

# DRUG INDUCED BILATERAL CHARCOT NEUROARTHROPATHY IN A NON DIABETIC PATIENT

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## INTRODUCTION / BACKGROUND

- We present a rare case of drug induced bilateral Charcot neuroarthropathy (CN) in a non-diabetic patient with rheumatoid arthritis (RA); emphasizing the importance of early multidisciplinary action to support limb salvage
- Leflunomide is a DMARD that inhibits dihydroorotate dehydrogenase to reduce RA inflammation (Greene, 1994)
- Peripheral neuropathy is a recognized adverse effect of leflunomide, attributed to mitochondrial dysfunction and axonal injury (Bonnell, 2004).

## CLINICAL HISTORY

A 55F on leflunomide since 2008 presented with bilateral midfoot pain and swelling. This was initially treated as inflammatory OA (Figure 1) though later showed progressive midfoot collapse on serial imaging, suggestive of CN (Figures 2/3). Extensive laboratory testing ruled out diabetes, B12 deficiency, thyroid disease, alcohol use, and other neuropathy causes. Multidisciplinary review (podiatry, rheumatology, neurology) identified leflunomide as the likely etiology. Leflunomide was discontinued; patient underwent prolonged immobilization, followed by transition to custom therapeutic footwear. EMG/NCV was normal, likely due to testing after drug withdrawal.

## RESULTS

- After leflunomide discontinuation and immobilization, no further midfoot collapse occurred.
- Radiographs demonstrated stable alignment; the patient remained plantigrade and ulcer-free.
- At 1-year follow-up, she achieved full ambulation, walking >10,000 steps/day as a courier, with preserved function.

## DISCUSSION / LITERATURE REVIEW

- Leflunomide-associated neuropathy is uncommon; recovery improves with early drug cessation (Bonnell, 2004).
- Prior reports describe reversible neuropathy in RA patients (Carulli, 2002; Kho, 2007).
- Recent evidence supports small and large fiber involvement (Elrefaey et al., 2023).
- Prior studies show 4.7% incidence of leflunomide-induced neuropathy, with 0.6% developing CN (Kaur, 2024).

## CONCLUSIONS

- Long-term leflunomide can cause neuropathy severe enough to produce Charcot neuroarthropathy in non-diabetic patients.
- Clinicians should consider medication-related etiologies when evaluating unexplained or atypical CN changes.
- Early diagnosis of CN, immobilization, and interdisciplinary management can preserve limb structure and maintain functional outcome

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## FIGURES

Figure 1: Initial radiographs with “inflammatory OA” from RA



Figure 2: Radiographs 6 mo later suggestive of CN



Figure 3: Progressive midfoot collapse particularly at the talonavicular joint (TNJ)

