New Classification of Polydactyly of the Foot On the Basis of Syndactylysm, Axis Deviation and Metatarsal Extent of Extra-Digit

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Background: Polydactyly of the foot is one of the most frequent anomalies of the limbs. However, most classification systems are based solely on morphology and tend to be inaccurate and less relevant to surgical methods and results. The purpose of this study is to present our new classification of polydactyly of the foot, which can serve as a predictor of treatment and prognosis.

Methods: To find a correlation between the various morphologic traits of polydactyly of the foot and the treatment plan and outcomes, we reviewed 532 cases of polydactyly of the foot in 431 patients treated in our hospital, extending on our previous study that described polydactyly based on the importance of metatarsal bone status and varus deformity. The records of patients were evaluated and compared with previous literatures of other centers.

Results: Unsatisfactory results were seen in 36 cases, which included five cases of incomplete separation due to syndactylism, 23 cases of axis deviation and 8 cases of remnants of metatarsal bones of extra-digit. The locus of the polydactyly, or the digit which is involved, did not seem to affect the final postoperative outcomes in our study. Three factors such as syndactylism, axis deviation, metatarsal extension are the major factors related to treatment strategy and prognosis. Therefore, we developed the new classification system using three characters (S, A, M) followed by three groups (0,1,2), to describe the complexity of polydactyly of the foot, such as S1A2M2.

Conclusions: We suggest a new classification system based on two additional factors, ‘S’, syndactylism and ‘A’, axis deviation, in addition to the bony extent of extra-digit, ‘M’, metatarsal extension, which we had previously focused on. Our new classification could provide a communicable description to help determination of surgical plan and predict outcomes.
References:


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