

Multidisciplinary treatment of multiple agenesis with lingual orthodontics and skeletal anchorage

Paolo Albertini,^{a,b} Ludovica Zucchini,^{a,b} Enrico Albertini,^{a,b} Gabriele Monica,^c Ateicos Quintavalla,^d and Luca Lombardo^b

Ferrara, Reggio Emilia, and Parma, Italy

Patients with missing incisors represent a significant clinical challenge, and the decision between space opening and space closure remains a topic of ongoing debate. In the literature, several treatment options have been proposed, including orthodontic space opening with prosthetic replacements or autotransplantation and orthodontic space closure with prosthetic or restorative camouflage. The ideal treatment is the most conservative approach that fulfills both functional and esthetic needs, while being tailored to the patient. The introduction of temporary skeletal anchorage devices has broadened the possibilities for tooth movement, making orthodontic space closure a predictable and feasible treatment alternative in complex cases. Implants in the esthetic zone of young patients represent a significant challenge in terms of long-term maintenance and esthetic stability; therefore, skeletal anchorage provides valuable therapeutic potential within a multidisciplinary treatment approach. This case report describes the successful management of a young patient with hypodontia treated using lingual orthodontics with skeletal anchorage and final esthetic veneers. The interdisciplinary collaboration, combined with accurate case planning and setup, allowed for optimal functional and esthetic outcomes, while avoiding the long-term risks associated with implant placement in the esthetic zone. (Am J Orthod Dentofacial Orthop Clin Companion 2026;XX:XX-XX)

Hypodontia is among the most common dental developmental anomalies, with a multifactorial etiology involving genetic, environmental, and epigenetic factors.^{1,2}

In the permanent dentition, prevalence ranges from 2.2% to 10.1%, excluding third molars, with a higher prevalence in females.³ In the white population, the mandibular second premolars and the maxillary lateral incisors are the most commonly congenitally missing teeth.^{1,4}

In these patients, the decision to open or close spaces remains a subject of debate. Several treatment options have been proposed, including orthodontic space opening with prosthetic replacements (such as tooth-supported

restorations and single-tooth implants) or autotransplantation and orthodontic space closure with prosthetic or restorative camouflage.^{5,6} The ideal treatment is the most conservative approach that meets both functional and esthetic needs, tailored to the patient.⁷

Historically, space closure has been limited by the absence of reliable anchorage. However, the introduction of temporary skeletal anchorage devices (TSADs) has broadened the possibilities for tooth movements, and space closure can now be considered more predictable and feasible.

Preserving the natural dentition, which adapts to normal craniofacial maturation, may therefore represent the best option, especially in young patients.⁸

This case report describes the treatment of a young patient with Class I malocclusion and congenital absence of 4 incisors and third molars. The patient was treated using a conservative orthodontic approach, including space closure with skeletal anchorage, a lingual appliance, and esthetic veneers. This highlights that achieving optimal esthetic and functional results requires a multidisciplinary treatment plan.

^aPrivate Practice, Reggio Emilia, Italy.

^bDepartment of Orthodontics, University of Ferrara, Ferrara, Italy.

^cPrivate Practice, Parma, Italy.

^dPrivate Dental Laboratory, Parma, Italy.

Address correspondence to: Paolo Albertini, Via Livatino 9, Reggio Emilia, Italy 42124; e-mail, dr.paoloalbertini@gmail.com