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Is Charcot osteoarthropathy a symmetrical disease?

NL Petrova, DA Elias, ME Edmonds

Diabetic Foot Clinic and Department of Diagnostic Radiology

King's College Hospital, London, UK

We have noted a remarkable symmetry in the radiological changes in patients with bilateral Charcot osteoarthropathy.

We studied 19 patients with bilateral Charcot osteoarthropathy and compared the site of involvement in the new onset foot with that of the contralateral foot and classified the patterns of osteoarthropathy from I to V according to Sanders and Frykberg classification. Median time between 1st and 2nd involvement was 2 years (1-4 years). Bilateral symmetry was observed in 17 patients (89.5%), with the commonest presentation being the combination of pattern II (tarsal-metatarsal) and III (tarsal), observed in 9 patients.

In 5/17 patients, although there was symmetry, there were more extensive changes in the previously affected foot compared with the recently involved site. Only 2 patients (10.5%) presented with diverse changes: one with pattern I (metatarsal-phalangeal) as the first site and pattern II at the second, and the other, with pattern II+III and IV (ankle) in the first and second sites. There was a strong correlation between site of first and contralateral involvement ($r=0.772$, $p=0.0001$).

Thus the pathway to Charcot osteoarthropathy is anatomically similar in both feet.

We propose that this pathway is triggered at different times in each foot by random external trauma.