



Management of Congenitally Missing Lateral Incisors: Case Report

Juhi Shah, DDS; Rachel Iospa, DMD

Department of Dental Medicine, Staten Island University Hospital, Staten Island, NY

475 Seaview Avenue, Staten Island, NY 10305



Fig. 1

Introduction

Tooth agenesis is the most common developmental irregularity associated with the human dentition. Overtime as humans have evolved, there has been a decreasing trend in the anteroposterior direction of the jaws and face. This then limits the amount of space available to accommodate a full dentition. Therefore, the last tooth in each sequence is more likely to be congenitally missing (third molars, second premolars, lateral incisors).⁽¹⁾ This is primarily a hereditary process – a generation that has an irregular tooth such as a peg-lateral shaped lateral incisor will have progeny that no longer have this tooth. However, there are other conditions that are associated with agenesis as well such as congenital deformities, radiation and nutritional disorders.⁽¹⁾ Maxillary lateral incisors are the third most common congenitally missing teeth. The absence of either one of both incisors has been seen since the Paleolithic period.⁽¹⁾ The purpose of this poster is to present a case of bilateral congenitally missing maxillary lateral incisors in a 9-year-old male patient.

Case Presentation

9-year-old male patient presented to the Staten Island University Hospital Department of Dental Medicine for an initial dental examination appointment. The patient's parent reported a history of lupus as well as alopecia with no past surgical procedures or any allergies. The patient did not report any oral pain upon appointment. Clinical and radiographic examination revealed bilateral congenitally missing lateral incisors (Fig 1). Patient was in class I malocclusion with a 90% overbite.

Management

There is a diagnostic protocol and general principles that can be followed in order to determine if space closure or space opening is the better treatment option.⁽²⁾

• Facial aspects:

- Profile evaluation: a convex profile is usually associated with class II malocclusions and has a higher indication for space closure versus concave profiles usually have mandibular prognathism and midface deficiencies in which space opening would be better suited.
- Smile line: with a high smile line, the differences between the central incisors and canines becomes more pronounced, therefore it may be more manageable by opening spaces.
- Nasolabial angle: orthodontic treatment may affect the position of the lips, which in turn can influence nasal appearances

• Dental and functional aspects:

- Canine position and root angulation: usually with missing laterals, the canines erupt parallel to the central incisors in a more mesial position which is where space closure would be better. However, if the crown portion of the tooth is mesially inclined but the root is next to the premolar, space opening may be more viable.
- Canine color: canines are usually darker than central and lateral incisors therefore the extent of difference may influence treatment
- Canine shape: varying forms of which some are harder to recontour than others
- Unilateral versus bilateral absence: space opening may be better in cases of a unilateral missing lateral
- Functional occlusion: if canine-protected occlusion is favored, space opening is necessary. However, with space closing, large group function occlusion can be achieved.

• Periodontal considerations:

- Alveolar bone width: lateral incisors have narrow alveolar bone compared to canines and therefore may not have sufficient bone for mesial canine movement
- Gingival height: it should be taken into consideration that the central incisors and canines have margins at the same level whereas lateral incisors are usually 1mm more incisal.

**** However, early mesial movement of the canine into the space where the lateral incisor generally is helps maintain gingival and alveolar architecture that is normal. ⁽³⁾**

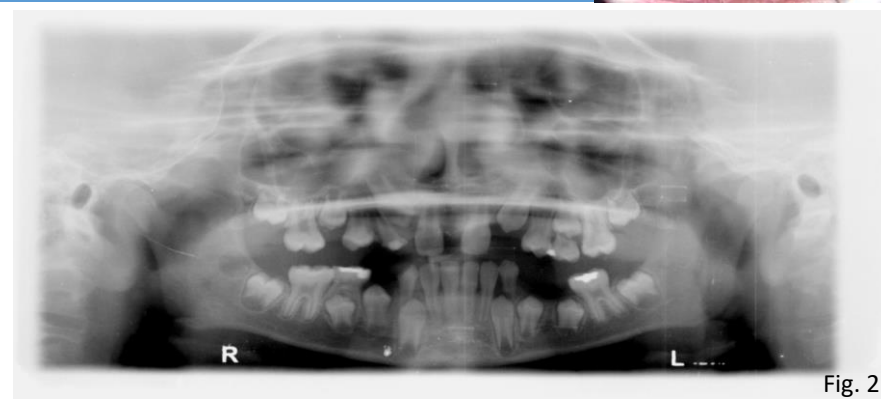


Fig. 2

Discussion

Space closure involves reshaping of the canine to mirror a lateral incisor after its mesial repositioning. Regarding space opening and prosthodontic intervention, treatment can be divided into two categories. Either a single-tooth implant or a tooth-supported restoration.⁽⁴⁾ In the case of this patient, it is too early to determine which treatment option will be optimal for him. The patient is still in a mixed dentition state with much of his permanent dentition, including his maxillary canines, still not erupted (Fig. 2). However according to the management protocol principles and the patient's clinical and radiographic exams, it seems at this point that space closure with mesial movement of both maxillary canines may be the treatment of choice for this patient. Once the maxillary canines erupt for the patient, the case will be re-evaluated for optimal treatment.

References

1. Almeida, Renato Rodrigues de, et al. "A multidisciplinary treatment of congenitally missing maxillary lateral incisors: a 14-year follow-up case report." *Journal of Applied Oral Science* 22 (2014): 465-471.
2. Araújo, Eustáquio A., Dauro D. Oliveira, and Monica T. Araújo. "Diagnostic protocol in cases of congenitally missing maxillary lateral incisors." *World Journal of Orthodontics* 7.4 (2006).
3. Kiliaridis, Stavros, et al. "Treatment options for congenitally missing lateral incisors." *Eur J Oral Implantol* 9.Suppl 1 (2016): S5-24.
4. Kokich, Vincent O., Gregory A. Kinzer, and Jim Janakievski. "Congenitally missing maxillary lateral incisors: restorative replacement." *American Journal of Orthodontics and Dentofacial Orthopedics* 139.4 (2011): 441.