Three-dimensional Landmarking Based Maxillomandibular Deformity Diagnosis Using Three-dimensional Computer Tomography

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摘要

Abstract

This paper describes a method of automatic maxillomandibular deformity diagnosis based on manipulating volume data constituted of CT slices. This method includes 3D landmarking for diagnosing maxillomandibular deformities by manipulating volume data, measuring distances of landmarks to base planes and classifying the maxillomandibular deformity to determine corresponding surgical modalities, procedures and corrections. A maxilla extrusion example shows, the system equipped with VR simulation functions can provide 3D realistic shaded images to demonstrate 3D landmarks, surgical procedures and prognosis predictions. The comparison between the skull and face before and after surgery shows the surgical plan informed with the computed deformity correction can correct the deformity well.