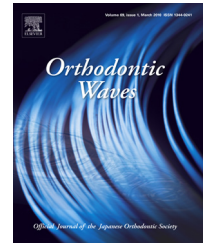


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## Case report

# Case of unilateral transposition of a maxillary lateral incisor and canine treated without extraction

Takeshi Muguruma, Sayaka Osanai, Masahiro Iijima\*, Itaru Mizoguchi

Division of Orthodontics and Dentofacial Orthopedics, Department of Oral Growth and Development, School of Dentistry, Health Sciences University of Hokkaido, Hokkaido, Japan

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### ABSTRACT

In this article, we report the successful treatment of a patient, aged 11 years 5 months, who presented for treatment with a chief complaint of lack of eruption of his maxillary left canine. Panoramic radiography and computed tomography revealed complete transposition of the maxillary left lateral incisor and canine. The patient was treated with surgical exposure and traction of the impacted canine to an appropriate location, followed by nonextractive treatment with full resolution of the transposition of the lateral incisor and canine. The diagnosis, planning, appliance design and treatment sequences are described. Alternative treatments, including their advantages and disadvantages, are also discussed.

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## 1. Introduction

Transposition is an exchange in the positions of two adjacent teeth [1,2] and is defined as either complete, when both the crowns and the roots are affected, or incomplete, also called pseudotransposition, when only the crowns are involved [1]. Previous studies have reported that the prevalence of transposition in the general population is 0.13–1.8% [2,3]. In addition, transposition is more frequently seen in the maxilla, unilaterally and females [3,4]. While transposition is most frequently seen between the canine and the first premolar [5,6] or lateral incisor [7,8], transposition of the central incisor has also been reported [9].

Dentofacial trauma in the deciduous dentition, with subsequent drifting of the developing permanent teeth, and

prolonged retention of the deciduous canines are the most common etiologic factors [1,3]. This condition also appears to involve a genetic component [1]. In this article, we describe the orthodontic management of a case of maxillary lateral incisor-canine transposition that was treated orthodontically by reversing the transposed teeth.

## 2. History

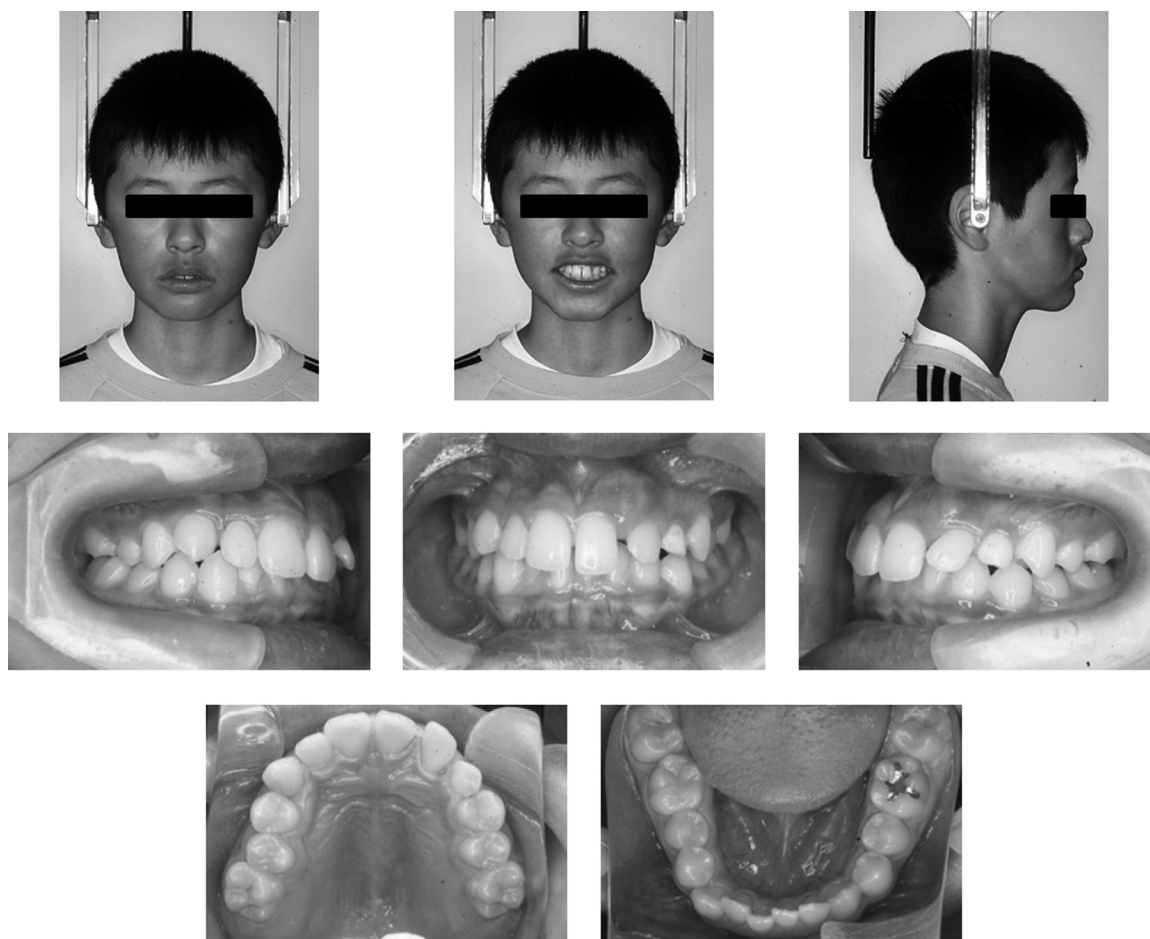
A boy, aged 11 years 5 months, came to our university hospital of the Health Sciences University of Hokkaido with a chief complaint of lack of eruption of his maxillary left canine (Figs. 1 and 2). A review of the patient's medical, dental and family histories revealed no significant findings (no history of dental trauma). The intraoral examination showed an Angle

\* Corresponding author at: Division of Orthodontics and Dentofacial Orthopedics, Department of Oral Growth and Development, School of Dentistry, Health Sciences University of Hokkaido, Kanazawa 1757, Ishikari-tobetsu, Hokkaido 061-0293, Japan. Tel.: +81 133 23 2977; fax: +81 133 23 3048.

E-mail address: [iijima@hoku-iryo-u.ac.jp](mailto:iijima@hoku-iryo-u.ac.jp) (M. Iijima).

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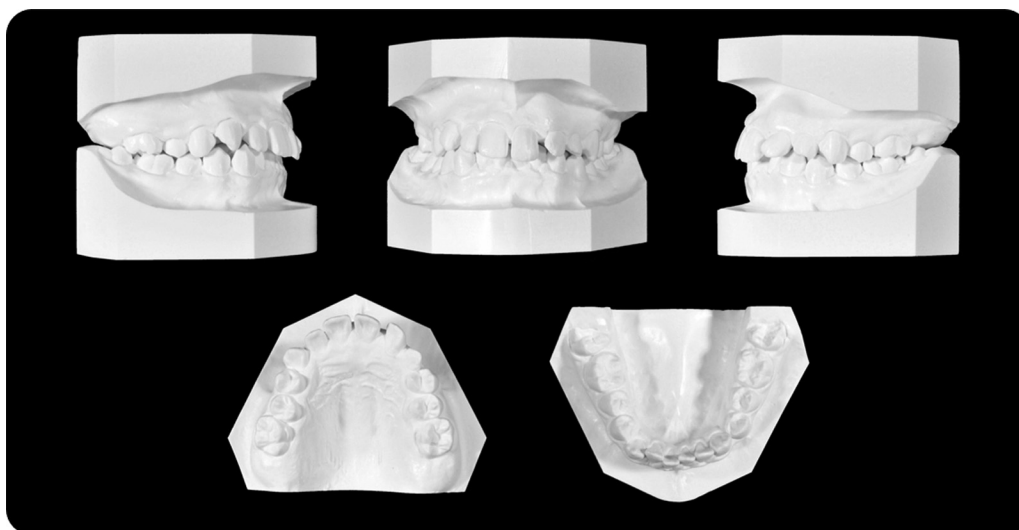
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**Fig. 1 – Pretreatment facial and intraoral photographs at age 11 years and 5 months.**

Class I molar relationship with minor crowding of the mandibular dentition in the early permanent dentition, although the deciduous maxillary left canine was retained. The maxillary left lateral incisor was proclined labially and mesially. In the left maxillary anterior region, a prominence was observed by palpation of the mucosa that seemed to

correspond to the unerupted canine. Both his maxillary and mandibular dental midlines corresponded to the facial midline. Overbite was 80% with an exaggerated curve of Spee of 3.0 mm. The facial analysis showed an ovoid face, slightly convex profile with chin symmetry; there was no muscle strain and lip closure was normal with a pleasant smile.



**Fig. 2 – Pretreatment dental casts at age 11 years and 5 months.**

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