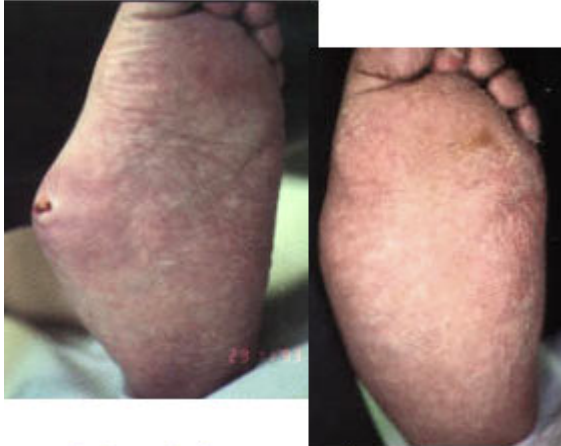


Charcot Foot Syndrome (or *neuropathic arthropathy*)

In 1868 Jean Marie Charcot, a French physician, named this bone and joint disease.



Before and after reconstructive surgery.

Charcot neuroarthropathy is a degenerative condition that affects the foot joints and is most often associated with diabetes.

Definition: A weakening and softening of the bones due to extensive nerve damage. Depending on the severity, the weakened bones can lead to disability, immobility, and amputation. Charcot foot syndrome is very serious, sometimes hard to detect, and most often occurs in patients with diabetes mellitus. Because diabetes mellitus involves elevated blood sugar levels, monitoring and controlling blood sugar levels is vital to prevention.



Why does it happen? Two main ideas:

- *Neurotrauma:* Charcot foot happens when there is severe nerve damage that progresses to a weakening and collapsing of the foot bones. Over time the loss of normal sensation leads to mini traumas and tears to the joints. Charcot foot commonly affects the bones in the mid-foot and forefoot, with the tarsometatarsal the most common place for arthropathy. It is estimated that 65% of all diabetic patients develop some kind of peripheral nerve damage and of those, around 25% develop Charcot foot syndrome.

- *Neurovascular*: With patients having compromise autonomic nervous systems, damaged joints receive imbalanced blood flow, usually too much. With excess blood flow, re-absorption of the bone occurs. (osteoclastic resorption)

Who gets this?

It affects men and women equally. Half of all patients can recall a past traumatic injury to the foot prior to the development of Charcot. Even after a small trauma, Charcot can develop quickly. Often the symptoms of Charcot foot mimic cellulites and gout, which make it sometimes challenging to diagnose accurately. The “rocker bottom” deformity when seen indicates the later stages of Charcot foot.

How does it occur?

- Initially it occurs as a result of neuropathy- a dramatic loss of feeling/sensation in the nerves of the feet. This is quite common in the diabetic patient.
- With nerve loss, tiny bone fractures can arise without the patient feeling them. Improperly aligned bones grind against each other causing an audible grating sound. If left untreated ulcers, foot deformations, and in extreme case, amputation may occur.

Symptoms: Charcot foot is one of the more difficult syndromes to detect. It is recommended that both the patient and the doctor keep vigilant for any changes in the feet. Typical symptoms include:

- Swelling and redness
- Pain in the affected area that does not resolve itself with typical treatment.
- One foot exhibiting skin temperature 7 degrees higher and a localized warmth to the touch.

Treatment:

- *Foot cast/ boot*: In the event Charcot foot is detected early, a foot cast or boot will be used on the affected foot. This offers stabilization and helps the bones to heal properly. No walking or weight bearing is permitted during this time to ensure healing.

- *Surgery*: Sometimes tiny bone fragments and/or cartilage are removed or in the case of collapsed arches, a mid foot alignment procedure is performed.
- *Surgical implantation*: Metal plates and/or screws are placed inside the foot to promote realignment.

Prevention:

- Controlling blood sugar is essential. Healthy eating and regular blood glucose checks daily are also recommended. Stabilized blood sugar helps reduce further nerve damage.
- Avoid injuries especially to the feet and if injured seek medical treatment immediately.
- In addition to regular doctor visits, monitor both feet for swelling, heat, and other changes.