



Received: December 1, 2025

Revised: January 26, 2026

Accepted: January 30, 2026

Corresponding Author:

Marasri Chaiworawitkul, Department of Orthodontics and Pediatric Dentistry, Faculty of Dentistry, Chiang Mai University, Chiang Mai 50200, Thailand
E-mail: marasri.chai@cmu.ac.th

Timing of Orthodontic Tooth Movement After Alveolar Bone Grafting in Patients with Alveolar Cleft: A Review Article

Natnicha Chatvichit¹, Marasri Chaiworawitkul² 

¹Master of Science Program in Dentistry, Division of Orthodontics, Department of Orthodontics and Pediatric Dentistry, Faculty of Dentistry, Chiang Mai University, Thailand

²Department of Orthodontics and Pediatric Dentistry, Faculty of Dentistry, Chiang Mai University, Thailand

Abstract

Alveolar bone grafting (ABG) is a cornerstone of the multidisciplinary management of cleft lip and palate (CLP), restoring alveolar continuity and enabling dental rehabilitation. Orthodontic tooth movement (OTM) into grafted sites promotes functional loading, enhances graft stability, and facilitates the eruption of cleft-adjacent teeth. However, the optimal timing for initiating OTM post-ABG remains a subject of clinical debate. While traditional approaches recommend longer healing periods, the earlier initiation of OTM is possible with individual assessment based on radiographic evidence of bone bridge formation and clinical consideration. This review synthesizes current evidence on graft biology, healing phases, orthodontic biomechanics, and timing strategies. It aims to guide clinicians in optimizing treatment protocols for improved outcomes in cleft rehabilitation.

Keywords: alveolar bone grafting, cleft lip and palate, functional loading, graft healing, orthodontic tooth movement