Toe Fracture

CU ORTHOPEDICS - FOOT & ANKLE

Summary
Acute toe injuries including fractured toes are common. These injuries typically occur when a heavy object (i.e., weight) is dropped on the foot or the toes are kicked against a solid object such as a bed frame. Toe fractures can produce significant pain and swelling. Patients will often walk with a pronounced limp or they may not want to bear any weight on the foot. In addition to fractures, patients may also have symptoms from soft tissue injuries such as injuries to the ligaments and tendons surrounding the small joints of the toes. In each of these instances, as with the fracture, there would be a significant increase in blood flow to the relatively confined space of the toes. This leads to swelling and pain and can make walking and wearing shoes very difficult.

Clinical Presentation
Usually, patients with toe injuries will have an area of localized tenderness at the site of the injury. This is often associated with bruising, swelling, and sometimes burning pains. These symptoms will help make the diagnosis. In addition, the physician will assess the vascularity (blood flow) and sensation associated with the toes, as these can be compromised in a significant acute injury. It is important to determine if there are injuries (and symptoms) in other parts of the foot as well. It is also important to determine if the fracture is associated with an open wound. An isolated toe injury typically does not affect the stability of the foot. However, fractures or injuries further up the foot can prevent the patient from weight-bearing, or potentially create further damage with weight-bearing. Finally, it is important to assess the position and alignment of the toes. The toes should have normal length compared to the other foot and neighboring toes. Also, there should not be abnormal rotation or angular (i.e., crooked) deformities of the toes. Any obvious deformity suggests that a fracture or dislocation of one of the joints may be present. If there is a significant deformity these injuries often need to be realigned to ensure appropriate healing.

Imaging Studies
X-rays are taken to assess the bones for fractures as well as review the alignment of the toes and assess for injuries to the small joints of the toes. However, the clinical examination is perhaps more important than the x-rays in terms of choosing the correct treatment.

A CT scan can be useful in planning surgery if it is needed for fracture of the big toe and if the fragments are broken into multiple pieces.

Treatment
The vast majority of toe injuries including fractures can be treated without surgery. If the toe is in an acceptable position, the initial treatment consists of:

- Rest
- Elevation (to decrease swelling)
- Pain medication (as required)
- Ice (to decrease blood flow to the area)

As the patient feels more comfortable, they can begin mobilizing in a stiff-soled shoe. A very stiff shoe minimizes or eliminates motion through the toes, therefore, decreasing the symptoms as the patient starts to walk again. During the recovery period, it would be helpful for the

patient to keep the foot elevated as much as possible. Having the foot down in a dependent position will tend to cause significant swelling due to the increased blood flow to the toe area. This can produce more pain and potential skin problems.

A common way of treating an isolated toe fracture is with buddy taping. The toe is aligned with the adjacent toe. Soft spacers placed between the injured toe and the adjacent toe are then gently wrapped together. The uninjured toe serves as a splint for the injured toe.

A typical toe fracture will take about 6 weeks to heal. However, residual swelling and dysfunction can persist for even longer. It is not uncommon to still have residual symptoms following a significant toe injury even 3-4 months after the injury.

Surgical Treatment
Surgery and/or manipulation of the toe under anesthesia to correct alignment is reserved for patients who have a significant deformity. If a pronounced deformity is present, this will not correct on its own. In fact, if the alignment is not corrected, the toe may become very stiff in the abnormally aligned position, producing worsening symptoms, arthritis, and even impacting the neighboring toes. In these instances, patients may benefit from manipulation and even fixation of the fracture. Fracture fixation often includes a long wire called a K-wire. The patients are given a local or general anesthetic, the toe is manipulated into an improved position reducing the fracture deformity. The fracture is then stabilized with either a K-wire or sometimes merely with buddy taping. In rare instances, very small plates can be applied to the bones to hold the alignment as the fracture heals. Typically this technique of fixing the toe fractures with a plate and screws is reserved for displaced fractures of the great toe.

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