AN ANTHROPOMETRIC SYSTEM FOR FACIAL ORTHOMORPHIC SURGERY

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Facial deformities essentially represent deficiencies and/or distortions of the facial soft tissues, hard tissues or of both. Therefore any strategy for management, necessitates an accurate understanding of the source of the deformity, and means of characterising and quantifying its individual elements. Although two dimensional measurements taken on a cephalogram with an analysis of occlusion on dental casts have proved satisfactory in planning and studying the changes in orthognathic surgery, the development of orthomorphic concepts in facial surgery have made three dimensional measurements mandatory.

In orthognathic surgery soft tissue changes are the consequence, therefore occur secondary to skeletal movements planned with occlusion as the reference. For this reason skeletal measurements in two dimensions combined with an estimate of the degree to which they affect soft tissues is adequate to predict the surgical outcome and also time related changes. In addition the use of occlusion as a guide to skeletal excursions makes it a readily available reference to skeletal position. On the other hand in orthomorphic surgery the hard and soft tissue movements are independently achieved. Therefore skeletal measurement fail to represent overall changes in facial morphology. Besides soft tissue movements are in most cases capsular in nature involving a large soft tissue surface area and their physiological equilibrium is to a large extent uncoordinated with that of the skeletal elements. It is therefore necessary to develop a system of facial analysis which combines the information available from cephalometric measurements with an independent three dimensional analysis of facial soft tissue contour. Although three dimensional CT Scans can represent the external surface features with relative accuracy as yet they do not possess the ability to measure changes, except by complex computer directed prosthetic