

Prevalence of Hallux Rigidus in Patients with Ankle Arthritis

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Introduction/Purpose: Hallux rigidus (HR) is a degenerative disease of the first metatarsalphalangeal (MTP) joint, and the most common type of foot arthritis. It affects 2.5% of population aged over 50 years. During the gait cycle, the MTP joint normally carries a force of about 119% body weight. We hypothesize that the altered gait mechanics in patients with end stage ankle arthritis would increase the stress on the MTP joint resulting in hallux rigidus. The purpose of the study was to evaluate the prevalence of radiographic hallux rigidus in a population with ankle arthritis, its association with factors such as gender, age, and severity of the disease compared to the normal population.

Methods: Patients from a prospectively-collected total ankle database were screened for the inclusion in the present study. All patients with ankle arthritis who underwent a primary total ankle arthroplasty (TAA) between November 2006 and November 2017 with anteroposterior and lateral views on foot x-rays within 3 months pre or postoperative were included. Foot x-rays were reviewed to assess the prevalence of radiographic hallux rigidus and to grade the severity of diagnosis according to Coughlin and Shurnas Radiographic Classification. The association among the grades of severity, demographics, and bilateral involvement were evaluated.

Results: A group of 870 patients out of 1044 patients who underwent TAA were included in the study. The mean age was 63 years (standard deviation 10.3). The prevalence of HR in the total group was 72.9% with a slightly higher proportion in males compared to females (51.7% versus 48.3%). The distribution among the grades of severity was grade 1, 58%; grade 2, 24%; and grade 3, 18%. Although, we did not find an association between prevalence and gender ($P=0.2$) or severity ($P=0.37$); HR grade 2 and grade 3 were higher in females. Bilateral involvement was found in 16.4% of patients with HR.

Conclusion: The prevalence of radiographic hallux rigidus in a population with altered gait mechanics was significantly higher compared to that reported in the literature in the normal population. However, no association among demographic factors such as age or gender was found. Women tended to present a more severe diagnosis compared to men but the difference was not statistically significant.

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