

CHAPTER VI CONCLUSION

The skeletal, dental and soft tissue measurements were made on the lateral cephalograms of Northern Thai adults; 70 normal subjects and 70 anterior open bite subjects. The normal group consisted of 35 males and 35 females. The anterior open bite group consisted of 22 males and 48 females. These measurements were differentiated between the normal and anterior open bite groups, and between sexes. The following conclusions were reached:

1. The cranial base flexion was not affected in the anterior open bite subjects. The mandible was in retruded position in relation to the cranial base.

2. Most of the anterior open bite deformity existed below the palatal plane. The mandibular plane angle, the palatomandibular plane angle, the Y-axis angle and the gonial angle were significantly steeper in the anterior open bite group than in the normal group. A trend toward shorter ramus height was observed in the anterior open bite subjects.

3. The total anterior facial height in the anterior open bite group was statistically longer but it was restricted to the lower face region. In addition, a decrease in the total posterior facial height occurred primarily in the lower posterior facial height.

4. The anterior open bite subjects exhibited decreasing in the UAFH/LAFH ratio, the TPFH/TAFH ratio and the LPDH/LADH ratio, but increasing in the UPFH/LPFH ratio.

5. Not only the proclination of maxillary and mandibular incisors and the acute interincisal angle were observed in anterior open bite, but also convex facial profile.

6. There were the upper posterior dentoalveolar hyperplasia and the lower posterior dentoalveolar hypoplasia in the anterior open bite subjects.

7. All of facial heights and the dentoalveolar heights in the males were significantly greater than that in the females for both the normal and anterior open bite groups.

8. Anterior open bite, facial heights and UPDH were not significantly different among skeletal Class I, Class II and Class III open bite subjects.

9. Skeletal Class II open bite subjects presented more retrognathic mandible, higher SN-GoGn angle and PP-GoGn angle, more vertical growth of mandible, shorter ramus height, more proclined lower anterior teeth, acute interincisal angle, longer UADH, LADH, LPDH and upper lip than skeletal Class III and Class I open bite subjects.

10. The anterior open bite had significantly positive correlations with the SN-GoGn and PP-GoGn angles.

11. In the anterior open bite group, the SN-GoGn and PP-GoGn angles showed significantly negative correlations with the TPFH, LPFH and TPFH/TAFH ratio, but showed significantly positive correlation with the UPFH/LPFH ratio. In addition, the PP-GoGn angle was positively correlated with the LAFH, but was negatively correlated with the UAFH/LAFH ratio.

12. For the normal and open bite groups, there was a positive correlation between the upper anterior facial height and the SN-PP angle. The lower anterior facial height showed a positive correlation with the PP-GoGn angle, but showed an inverse correlation with the SN-PP angle. Furthermore, the anterior facial heights and the posterior facial heights presented positive correlations to the dentoalveolar heights.

13. Stepwise multiple regression analysis showed that 67% of the variation in the anterior open bite was explained by the PP-GoGn angle, the UPDH/UADH ratio, the LPDH/LADH ratio and the UI-SN angle. The predictive equation for anterior open bite was :

$$\begin{aligned} \text{Anterior open bite} = & -48.423871 + 0.328546 \text{ PP-GoGn} + 18.111749 \text{ UPDH/UADH} \\ & + 23.627974 \text{ LPDH/LADH} + 0.054678 \text{ UI-SN} \end{aligned}$$

This study points out that anterior open bite malocclusion has various skeletal and dental characteristics. Therefore, orthodontists should have individual diagnoses and treatment plannings for this type of malocclusion.