Cuspid Transposition and Treatment Timing

Case Report

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An example of early treatment where timing is crucial to accomplishing the greatest possible dental health benefit, with the added bonus of minimizing mechanical therapy.

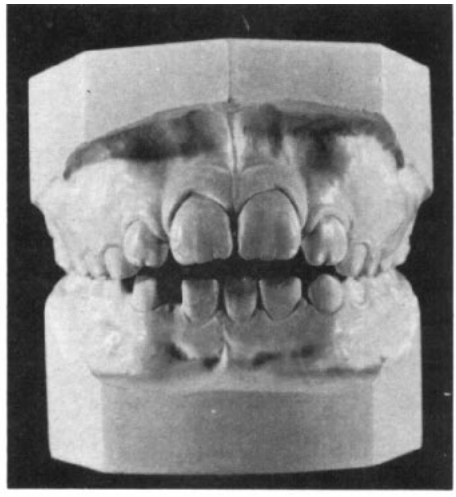
A female patient presented at 10 years of age with transposition of the lower left deciduous cuspid and permanent lateral incisor (Fig. 1). "Transposed" refers to the position of the lateral incisor crown. "Ectopic" might be a more accurate description, in that the root apices were in more nearly normal positions (Fig. 2).

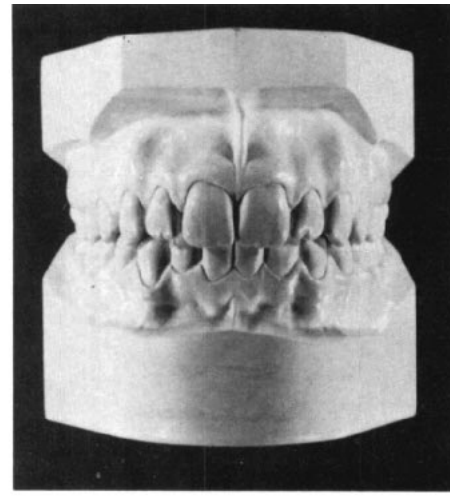
All deciduous teeth with the exception of a previously extracted lower right first deciduous molar were present and in proper positions. All developing permanent teeth were present and in apparently normal positions.

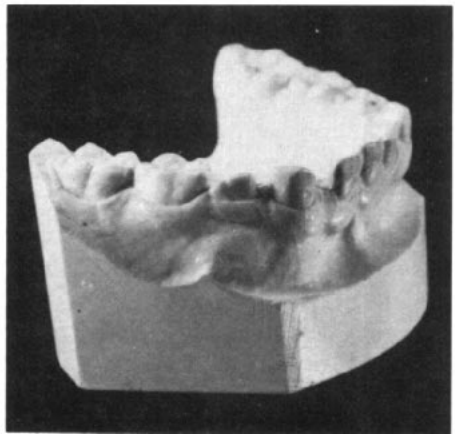
The occlusion was Class I with an open bite and a tendency toward Class II. Tongue thrust was present during speech and swallowing.

The two immediate treatment objectives were to: 1) return the lower right lateral incisor to its proper position in the dental arch, and 2) to attempt tongue retraining.

In the real world of patient care the words "guiding," "interceptive" and "preventive" become irrelevant and academic. In this case it was obvious that delay in treatment could allow the permanent right cuspid to







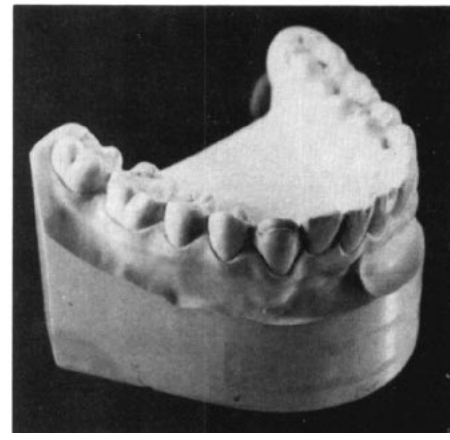
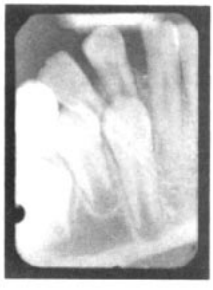


Fig. 1 Pretreatment dental casts.

Fig. 3 Posttreatment dental casts.



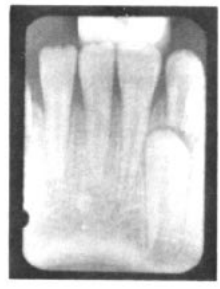
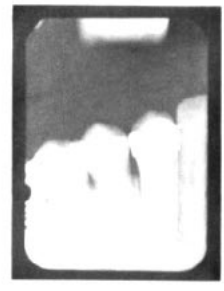


Fig. 2 Pretreatment radiographs. Note the root position of the lower right lateral incisor.



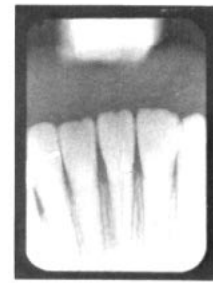


Fig. 4 Posttreatment radiographs.

erupt mesial to the lateral incisor. Such a development would call for either a complicated treatment plan attempting to transpose two permanent teeth in a slim alveolar process or keeping the transposed teeth in their abnormal and functionally compromised relationships.

Correction of tongue habits is still controversial. We do not subscribe to the school of thought which says that only selfcorrection is possible, so the patient was sent for speech therapy and tongue-thrust swallowing therapy.

Mechanical correction of the transposed lateral incisor was begun immediately after extraction of the deciduous cuspid. The position of the roots (Fig. 2) made the mechanical correction fairly easy. While the lateral was being moved mesially, an antero-posterior occlusal change appeared. The occlusal relationship became more Class II. For this reason, extraoral traction was also instituted.

Within two years, the open bite was reduced without mechanical intervention and the lateral incisor was returned to its proper position (Figs. 3 and 4). The molar relationship was reduced to Class I, and the permanent teeth erupted into their normal positions. Bands were placed on the upper incisors for a short period of time for detailed finishing.

In retrospect, both the patient and the orthodontist were pleased by the benefits achieved with relatively simple treatment. Benefits exceeded those that could have been achieved later with much greater mechanical effort, thus fulfilling one of the cardinal objectives of mixed dentition treatment.*

* Lieberman, M. A. and Gazit, E. *Guides to Orthodontic Treatment Timing.* J. Amer. Dent. Assn. 88:555-562, 1974.