

What patients describe as a “Bunion” can be seen as a painful swelling or prominence, with or without additional bursal swelling, at the base and along the side of the big toe. It actually overlays the medial aspect of the first metatarsal head.

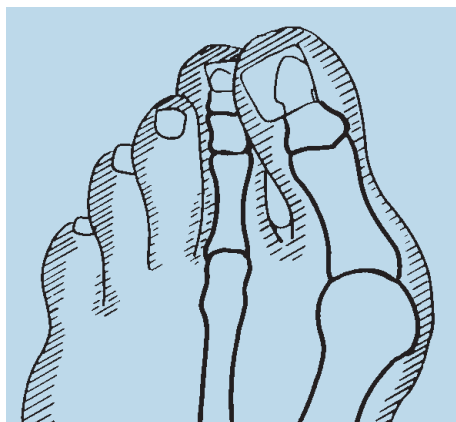
The great toe usually is deviated laterally, in the direction of the 2nd toe. Often the second toe over lays the great toe and is cocked up or hammered. Much too narrowly defined by the dictionary as “an inflammation and swelling of a bursa sack at the base of the big toe,” a bunion deformity actually involves the dislocation of the first metatarsal phalangeal joint and will gradually worsen and become arthritic if not treated.

Why do bunions develop?

Bunions typically are inherited. Or at least the predisposing bone, joint and soft-tissue structures are inherited to the extent that bunion deformities (with or without symptoms) are often manifested in children and youth before age 20. Males and females both can develop bunions, however women tend to complain in greater numbers because of particular shoe gear. Although shoes, by themselves, do not cause bunions, people with a foot type that is prone to this kind of deformity, can aggravate the prominence with tighter shoe gear.

Why Surgical Intervention?

The conservative treatment of bunion deformities is very often taken care of by the patients themselves. They self-medicate with over-the-counter, non steroidal anti-inflammatory drugs (NSAIDs), if tolerated, and they attempt to wear more comfort-



Typical bunion deformity.

able footwear. They often attempt to use bunion shields or other over-the-counter devices, which can accommodate the bursal swelling, but have no effect on minimizing the progression of the deformity or reversing it.

Clinical treatment generally results in a recommendation for surgical intervention if the conservative means have been exhausted. Although the injection of a painful bunion may be performed, it is not advised. The treatment not only does nothing to deal with the deformity, but the

steriod can weaken tissues, further progressing the deformity and making repair more difficult.

Also, overlying skin is almost always thinned because of the deformity and the steroids can result in further cutaneous thinning, breakdown and even chronic ulceration.

Patient-Specific Surgery

There are many different types of surgical procedures that correct the bunion deformity. Based on clinical examination and x-ray findings, as well as age and activity level, Dr. Leavitt will custom design the procedure for the patient. In addition to the genetic predisposition for the deformity, the surgeon must consider the mechanics of the foot in general when considering etiology and in planning surgical correction. Medical conditions also must be considered including, chronic gouty arthritic attacks, rheumatoid or other collagen-vascular diseases, connective tissue pathology such as Down’s syndrome, Ehler-Danlos Syndrome, Marfans Syndrome, generalized ligamentous laxity or neuromuscular conditions. Lastly, traumatic injuries resulting in soft tissue derangement can also be contributing factors.

Most bunion procedures are now performed on an out-patient basis in the hospital. The surgery to repair a bunion deformity is reconstructive



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



Bunions (continued)

and generally involves cutting of bone and repositioning the malaligned first metatarsal joint. Some form of fixation (wire, pin or screw) is used to hold the bone in position during healing. The most long-standing deformities may have significant alteration of the bone structure along with arthritic changes in the metatarsal joint. In these cases, an implant is used to replace the damaged joint and maintain alignment with satisfactory range of motion. The severity of the deformity and the patient's age, lifestyle and work situation will usually influence whether one foot or both feet are done at the same time. Thirty to forty per cent of the time, the bony angular deformity is so great that a procedure known as a "base wedge" must be performed. In these cases, the patients' feet must be non-weight-bearing for two weeks and they must use crutches.

Post-op Recovery Period

Most bunion procedures use some type of walking boot or shoe post-operatively but patients can walk with caution immediately. All patients are encouraged to take at least one week off from work after bunion surgery.

They usually can return to some form of regular enclosed shoe gear in three to nine weeks following the surgery.

Is surgery really necessary?

Bunion surgery is elective; however the deformity is progressive and non-reversible if not surgically corrected. Important factors to be considered in the decision to have surgery are 1) discomfort from the bunion or other toes, 2) inability to wear desired shoes and 3) limitations made on the patient's lifestyle and career activity levels.

The Bio-mechanics of Bunions

Bunions rarely develop without either the pre-existing or ongoing development of deformity of the first metatarsal phalangeal joint, such that there is the development of joint dislocation, joint irritation and a resultant bony prominence of a portion of the first metatarsal head. Overlying tissues become irritated solely because of the underlying protuberance with or without additional overlying irritation from shoe gear.

Bunion deformities can take various forms including: **hallux valgus** - a drifting of the hallux or great toe in the direction of the second toe, causing retrograde force upon the first metatarsal head with a resultant drifting of the first metatarsal away from the second metatarsal/second toe. As the great toe drifts laterally toward the second toe, the medial and lateral sesamoids, two intra-articular bones which articulate with the bottom of the first metatarsal head, begin to drift laterally under the stress. The permanent relocation or dislocation of the sesamoids from their preferred position, in following the direction of the great toe, is what helps to accentuate and maintain the deformity.

Hallux abducto-valgus--not only does the great toe begin to maintain a valgus position, but the lateral sesamoid (closest to the second metatarsal head) begins to dislocate and relocate upward along the side of the first metatarsal head next to the second metatarsal. The sesamoid, being invested within the joint structures and effectively attached to the bottom of the proximal phalanx, begins to take with it and rotate the great toe into what is known as a valgus position. Hallux abducto-valgus deformities are more challenging to repair and indicate a more prolonged and advanced deformity.

As the sesamoids, which should articulate within the sesamoidal grooves begin to dislocate and articulate with mismatched surfaces, there are two serious consequences of this ongoing dislocation: 1) Relocation of the extensor and flexor tendons to the great toe, and 2) Retrograde of reverse force by the base of the proximal phalanx back against the first metatarsal head, pushing it away from the second metatarsal. This dislocation enables an ongoing and sometimes rapid progression of the deformity. Patients will often relate a dramatic increase or occurrence of their deformity over a 2-3 month period.

Potential complications following bunion surgery include post-operative infection, delayed healing, prolonged swelling and joint stiffness.

Fortunately these complications, though infrequent, can be treated to preserve a good result.

Basically the aim of the foot surgeon is to appreciate the importance of joint realignment, the maintenance of bone length and position in respect to the other metatarsals and most importantly, individually tailoring those pro-

cedures in each and every case.

There is no such thing as a 'cook-book' bunion surgery. The reputation of bunion surgery is either very good or very bad depending almost solely upon the technical expertise of the surgeon. In our practices the outcome is very dependable because of a thorough peri-operative approach to each individual and serious review of any less than adequate results in order to help prevent subsequent problems with other patients.



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