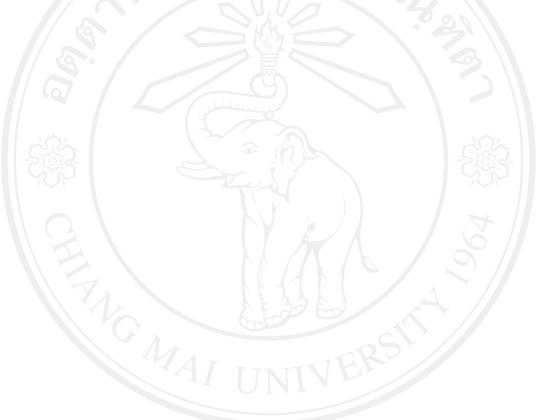
## CHAPTER 6

## CONCLUSIONS

Since we known that cleft patients has many problems, they need a long period of treatment. One crucial protocol for many complete cleft is alveolar bone grafting. Patients who need this surgical procedure have alveolar bone grafting resorption in grafting area. It remains unclear how the cleft leads to the alteration in the stress distribution in the maxillary palate, alveolar and midface. Surgeons and orthodontists seek secure procedure to avoid this unwanted result. Lip thickness is one of the suspicious factors that was revealed in this study for its effects on alveolar bone grafting outcomes.

The radiographic study showed statistically significant negative relation between upper lip thickness and the decreasing of bone grafting level. The thicker lip thickness has less decreasing bone grafting level In the other hand, the thinner lip thickness has more decreasing bone grafting level.

In finite element study, varied forces of upper lip led vary thickness and stresses on the alveolar bone adjacent to the cleft area. As mentioned above, the higher force upper lip had thinner thickness and more bending maxilla. The higher stress may had influenced bone grafting outcomes. Similarly to the epidemiological study that shown that there was statistically significant correlation between lip thickness and postsurgical alveolar bone graft height: the less lip thickness, the less alveolar bone graft height remaining. These concluded that lip thickness is likely a factor affecting alveolar bone grafting outcome.



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