DOI: doi.org/10.47363/JCHR/AnatomyAdvances2026/2026(5)9

AnatomyAdvances 2026: Bridging Clinical and Surgical Anatomy for Medical Progress

Conference Proceedings May 26, 2026 - (Virtual)

Three-Dimensional Mandibular Canal Mapping across Craniofacial Patterns: Enhancing Safe Surgical and Orthodontic Interventions through Anatomical Precision

Dr. Kshitija Patil

Adjunct Faculty, ACPM DC, Dhule, Maharashtra, India

Abstract

This study evaluated the three-dimensional position of the mandibular canal (MC) in relation to different sagittal (Class I, II, III) and vertical growth patterns using cone-beam computed tomography (CBCT) in 90 patients. Significant anatomical variability was observed, with the MC showing distinct buccolingual positional differences among sagittal patterns and reduced alveolar crest clearance in vertical growers, impacting the safe placement of temporary skeletal anchorage devices (TSADs). These findings emphasize the importance of individualized CBCT-based assessment to prevent neurovascular injury and enhance surgical precision, contributing to safer, more personalized orthodontic and maxillofacial treatment planning.