

JUVENILE HALLUX ABDUCTO VALGUS: The Association with Metatarsus Adductus

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A number of conditions have been described as potential causes of juvenile hallux abducto valgus. However, until recently there has been little in the way of scientific study to determine which of these factors may be implicated. Most authors have described their own experiences without citing specific data which would account for all potential considerations. Although much of this information may be theoretically sound, in actuality it is anecdotal.

Kalen and Brecher performed what appears to be the most objective study to date. They measured certain radiographic angles in 36 patients (66 hallux abducto valgus deformities) and noted that "... adolescent patients with bunions have an 8 to 24 times higher than expected incidence of flatfeet." However, eleven of their patients possessed other conditions which could have influenced the results. For example, one patient possessed Marfan's syndrome, two equinus, one cerebral palsy, and several others possessed potential ligamentous laxity.

One radiographic parameter which was not assessed in their study was the degree of metatarsus adductus. Juvenile hallux abducto valgus has been attributed to this condition by a number of authors. La Reaux and Lee reviewed two groups

of radiographs, 230 in each. One group consisted of patients with hallux abducto valgus, the other group consisted of random patients without this deformity. After measuring the metatarsus adductus angle for each patient the authors concluded that "... a child with metatarsus adductus is 3.6 times more likely to develop hallux abducto valgus than the general population." However, the radiographs studied were on adult patients.

The current authors have undertaken a study to determine the angle of metatarsus adductus in 40 patients with juvenile hallux abducto valgus (72 hallux abducto valgus deformities). Utilizing the definitions recommended by Yu and DiNapoli, 48 of 72 feet demonstrated metatarsus adductus deformity. There were 30 feet with mild metatarsus adductus (15° - 20°), 13 with moderate deformity (21° - 25°), and 5 with severe derangement (26° or more).

At present the authors are correlating the statistical information on this data for publication in the *Journal of the American Podiatric Medical Association*. However, there are limitations with retrospective studies of this nature, in that other conditions, particularly biomechanical abnormalities, can not be appreciated through radiographs. Therefore, the authors are seeking to perform a

multi-institutional clinical and radiographic evaluation to better identify all potential contributing factors in juvenile hallux abducto valgus deformity.

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