

# Mesial Movement of Maxillary First Molar in En Masse Orthodontic Treatment with Extraction of Maxillary First Premolar

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## [Objective]

The orthodontic treatment with premolar extractions is given with headgears to decrease the mesial movement of molar in the distal movement of incisor and cuspid, and with wires complicatedly bended. I would like to introduce the comparison of the amount of mesial movement of maxillary first molar, between 17 cases by the en masse orthodontic treatment, simultaneous distal movement of central, lateral incisor, and cuspid, and 17 cases which were given the contraction of central and lateral incisor after the re-traction of cuspid.

## [Materials and Methods]

### Materials

Two groups were compared and examined with lateral roentgenographic cephalograms which were taken before and after their treatments. First group, which is called the en masse group, is 17 cases with the extraction of maxillary first premolar and mandibular first premolar or second premolar by the en masse orthodontic treatment. Their ages are from 13 years and 10 months old to 40y11m, and their average treatment period is for 18 months. Second one, which is called the control group, is 17 cases with the contractions of central and lateral incisor after the re-tractions of cuspid. Their ages are from 13y1m to 29y11m, and their average treatment period is for 26 months.

### METHODS

Angle measurements (five items) and distances measurements (three items) were provided with the lateral roentgenographic cephalograms before and after their treatments, and the difference of the amount of change were compared and examined by the official approval by t-test. The measurement point U6 is the middle of the mesiodistal of maxillary first molars.

#### 1. The angle measurement item (Figure 1)

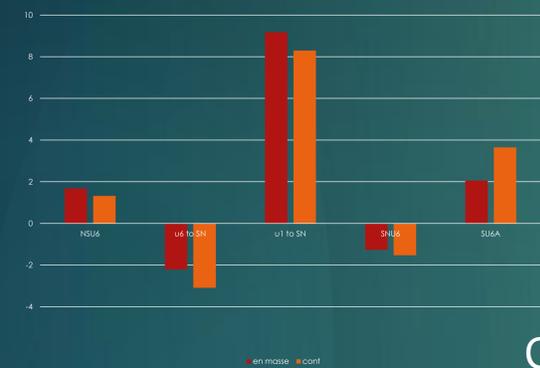
- ① NSU6 ② U6 to SN ③ U1 to SN ④ SNU6 ⑤ SU6A

#### 2. The distances measurement item (Fig.2)

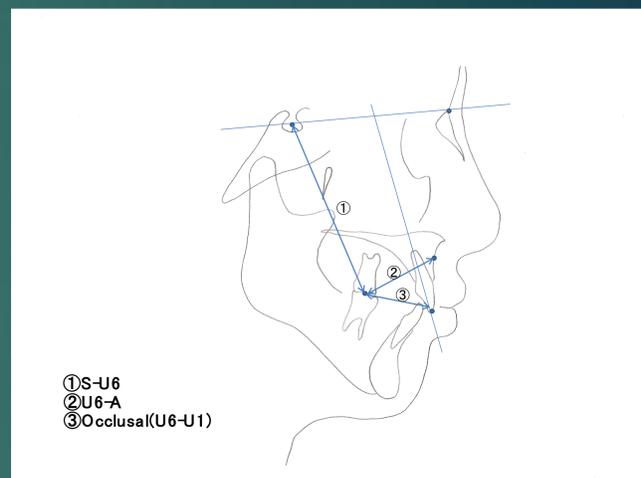
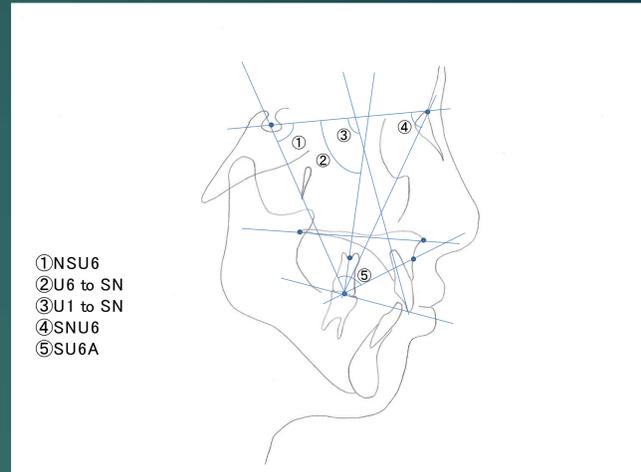
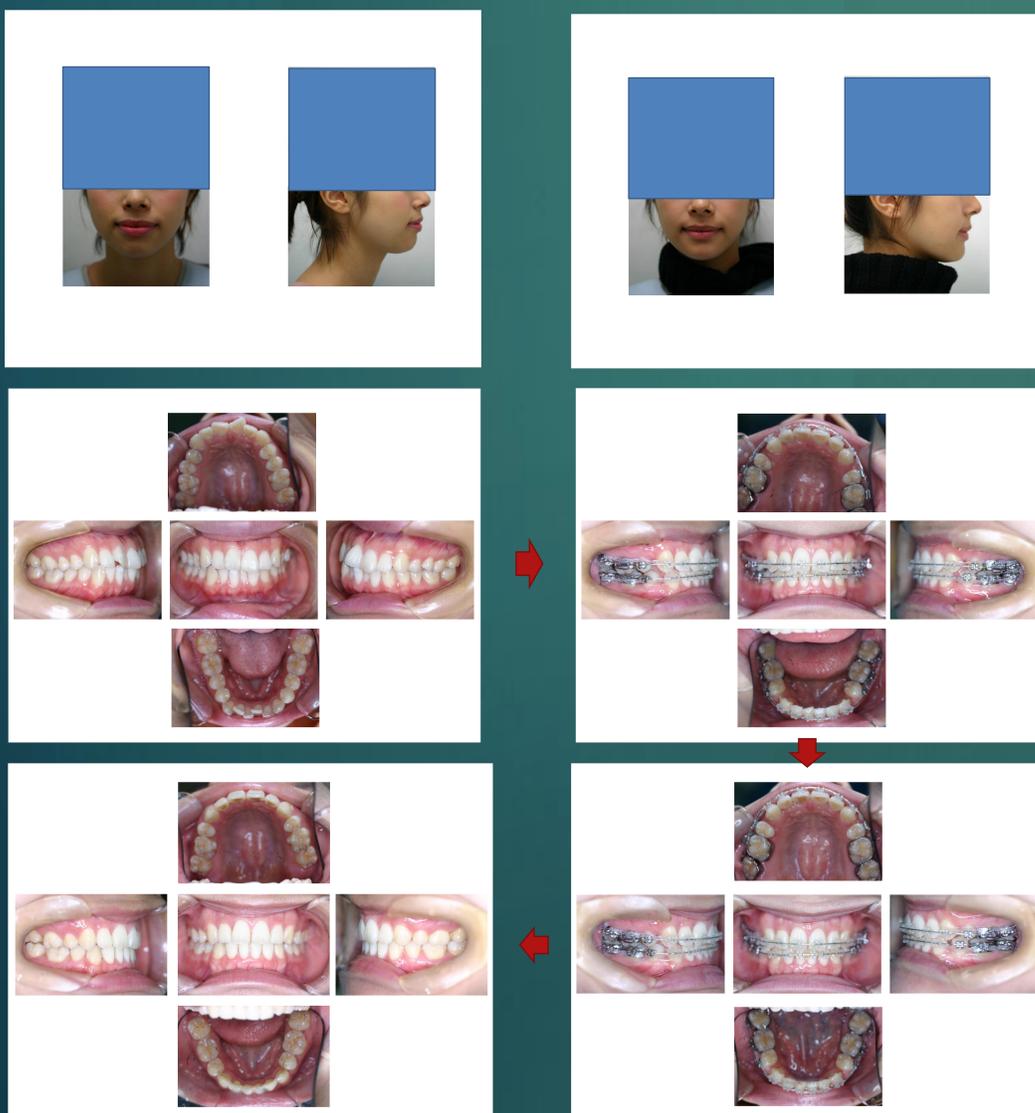
- ① S-U6 ② U6-A ③ Occlusal (U6-U1)

## [Results and Discussion]

These comparisons and examinations resulted as follows. In all angle and distance measurement items, the statistical significance was not recognized in the changing positions of maxillary first molar.



## CASE



## [Conclusion]

This follows that no difference between the en masse group and the control one is recognized in the mesial movement of maxillary first molars, in the quantity of lingual slant of maxillary central incisors, and in the amount of change of occlusal plane. I think that strong power is necessary because the transseptal fibers between lateral incisor and cuspid are pulled in the distal movement of cuspid and therefore it causes the mesial movement of molars. It is considered that the simultaneous distal movement of central, lateral incisor, and cuspid is more effective with no necessary to pull the transseptal fibers and then with weak power. Therefore it is verified that the en masse orthodontic treatment is useful.



- Power of mesial movement of molars.
- ← Power of distal movement of cuspid.
- ← Power of simultaneous distal movement of central, lateral incisor, and cuspid.

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