CHAPTER I
INTRODUCTION

Facial esthetics is one of needs of orthodontic treatment. Most of the patient complaints about esthetics are associated with protruding of upper and lower anterior teeth, protrusion of soft tissue profile, or both.

Lip posture has been found to be correlated closely with the posture of underlying dental and alveolar structures (Subtelny, 1961).

Numerous studies have identified and described the relation of maxillary and / or mandibular incisor retraction could change the upper and lower lip position and their interrelationships including the change in the underlying hard skeletal structure. However, these findings are still controversial.

Many factors influence on the estimation of point A and point B such as age, growth potential, type of malocclusion and orthodontic treatment (Steiner, 1959). Moreover, bone forming tissue is highly adaptive to extrinsic habits (Meach, 1966).

Many factors that have a marked influence on the soft tissue pofile include growth, orthodontic treatment, lip strain, lip length, lip width, dento alveolar bone, age, sex, racial and ethnic background (Assuncao et al., 1994).

In growing patients, facial changes resulting from growth and orthodontic treatment. For the adult patients, most facial changes are related to orthodontic treatment; thus the orthodontist has a much greater responsibility.

The purposes of this study are to determine skeletal and soft tissue changes following incisor retraction in adult patients, to calculate the correlation between them, and to predict the soft tissue profile changes as a result of orthodontic treatment.

The purposes of the research

The purposes of this research are to evaluate the hard tissue and soft tissue response to orthodontic treatment in class I malocclusion with extraction of four first premolars in the following veiws :

1. The changes of hard tissue points A and B from the retraction of upper and lower incisors after orthodontic treatment. Therefore, null hypothesis for this part of study is :

There are no significant changes of hard tissue points A and B following upper and lower incisor retraction.

2. The changes of soft tissue (A', B', UL, LL) from the retraction of upper and lower incisors after orthodontic treatment. Therefore, null hypothesis for this part of study is :

There are no significant changes of soft tissue (A', B', UL, LL) following upper and lower incisor retraction.

3. To determine if there are any significant differences in hard or soft tissue changes between sexual dimorphism. Therefore, null hypothesis for this part of study is :

There are no significant differences between sexual dimorphism.

4. To determine if there are correlations between hard tissue changes, dental changes soft tissue changes after incisor retraction. Thus, null hypothesis for this part of study is :

There are no correlation between hard tissue changes, dental changes and soft tissue changes.

The hypothesis will be rejected if there are significant correlations and then, multiple regression equation will be calculated to predict hard tissue changes and soft tissue changes after incisor retraction.

Scope of Study

This investigation performed on standardized lateral cephalograms of samples. The samples were selected from the adult Thai patients who had been treated by the staff of the Department of Orthodontics, Faculty of Dentistry, Chiang Mai University. The sample consisted of thirty female and eleven male patients with dental class I malocclusion treated by extraction of four first premolars and Edgewise Technique.

Definition

"Thai"   refers to a person who was born in Thailand, and lives in
                Northern part of Thailand. He or she must be of the
                Mongoloid race.

"Age"   refers to chronological age.

"Adult"   refers to the person whose age exceeds the adolescent
                period of Northern Thais (10.75 to 13.5 years of age in
                females, 12 to 15 years of age in males, according to
                Nabangxang (1978)).

"Population"   refers to patients who come to the Department of
                Orthodontics, Faculty of Dentistry, Chiang Mai University.
                They must be in dental class I malocclusion treated by
                extraction of four first premolars and Edgewise Technique.