Summary

Charcot neuroarthropathy is a non-infective, destructive lesion with progressive deterioration of a joint and is characterized by a loss of sensation. When left untreated, this condition can lead to pathological fractures, joint dislocation/sublaxation and deformity.

It is of utmost importance to diagnose Charcot neuroarthropathy early and initiate treatment before a significant deformity occurs this disorder is not limited to patients with diabetes as it can also affect patients with other neurological disorders such as syringomyelia, congenital insensitivity to pain, leprosy, syphilis, myelomeningocele and alcoholic.

The use of classification schemes that take into account the clinical presentation as well as radiographic appearance can then help to formulate treatment algorithm for the patients with Charcot neuroarthropathy.

Its etiology is combination of neurovascular and neurotraumatic theories.

1. **Stage I - Developmental (acute)**

Hyperemia due to autonomic neuropathy, bone and ligaments weakens, Diffuse swelling, joint laxity, subluxation, frank dislocation, fine periarticular fragmentation, debris formation

2. **Stage II - Coalescence (quiescent)**

Absorption of osseous debris, fusion of larger fragments, Dramatic sclerosis, Joints become less mobile and more stable.

3. **Stage III - Consolidation (resolution)**

Osseous remodeling

Clinical presentation

Red, hot, swollen foot typically painless or only mild painful unilateral swelling of extremity. Orthopeadic examination may reveal joint hyper mobility with crepitus +/-cutaneous ulceration As the disease progresses, longitudinal and transverse arches of foot may collapse, creating a rocker bottom foot .Some degree of sensory deficit always present .Deep tendon reflexes, vibratory sensation, and proprioception may be diminished or absent ,due to autonomic sympathectomy, may see bounding pulses, rubor and anhidrosis +/- xerosis .

It's most common locations are the foot, ankle, and knee joints, and it may occur at the shoulder or the wrist.

Estimation of both ESR is normal and the WBCs count is within normal.

Brodsky test, done to distinguish a Charcot process from infection in patients with associated plantar ulcers. With the patient supine, the involved lower extremity is elevated for five to 10 minutes. If swelling and rubor dissipate, the diagnosis of a Charcot process is supported. If the swelling and rubor persist, an infectious process is likely.

Radiological examination used for diagnosis and staging and other investigation used for differentiate Charcot from other resembling conditions.

Increased dermal temperature and synovial biopsy examination is highly suggestive for the diagnosis with the clinical picture.

Initial treatment should include offloading, usually by some forms of casting according to the stage of the disease and the deformity present and medical treatment.

As regards prevention it begins with control of diabetes and care of diabetic foot as Charcot neuroarthropathy is thought to be a preventable disorder for which patient and physician education plays a key role. Operative treatment is indicated when, (I) the severity of the foot and/or ankle deformity is not amenable to conservative management (ii) marked instability and/or malalignment (iii) for recurrent ulceration(s). A painful Charcot joint is rarely the sole reason for operative treatment. Operative management varies between arthrodesis, exostectomy, internal fixation and or external fixation and amputation.