

Surgically induced Charcot's neuroarthropathy following single ray amputation in the diabetic foot

Enrico Brocco, Bogdan Mimor, Sasa Ninkovic, Mariagrazia Marinescu, Filippo Ometto, Barbara Calore, Nelson Ojeda, Marco Manzi, Sara Sorgentone, Christine Whisstock U.O. Piede Diabetico, Policlinico Abano Terme, P.zza Colombo 1, 35031 Abano Terme, PD- ITALY

The aetiology of Charcot neuroarthropathy is still not entirely clear. In literature there are few findings of a possible role of minor surgery (ray amputation) as a pathogenic factor of Charcot neuroarthropathy. To test whether the amputation of a single ray may have a pathogenic significance on the development of Charcot neuroarthropathy, we evaluated 158 diabetic subjects (67 females, 91 males, aged between 18 and 92 years) who underwent amputation of a single ray between January 2007 and September 2009, recording the number of patients developing Charcot neuroarthropathy after surgery. All patients were evaluated for presence or absence of arterial disease.

We found the onset of Charcot neuroarthropathy in 10.1% of the evaluated subjects with no significant differences by gender (F: 7/67 M: 9/91).

All subjects who developed Charcot neuroarthropathy (16/158) were under 63 years of age and considering this selected group of patients the rate of development of Charcot neuroarthropathy was 24.6%. In the amputation of the 1st ray, the rate of development of Charcot neuroarthropathy was 6.1%, while in the amputation of the remaining rays (2nd - 5th) the rate was 16.4%. Charcot neuroarthropathy was found only in subjects free from arterial disease.

Conclusions: Charcot neuroarthropathy appears in a fairly high percentage of individuals undergoing amputation of a single ray. This type of surgery seems to be correlated with the development of Charcot neuroarthropathy especially in younger subjects, in absence of diabetic arterial disease. Further studies are needed to confirm these findings.