Clinical Research on Foot & Ankle

Perspective Open Access

A Brief Note on Podoscopic Study of Foot Deformities in Down Syndrome Patients

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Perspective

Down syndrome (DS), also known as trisomy 21, is the most common chromosomal abnormality; with a frequency of 1/660 live births. This syndrome is associated with a variety of abnormalities. While the majority of these patients' care focuses on detecting and treating life-threatening defects such as cardiac, pulmonary, and neoplastic disorders, there is an increasing demand for orthopedic anomaly therapy and management due to their impact on these patients' quality of life. Appropriate foot morphology is required for normal gait, and several foot disorders are linked to more proximal lower limb abnormalities [1]. While the majority of studies have focused on major orthopedic deformities in patients with DS, such as scoliosis, atlanto-axial instability , hip subluxation, slipped capital femoral epiphysis, Legg-Calve-Perthes syndrome, and patellar instability, a few studies have looked into less debilitating orthopedic anomalies of the foot, such as flatfoot , hallux valgus, syndactyly Despite the high occurrence of foot anomalies in DS communities, current research on various foot deformities such as hallux varus, overriding fifth toe, short metatarsals, and metatarsus adductus is lacking.

Furthermore, in order to conclude significantly higher prevalence of anomalies in patients with DS, a control group originating from the same ethnic origin as the DS group is required, as it has been shown that the phenotype of patients with DS is influenced, at least in part, by their parents' genotypes. None of the large descriptive investigations on foot malformations in DS patients have compared reported prevalence to age-matched control groups. In addition, not all DS patients have the same podiatric and podoscopic abnormalities. As a result, this wide range of anomalies could be linked to other etiologic variables, and some foot abnormalities could be linked to each other as well as other factors such joint laxity, gender, or weight. There is only one has looked into a few clinically important links between the abnormalities reported in DS patients. More correlation studies would be helpful in determining if the reported anomalies are causative or coincidental [2].

As a result, the primary goal of this study is to evaluate foot deformities in DS patients to an age-matched control group. The study's secondary goal is to look into the links between these anomalies and possible etiological variables. Our hypothesis was that people with DS have a higher prevalence of a variety of foot deformities, and that this prevalence may be explained, at least in part, by their increased weight and joint laxity. The two groups were subjected to a thorough podiatric clinical examination in order to rule out any of the following foot deformities: hallux valgus, hallux varus, overriding fifth toe, metatarsus adductus, widened space between first and second toes, short metatarsals, syndactyly, and/or clinodactyly. Even when there is no frank hallux varus, widened space between the first and second toes was characterized as having parallel toes with no touch between them [3]. The presence of a lateral bony prominence over the hallux's metatarsophalangeal joint, as well as a lateral deviation of the hallux, was characterized as hallux valgus. A medial deviation of the hallux with or without a wider space between the first and second toes was classified as hallux varus. These afflictions were solely examined clinically, and neither the control nor the DS participants had their feet radiographed. The Shapiro-Wilk test was used to ensure that all quantitative variables were normal. To compare the two groups' varied features, mean comparison tests were utilized [4]. The Mann Whitney U test was used to compare the anthropometric measurements of the control and DS groups. Pearson's chi-squared test and Fisher's exact test were used to assess significant differences in deforestation prevalence between the control and DS groups. When comparing the prevalence of foot deformities between the two groups, an ordinal regression (with the flatfoot grades as the dependent variable) and a series of binary logistic regressions (with the rest of the foot deformities as dependent variables) were used to control for age, gender, anthropometric characteristics, and joint laxity [5]. The impact of subject characteristics on the rate of occurrence odds ratio was used to assess the severity of the abnormalities. The two groups were subjected to a thorough podiatric clinical examination in order to rule out any of the following foot deformities: hallux valgus, hallux virus, overriding fifth toe, metatarsus adductus, widened space between first and second toes, short metatarsals, syndactyly and/or clinodactyly.

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