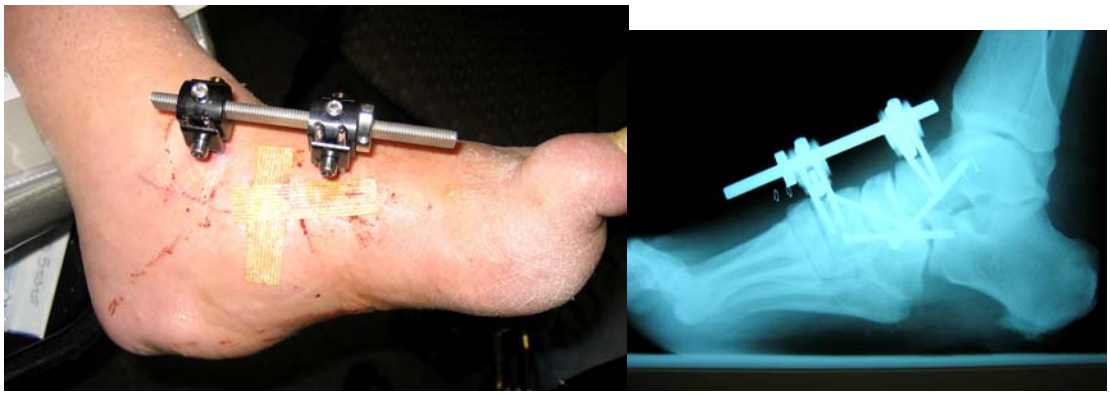
Case Study: Acute Charcot Neuroarthropathy

History: The patient is a 68 year old male with a significant history for type 2 diabetes(for the past 20 years). In December of last year he had a revascularization procedure performed to the left lower extremity for a gangrenous ulceration on his left heel. Since then the ulcer has slowly been decreasing in size. Approximately 14 days ago, the patient noticed swelling in his left foot and leg and relates that his "arch has fallen". However, he denies any trauma to the extremity. Initially he was worked up for a cellulitic infection by his primary care physician, but did not respond to IV antibiotics. X-rays were finally taken and revealed an acute charcot collapse.

Physical: Left foot examination reveals a red, hot, swollen foot. There is gross deformity with loss of the medial longitudinal arch. Also, there is a prominence noted on the medial aspect of his midfoot. He does have palpable dorsalis pedis and posterior tibial pulses.

X-ray Exam:Reveals a medial dislocated navicular with collapse of the talonavicular joint. No fractures or other dislocations are seen.

Treatment: The decision was made to operatively repair this acute dislocation. The patient was taken to the operating room approximately 2 ½ weeks following the onset of the charcot event. The navicular was reduced and fixated with a combination of internal and external fixation. At the same time the Achilles Tendon was lengthened. The patient is now 4 weeks post surgical reconstruction and is doing great. He will be completely non-weight bearing for 6-8 weeks then will be bear weight with protection for another month.



Discussion: Charcot Neuroarthopathy is one of the most devastating lower extremity complications of neuropathy. World wide, diabetes mellitus is the most common cause of Charcot foot. This disorder is characterized by a red, hot, swollen foot in the presence of neuropathy. Differentiating Charcot versus an infection can be very challenging, though needs to be done in a timely manner. Obtaining WBC counts, CRP and foot x-rays can be helpful in these situations. Sometimes WBC labeled bone scans or MRI may be indicated in complicated cases.

There are many theories why charcot occurs. Some believe there is an uncontrolled inflammatory response to a local trauma, which is often unknown to the patient because of neuropathy. This leads to a weakening of the ligaments that support the joints of the foot and ankle. Since the Achilles tendon tends to be contracted in these patients, an increased amount of stress is placed across the midtarsal and tarsometatarsal joints, leading to collapse in those areas. This case shows an interesting dislocation of the navicular with preservation of all other surrounding joints. The key for this particular case is the early intervention. Often, these patients are seen as they progress on to the consolidation stages of Charcot, making reduction very difficult. However, the gold standard remains to immobilize the extremity until the acute Charcot process had stopped. Each patient with this disorder is different and needs to be evaluated, with the appropriate treatment plan, on a case by case basis.

If there are any questions regarding this case please feel free to call us.

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