

Non-surgical orthodontic treatment of various skeletal malocclusions

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The recent development of miniscrews has dramatically increased the scope of orthodontic treatment. This time, we will examine the recent trends, treatment goals, and treatment results of nonsurgical orthodontic treatment for skeletal malocclusion through clinical cases.

1. Non-surgical orthodontic treatment of skeletal class II malocclusion

Skeletal class II malocclusion is caused by overgrowth of the maxilla and undergrowth of the mandible, and a combination of these factors. Although it is impossible to increase the absolute size of the mandible in adults whose growth is complete, non-surgical methods can improve the appearance and function of the dentition in the case of maxillary excess.

1) Horizontal Maxillary Excess

Bialveolar protrusion can be treated with good results with traditional orthodontic treatment. On the other hand, skeletal excess is a case where the maxillary anterior inclination is normal or already upright. In general, ASO is recommended, but if the maxillary anterior teeth are well controlled, good results can be obtained with orthodontic treatment alone.

2) Vertical Maxillary Excess

The overgrowth of the maxillary anterior teeth is generally manifested in the form of a protruding mouth and a gummy smile. Excessive maxillary posterior teeth result in retrusive mandible and anterior openbite. In the case of vertical overgrowth of the entire maxilla, retruded mandible and lip protrusion can be improved through the total intrusion of the maxilla.

2. Non-surgical orthodontic treatment of skeletal class III malocclusion

The goals of non-surgical treatment for class III malocclusion are improvement of crossbite, increase of maxillary incisor exposure, and restoration of shape of mentolabial sulcus.

1) Treatment modality for mandible

Since the size of the mandible itself cannot be reduced except through surgery, the entire mandibular dentition is moved backward. In general, non-extraction treatment is performed considering the appearance, and the location of the miniscrew is important.

2) Treatment modality for maxilla

Since the midpalatal suture is partially open until the late 20s, skeletal expansion is attempted with a rapid expansion appliance using miniscrews(MARPE), and if expansion is successful, the forward movement of the maxillary bone and maxillary teeth is promoted to a certain extent using additional protraction device.

Profile

- * Graduate from Dental College, Yonsei University (Diploma D.D.S.)
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- * Certificate in Orthodontics, Yonsei University Dental Hospital
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