

Frontal Sinus Dimensions in the Presence of Persistent Metopic Suture

Silviya Nikolova, Diana Toneva*

*Department of Anthropology and Anatomy, Institute of Experimental Morphology,
Pathology and Anthropology with Museum, Bulgarian Academy of Sciences, 1113 Sofia, Bulgaria*

* Corresponding author e-mail: sil_nikolova@abv.bg

Abstract

The frontal sinus (FS) is an air-filled space and usually appears as two irregularly-shaped cavities separated from each other by a septum. The persisting metopic suture (MS) is considered to be a factor influencing the FS development. In this study we aimed to compare the FS dimensions in metopic (n = 50) and control (n = 75) cranial series and thus to assess the relation between MS persistence and FS pneumatization. All skulls were scanned with industrial μ CT system and volumetric images were generated. The total FS width and the height and depth of both FS lobes were measured.

The persistent MS was frequently co-occurred with significantly small and underdeveloped FS. The significant and positive correlations between the FS measurements showed that the FS pneumatization is a spatially-coordinated process and its progress is proportionately expressed in both vertical and horizontal plates of the frontal bone.

Key words: frontal sinus, *metopism*, persistent metopic suture, volumetric imaging, μ CT scanning