

The face reconstruction of a malformed skull: Our experiences and interpretations

Ivo Klepacek

Charles University, Czech Republic

There are numerous facial reconstruction techniques used in anthropologic sciences as well as in reconstructive surgery. Posthumous facial reconstruction assists in composing image of an individual's appearance, where the individual proportions of the face are given by the skeletal landmarks, position of the eyes, size of the nose, and the approximate size and shape of the mouth. The high resolution 3D CT examination (approximate voxel size: 0.125x0.125x0.300 mm) is recognized as a tool to determine the extent of insertion areas of the facial muscles as well as osteofibrous bone-skin ligaments.

It is believed that modern reconstruction method, based on Neave's examinations combined with traditional Gerasimov's technique (in full respect to spatial arrangement of the subcutaneous musculoaponeurotic system - SMAS) are very useful to create the 'au naturel' facial relief, even if the skull is malformed.

On irregular terrain of the traumatically malformed and asymmetric facial skeleton, the detailed map of the muscular and ligamentous insertions gave an important background to estimate the thickness of the soft tissue layer. Through our report, we have tried to create an optimal set of the morphological techniques characteristic for face type in our case studies.

Biography

Ivo Klepacek MD received his Ph.D. degree in 1993. He is actively engaged in problems focused on development of the head vascular pattern, bone growth, and 3D rearrangement of the soft tissues of the face. As an expert in Orofacial Anatomy and Embryology, he had taken a leading role in dentistry and stomatology courses organized by the First Medical Faculty of the Charles University in Prague. He worked also as a visitor scientist and a hired teacher of the Systemic and Comparative Anatomy and Embryology at the State University of Florida (ECFMG project) and spent four years as an Anatomist at the Medical University of Kuwait. His long-lasting interest was to reconstruct face relief on skulls, where bone surfaces were traumatically affected. He is actively engaged in various international Societies: Czech Anatomy Association, the European Teratology Society, American Association of Anatomists and American Association of Clinical Anatomists.

ivo.klepacek@seznam.cz