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Puncture Wounds

What is a Puncture Wound?

Puncture wounds and cuts are not the same. A puncture wound has a small entry hole caused by a pointed object—for example, a nail that you step on. In contrast, a cut is an open wound that doesn't produce a "hole" but rather a long tear in the skin. Puncture wounds require different treatment from cuts because these small holes in the skin can disguise serious injury.

Puncture wounds are common in the foot, especially in warm weather when people go barefoot. But even though they occur frequently, puncture wounds of the foot are among the most inadequately treated conditions. That's a big concern, because if not properly treated, infection or other complications can develop.

Getting proper treatment within the first 24 hours is especially important with puncture wounds because they carry the danger of embedding the piercing object ("foreign body") under the skin. Research shows that complications of puncture wounds could be prevented if the patient seeks professional treatment right away.

Foreign Bodies in Puncture Wounds

A variety of foreign bodies can become embedded in a puncture wound. Nails, glass, toothpicks, sewing needles, insulin needles, and seashells are some common offenders. In addition, pieces of your own skin, sock, and shoe can be forced into the wound during a puncture, as well as dirt and debris from the object. By their nature, all puncture wounds are dirty wounds because they involve penetration of an object that isn't sterile.

Regardless of what the foreign body is, anything that remains in the wound increases your chances of developing other problems, either in the near future or down the road.

Severity of Wounds

There are different ways of determining the severity of a puncture wound. Depth of the wound is one way to evaluate how severe the wound is. The deeper the puncture, the greater the likelihood that complications, such as infection, will develop. Many patients cannot judge how far their puncture extends into the foot. Therefore, if you've stepped on something and the skin was penetrated, seek treatment as soon as possible.

The type and the "cleanliness" of the penetrating object also determine the severity of the wound. Larger or longer objects can penetrate deeper into the tissues, possibly causing more damage. The dirtier an object, such as a rusty nail as opposed to a sewing needle, the more dirt and debris are dragged into the wound, which may increase the chance of infection.

Another thing that can determine wound severity is whether you were wearing socks and shoes or were barefoot. Particles of socks and shoes can get trapped in a puncture wound.



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Treatment of Puncture Wounds

The key to proper treatment is this: A puncture wound must be cleaned properly and monitored throughout the healing process to avoid complications. Even if you have gone to an emergency room for immediate treatment of your puncture wound, see a foot and ankle surgeon for a thorough cleaning and careful follow-up. The sooner you do this, the better—within 24 hours after injury, if possible.

The foot and ankle surgeon is trained to properly care for these injuries and will make sure your wound is properly cleaned and no foreign body remains. He or she may numb the area, thoroughly clean inside and outside the wound, and monitor your progress. In some cases, x-rays may be ordered to determine whether something remains in the wound or if bone damage has occurred. To treat or prevent infection, antibiotics may be prescribed. Once you return home, be sure to carefully follow the foot and ankle surgeon's instructions to prevent complications. See "Puncture Wounds: What You Should Do" table below for more information.

Avoiding Complications

Infection is a common complication of puncture wounds that can lead to serious consequences. Sometimes a minor skin infection evolves into a bone or joint infection, so you should be aware of signs to look for. A minor skin infection may develop in 2 to 5 days after injury. The signs of a minor infection that show up around the wound include soreness, redness, and possibly drainage, swelling, and warmth. You may also develop a fever. If these signs have not improved, or if they reappear in 10 to 14 days, a serious infection in the joint or bone may have developed.

Other complications that may arise from inadequate treatment of puncture wounds include painful scarring in the area of the wound or a hard cyst where the foreign body has remained in the wound. Although the complications of puncture wounds can be quite serious, early proper treatment can play a crucial role in preventing them.

Puncture Wounds: What You Should Do

- Seek treatment right away.
- Get a tetanus shot if needed (usually every 5 years).
- See a foot and ankle surgeon within 24 hours.
- Follow your doctor's instructions:
 - Keep your dressing dry.
 - Keep weight off of the injured foot.
 - Finish all your antibiotics (if prescribed).
 - Take your temperature regularly.
 - Watch for signs of infection (pain, redness, swelling, fever).
 - Call your doctor if you have any of these signs.