

India Becoming an Emerging Diabetic Capital Burdened with an Explosion of Unrecognized Charcot Feet

Rajesh Simon¹, Venu Kavarthapu²

Journal of Foot and Ankle Surgery (Asia-Pacific) (2023): 10.5005/jp-journals-10040-1303

With the turn of the 21st century, the burden of diabetes has increased globally manifold. The prevalence of diabetes in India has increased by 67% over the last quarter, as per the 2017 report by the Indian Council for Medical Research, Institute for Health Metrics and Evaluation, and Public Health Foundation of India.¹ Though ethnically, Indians seem to be more prone to diabetes as compared to Caucasians, the present exponential increase in India is mainly attributed to the rapid epidemiological transition to urbanization fueling an increasing prevalence of obesity and unhealthy lifestyles. According to the report by International Diabetes Federation, in 2021, India had an estimated 87 million adults aged between 20 and 79 years with diabetes. This number is expected to rise to 151 million by 2045, making the country with the highest number of people with diabetes in the world.² Adding to the woes, the access to quality healthcare, including diabetes screening, diagnosis, and multidisciplinary care (MDC), for diabetic foot presentations remains inadequate.

Charcot foot, also known as Charcot neuroarthropathy (CN), is a rare but serious complication of diabetes that can lead to bone and joint damage in the feet resulting in significant disability if not treated promptly. Although there is no specific data available on the prevalence of CN in patients with diabetes across India, given the link between diabetes and CN, various literature suggests that the conversion rates to CN range from 0.5 to 13%.³ A study which, was done in South India recently suggested the conversion to CN as high as 9.8%.⁴ It is very likely that there would be a humongous burden of Charcot foot complications, which presently are often unrecognized and get untreated or mismanaged due to a lack of awareness amongst both the public and the treating physicians, in addition to the currently limited access to MDC in many parts of the country.

The patient outcomes of CN can be improved by updating the medical curriculum about this disease, increasing awareness among patients and clinicians, educating the clinicians that manage patients with diabetes, promoting healthy lifestyles, and improving access to specialist healthcare services. Early diagnosis and appropriate management can help prevent CN complications and improve treatment outcomes. It is important that physicians of different specialties that manage diabetic foot presentations understand the pathophysiology of CN and are aware of its risk factors. CN should be considered if a patient with diabetes presents with foot swelling, redness, and local warmth.

The management of Charcot foot has improved in the last decade due to a better understanding of its pathophysiology and the improvement in surgical outcomes. Patients with CN carry almost three times increased risk of mortality despite being younger at presentation.⁵ This is mainly due to poor access to the MDC. Total

¹Department of Orthopaedics, Lakeshore Hospital, Kochi, Kerala, India

²Department of Orthopaedics, King's College Hospital, London, United Kingdom

Corresponding Author: Rajesh Simon, Department of Orthopaedics, Lakeshore Hospital, Kochi, Kerala, India, Phone: +91 9447634466, e-mail: rajeshsimon@gmail.com

How to cite this article: Simon R, Kavarthapu V. India Becoming an Emerging Diabetic Capital Burdened with an Explosion of Unrecognized Charcot Feet. *J Foot Ankle Surg (Asia-Pacific)* 2023;10(S-1):S1-S2.

Source of support: Nil

Conflict of interest: None

contact casting is proven to be the gold standard treatment during the early stages of Charcot foot.⁶ However, in the later stages, surgical repair in the form of exostectomy or reconstruction may become necessary if the foot deformity cannot be adequately offloaded in an orthotic. The goal of surgical management is to provide a stable, ulcer-free, and plantigrade foot that can accommodate therapeutic footwear for self-ambulation.⁷ The concept of super construct fixation for Charcot foot reconstructions that includes the principle of "long-segment, rigid and durable internal fixation, with optimal bone opposition, and local antibiotic elution" delivered in a multidisciplinary environment has revolutionized the ability of the clinicians to provide functional limb salvage for such complex presentations. Routine amputation of a Charcot foot even in the presence of an active infection, should no longer be considered mandatory.⁸

Multidisciplinary care (MDC) is critical in providing the optimal management of Charcot foot presentations. India and many countries in Asia have seen a recent improvement in access to the MDC for patients presenting with CN. However, as of today, it is still awfully insufficient! Let us all strive together to upskill ourselves and contribute to improving access to the MDC so that we can provide a stable, plantigrade, ulcer-free, and loadable foot for all patients presenting with a limb-threatening Charcot foot! As Swami Vivekananda puts in his inspirational message, let all clinicians that manage diabetic foot arise, awake, and stop not until their common goal is reached.

REFERENCES

1. Indian Council of Medical Research, Public Health Foundation of India, and Institute for Health Metrics and Evaluation. India: Health of the Nation's States - The India State-Level Disease Burden Initiative. New Delhi: ICMR, PHFI and IHME; 2017.

2. International Diabetes Federation. Diabetes Atlas, 10th edn. Brussels, Belgium: International Diabetes Federation. 2021.
3. Younis BB, Shahid A, Arshad R, et al. Charcot osteoarthropathy in type 2 diabetes persons presenting to specialist diabetes clinic at a tertiary care hospital. *BMC Endocr Disord.* 2015;15:28. DOI: 10.1186/s12902-015-0023-4
4. Salini D, Harish K, Minnie P, et al. Prevalence of Charcot arthropathy in type 2 diabetes patients aged over 50 years with severe peripheral neuropathy: a retrospective study in a tertiary care south Indian hospital. *Indian J Endocrinol Metab* 2018;22(1):107–111. DOI: 10.4103/ijem.IJEM_257_17
5. Chaudhary S, Bhansali A, Rastogi A. Mortality in Asian Indians with Charcot's neuroarthropathy: a nested cohort prospective study. *Acta Diabetol* 2019;56(12):1259–1264. DOI: 10.1007/s00592-019-01376-9
6. Griffiths DA, Kaminski MR. Duration of total contact casting for resolution of acute Charcot foot: a retrospective cohort study. *J Foot Ankle Res* 2021;14(1):44. DOI: 10.1186/s13047-021-00477-5
7. Kumar G, Simon R, Jose DP. Charcot foot – current concepts. *J Orthop Assoc South Indian States* 2021;18(1):10–17. DOI: 10.4103/joasis.joasis_12_21
8. Kavarthapu V, Budair B. Two-stage reconstruction of infected Charcot foot using internal fixation: a promising functional limb salvage technique. *Bone Joint J* 2021;103-B(10):1611–1618. DOI: 10.1302/0301-620X.103B10.BJJ-2021-0339.R2