

The Frequency of Malposed Unerupted Lower Premolar Teeth

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The number of malposed lower premolar teeth first came to our attention while teaching in the Fixed Denture Prosthesis Department at the University of Nebraska, College of Dentistry. Often times such malposition presented a problem in planning a fixed replacement for a lost second premolar or, more often, a first permanent molar. Later, in the practice of orthodontics, numerous developing malposed lower premolars appeared frequently in x-rays. In addition, many erupted premolars presented an orthodontic problem.

The Children's Dentistry Clinic is served by the Pedodontic Department and the Undergraduate Orthodontic Program at the University. In addition, the Radiology Department uses duplicate film packets. Materials from these sources offered a fine opportunity to obtain some figures relating to the frequency of malposed developing premolars. The survey was limited to the lower arch because films in the lower arch are less apt to reflect distortion than are those in the upper.

During the fall semester of the 1968-69 term, the duplicate films of all children between the ages of eight to twelve years were examined. Because the children treated at the clinic came from all levels of the social strata, it can reasonably be assumed that they represent a random sampling of this area. As expected, among the older ages a number of the children exhibited erupted premolars. These were not included in the survey. Others exhibited erupted first premolars but with the second premolars still unerupted. Also, teeth would be erupted on one side of the mouth but unerupted on the other.

Therefore, the number of teeth reported does not reflect the number of patients nor the number of films examined.

The films examined were charted in such a manner as to indicate the particular tooth, the degree of malposition (0=none; 4=90°) and the type of malposition (crown inclined mesially, crown inclined distally, tooth rotated). No attempt was made to determine buccal or lingual malposition because distortion of the films in these planes would be difficult to detect. Congenitally missing teeth were included in the survey because they present potential problems in the development and maintenance of the dentition. No attempt was made to determine the etiology of any notable malpositions.

The films of 150 lower first premolars were examined and of these 8 appeared to be distally inclined, 4 mesially inclined and 10 rotated for a total of 22 or 14.67 per cent of the teeth examined. In none of the films examined was the first premolar congenitally missing. One tooth was malformed but it was not included in the survey. These figures indicate that rotation is the most frequent offense accounting for almost half of the total malposed teeth. Distally inclined teeth occur almost as frequently as rotations with mesial inclination seldom presenting a problem.

Second premolars exhibited a somewhat different picture. Films of 181 teeth were examined of which 29 were distally inclined, 12 mesially inclined, 24 rotated and 11 congenitally missing for a total of 76 offenses or 41.99 per cent. With the second premolar, distally inclined teeth were the most numerous

with rotations numbering five fewer. Mesially inclined and congenitally missing teeth were about equal in number and were about one half as frequent as the first two categories.

If the first and second premolar totals are combined, the figures are 331 teeth examined of which 98 were malposed or congenitally missing for a percentage of 29.61.

The relatively high frequency stimulates an interest in further study. It would be particularly valuable to follow these cases during the development of the dentition to obtain some idea of the degree of self correction, if any. Fortunately, many of the children treated at the clinic return over a period of years. It is planned to continue the

study during the next several years in an attempt to answer some of the questions posed in this report.

SUMMARY

The frequency of developing or missing lower premolars which are malposed or missing was investigated utilizing films of children treated at the University of Nebraska, College of Dentistry.

Of 150 lower first premolars examined, 22 or 14.67% were malposed. Of 181 lower second premolars examined, 76 or 41.99% were malposed or missing.

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