

Literature Review and Biomechanical Findings in Patients with Bipartite Medial Cuneiforms

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Abstract : Bipartite medial cuneiforms are relatively rare but may play a significant role in biomechanical and gait abnormalities. It is believed that a bipartite medial cuneiform may alter the available range of motion due to its larger morphological variant, thus limiting the metatarsal plantarflexion needed to achieve adequate hallux dorsiflexion for normal gait. Radiographic and clinical assessments were performed on 2 patients who reported foot pain along the first ray. Both patients had visible bipartite medial cuneiforms on MRI. Using gait plate and Metascan™ analysis, both were noted to have four measurements far beyond the expected range. Medial and lateral heel peak pressure, hallux peak pressure, and 1st metatarsal peak pressure were all noted to be increased. These measurements are believed to be increased due to the hindrance placed on the available ROM of the 1st ray by the increased size of the medial cuneiform. A larger patient population would be needed to fully understand this developmental anomaly.

Keywords : bipartite medial cuneiforms, cuneiform, developmental anomaly, gait abnormality

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