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Mandibular Dentoalveolar Expansion in Early Mixed Dentition Using the Clara Expander: A Case Series

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Background: Mandibular transverse deficiency in growing patients is a common clinical problem associated with crowding, malocclusion, and impaired interarch coordination. While maxillary expansion is widely established, mandibular dentoalveolar expansion remains controversial due to anatomical limitations and concerns about long-term stability.

Objective: This study aimed to evaluate the effectiveness of the Clara Expander, a novel orthodontic appliance, in producing mandibular dentoalveolar expansion during the early mixed dentition stage.

Methods: A prospective case series was conducted including seven healthy children aged 6–10 years presenting reduced mandibular transverse dimension. All patients were treated with the Clara Expander appliance. Cone-beam computed tomography (CBCT) scans were taken before and after treatment to assess skeletal and dental changes at multiple reference points, including the Wala Ridge. Patients were followed for two years to evaluate short- and mid-term stability.

Results: Statistically significant increases were observed in intermolar, intercanine, and dentoalveolar widths after treatment. Expansion was evident at both dental landmarks and the Wala Ridge, suggesting contributions from dental and alveolar components. The Clara Expander was well tolerated, with minimal adverse effects and high patient compliance.

Conclusions: Within the limitations of this exploratory case series, the Clara Expander demonstrated promising potential for mandibular dentoalveolar expansion in growing patients. Even modest transverse gains provided clinically meaningful space for alignment and arch coordination. Further controlled trials with larger samples are warranted to confirm these findings.

Biography

Esther García-Miralles is a dedicated researcher and academic at Mohammed V University, Morocco. Her work focuses on advanced dental materials, digital dentistry, and implant prosthodontics. She has contributed to innovative studies exploring the impact of digital manufacturing on clinical outcomes. Her recent research examines how abutment design influences the performance of full-arch implant prostheses. Through her in-vitro investigations, she aims to enhance reliability and precision in implant-supported restorations.