PEDIATRIC FOOT OR ANKLE SPRAIN
MAY BE A MORE COMPLEX GROWTH PLATE INJURY

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X-rays can fail to provide a complete and accurate picture of the diagnosis.

Injuries to the growth plate in children may cause damage to the structures at the end of the bone, which allow the child's bone to grow to full adult size. These injuries may be misdiagnosed as a simple sprain of the foot or ankle. However, a more complex injury may be present.

Growth plates, which start to close between the ages of thirteen and eighteen can be damaged in incidents such as simple falls, sports injuries, automobile accidents or other major or minor trauma. If not recognized and treated early, a child's growth plate injury can lead to shortening of the bone (growth stops) as the growth plate may close prematurely. Angular deformities of the bone (a curve) may also develop. The severity of these deformities depends on the age at the time of injury, extent of the injury and the part of the growth plate that has been damaged. Certain portions of the growth plate may be injured affecting its growth while other parts grow more normally thus causing a bowing of the bone.

Signs and symptoms of a growth plate injury may mimic a sprain. These injuries occur more frequently than realized. There will always be pinpoint tenderness on the bone's growth plate and a degree of swelling that is proportional to the degree of injury to the area. The child will often limp and try to avoid the body part. The injured body part may often look deformed. Normal treatment for a sprain may involve simple observation and application of an ace bandage or brace. This treatment for a growth plate injury that is severe may be devastating.

X-rays are always taken to visualize the bone injury. In some cases the x-rays may be negative. However, the tenderness that is felt by the patient is always indicative of a simple fracture to the growth plate despite these negative x-ray findings. In more moderate to severe cases the bone injury may be visualized. When in doubt a CT scan may be needed to further evaluate the bone injury.

Treatment Options (early diagnosis is crucial):

1. Immobilization in a below-the-knee cast with or without crutches may be necessary if the growth plate is well aligned. These injuries will heal on their own within six to eight weeks. The younger the child, the faster the healing process.

2. If the injury has caused misalignment of the growth plate it can sometimes be carefully manipulated back into place and then protected with a cast. The cast would be necessary for a minimum of six to eight weeks. Nonweightbearing would be mandatory for part of that time.

3. If the misalignment is more severe and not able to be manipulated back into its normal position, surgery would be necessary to restore the growth plate to its proper position. This may help avoid later problems including malalignment or premature growth plate closure that may cause the extremity to be shortened and crooked.

The most important thing is immediate diagnosis and treatment.