

# Atraumatic Lisfranc dislocation of Foot due to Charcot Arthropathy

## Case Report

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## Abstract

Atraumatic Lisfranc dislocation is uncommon and is associated with underlying conditions like Charcot neuropathy<sup>1</sup>. We present a rare case of non-traumatic Lisfranc dislocation in a diabetic patient with Charcot arthropathy to increase awareness as early detection and treatment can limit disability.

Keywords: Lisfranc, trauma, Charcot Neuropathy

## Introduction

Lisfranc injury is characterised by fracture-dislocation of the tarsometatarsal joint (Lisfranc's joint)<sup>2</sup>. Traumatic Lisfranc injury is uncommon. The rarity is due to the anatomical stability of the joint complex. Non-traumatic Lisfranc dislocation is very rare and is associated with underlying conditions like Charcot neuropathy.

## Case report

A 62-year-old man with long-standing Type 2 diabetes, attended the Urgent Care Centre with pain and swelling in his left foot. There was no history of trauma. A plain X-ray of the foot revealed lateral dislocation of the 2nd - 5th tarsometatarsal joints with chronic Charcot foot changes. A non-traumatic Lisfranc dislocation due to Charcot neuropathy was diagnosed and the patient was referred to the Orthopaedic team for further management.

## Discussion

Charcot foot refers to progressive degenerative changes in the foot joints caused by sensory deficits due to neuropathy<sup>3</sup>. Diabetes is by far the most common cause of Charcot foot<sup>4</sup>. This is usually a painless condition picked up incidentally in routine X-rays. The Lisfranc joint is the articulation between the midfoot and the forefoot. Numerous strong ligaments support these tarsometatarsal joints making them very stable and therefore Lisfranc injury is uncommon. Atraumatic Lisfranc dislocation is a rare condition and can occur in patients with underlying Charcot arthropathy. Patients usually present with pain and swelling to the foot which is relieved by rest and elevation<sup>5</sup>. A plain X-ray of the foot will reveal a loss of normal alignment of the medial borders of the 2nd metatarsal and intermediate cuneiform<sup>6</sup>.

Treatment for Lisfranc dislocation in Charcot's foot can be operative or conservative. Operative treatment includes open reduction and internal or percutaneous fixation or primary arthrodesis<sup>7</sup>. Conservative management relies on prolonged immobilisation for maintaining tarsometatarsal joint congruity<sup>8</sup>.

## Conclusion

Diagnosis of non-traumatic Lisfranc dislocation should be suspected in diabetic patients attending with atraumatic pain and swelling to the foot<sup>9</sup>. Early detection is possible by closely examining foot X-rays so that appropriate treatment can be instituted early to prevent deformity.

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#### References:

1. Desmond EA, Chou LB. Current Concepts Review: Lisfranc injuries. *Foot Ankle Int.* 2006;8:653–60.
2. Crim J. MR imaging evaluation of subtle Lisfranc injuries: the midfoot sprain. *Magn Reson Imaging Clin N Am.* 2008;16:19–27. doi: 10.1016/j.mric.2008.02.007.
3. Frykberg RG, Mendeszoon Management of the diabetic Charcot foot. *Diabetes Metab Rev.* 2000;16:S59–S65.
4. J.M. Giurini, J.S. Chrzan, G.W. Gibbons, G.M. Habershaw. Charcot's disease in diabetic patients. Correct diagnosis can prevent progressive deformity *Postgrad Med*, 89 (4) (1991), pp. 163-169
5. Sanders LJ. The Charcot foot: historical perspective 1827–2003. *Diabetes Metab Res Rev.* 2004;20(1):S4–8.
6. Cassebaum WH. Lisfranc fracture-dislocations. *Clin Orthop.* 1963;30:116–129.
7. Schon LC, Easley ME, Weinfeld SB. Charcot neuroarthropathy of the foot and ankle. *Clin Orthop.* 1998;349:116–31. doi: 10.1097/00003086-199804000-00015.
8. G.B. Holmes Jr., N. Hill. Fractures and dislocations of the foot and ankle in diabetics associated with Charcot joint changes *Foot Ankle Int*, 15 (1994), pp. 182-185
9. S.M. Rajbhandari, R.C. Jenkins, C. Davies, S. Tesfaye. Charcot neuroarthropathy in diabetes mellitus. *Diabetologia*, 45 (2002), pp. 1085-1096