Application of facial anthropometrics for classification of acromegaly

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Abstract

Context: Early detection of acromegaly is important information for the treatment of acromegaly. The delay between onset of first symptoms and diagnosis of the acromegaly is 6~10 years. Acromegaly causes typical changes of the face that might be recognized by facial soft tissues measurements comparison from the detection platform that created by the classifications of acromegalic and normal samples.

Objective: The objective of the study was to compare the facial measurements from acromegalic and normal samples. Build up the detection platform from the clusters of acromegalic and normal samples. And we will category the samples into acromegalic or normal clusters from the platform.

Design: This was a cross-sectional study.

Setting: The study was conducted in one medical center.

Patients and Control Subjects: Subjects in the study included 70 patients with acromegaly (35 women, 35 men) and 140 sex-matched controls.

Interventions: Three-dimensional facial image were taken with the subjects sitting in front of a white background with a three-dimensional camera system. All subjects were asked to take a natural facial expression without smiling and take off glasses. Descriptive analyses were done using means and standard deviations for each measurement. Cluster analysis for acromegalic and normal samples were performed to category the samples into three groups. And the study uses the data of cluster to category all samples into acromegalic or normal samples from the platform.

Findings: When compared with the controls, patients of both sexes with acromegaly were found to have statistical significant difference between the sexes in nine variables (P<0.05). Cluster analysis showed that both of acromegalic and normal samples were categorized into three groups. And it shows three templates in both acromegalic and normal samples to build up the judgment platform for early detection of acromegaly.