

Evaluation of Skeletal II Patient's Ideal Profile by Using Computer Simulation

Remi KONDA, Yoshiaki MATSUYAMA and Kazunori FUKUI

The purpose of this study was to evaluate the differences in concepts of an ideal face between retrognathic patients and orthodontists, and evaluate the clinical utility of a new imaging software system. Frontal and lateral views from scanned images were captured of 11 male subjects with a retrognathic facial profile using a non-contacting three-dimensional optical surface scanner (Vivid 910 KONICA MINOLTA, JAPAN). The captured data were exported to the reverse modeling software package Rapidform 2006 RF6 (INUS Technology, Seoul, South Korea) to generate a composite whole face. Soft tissue changes were programmed into the new imaging software system and used to morph the three-dimensional images based on reference ratios. The subjects were asked to morph their own image and orthodontists morphed all of the subject images by moving 5 points set on the center of the lower face. Differences between the groups regarding the Z-coordinate values were analyzed using a Mann-Whitney U-test.

The following results were obtained.

1. The drawing simulation system utilized was found useful for clinical situations.
2. There were no significant differences between the groups in regard to the Labiale superior, Stomion, and Labiale inferior.
3. The subjects had fewer Submentale changes as compared to the orthodontists.
4. There was less Pogonion soft advancement in the subject group as compared to the orthodontists.

Our results suggest that retrognathic patients have no recognition that their chin appears to be shifted to the back as compared to normal.

Key words : non-contacting three-dimensional optical surface scanner, 3D-soft tissue change, self-image