

## DETECTION OF THE ANATOMICAL VARIATIONS OF HUMAN OCCIPITAL CONDYLES IN DIGITAL VISUALISATIONS

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**Objectives.** The present study aimed to determine the variability of the human occipital condyles (OC).

**Materials and Methods.** The virtual 3D dissection table “Anatamage” was used for the visualization of the human occipital bones and condyles. Data were collected from four digital human cadavers of the “Anatamage Table’s” database at the Department of Morphology of Rīga Stradiņš University. The measurements were based on six landmarks and carried out three times by one investigator after several practices and accuracy. The mean of these readings was taken as the observed value. The following parameters of the OC were measured, using a digital roller: length, breadth and several anterior, posterior distances: intercondylar (AICD, PICD), between tip and basion (DAT-B, DPT-B), and between tip and opisthion (DAT-O, DPT-O). Collected data were analyzed using IBM SPSS Statistics

27.0. The location of the hypoglossal canal (HC) and the shapes of OC were visually detected.

**Results.** The mean length and breadth of the OC were  $17.3 \pm 2.1$  mm and  $10.2 \pm 2.1$  mm (right), following  $20.0 \pm 2.9$  mm and  $10.3 \pm 2.2$  mm (left). The mean AICD and PICD were found as  $12.0 \pm 3.7$  mm and  $32.8 \pm 3.8$  mm. The mean DAT-B were  $6.0 \pm 1.8$  mm and  $5.0 \pm 0.8$  mm (right), while mean DPT-B were  $21.5 \pm 1.9$  mm and  $22.0 \pm 4.9$  mm (left). The mean right and left DAT-O were  $30.8 \pm 5.1$  mm and  $28.8 \pm 0.4$  mm, whereas the mean right and left DPT-O were  $20.0 \pm 4.5$  mm and  $19.0 \pm 4.0$  mm. The OC shapes were detected mainly like an oval and kidney-like condyle. The most dominant location of HC was in the middle 1/3 of OC.

**Conclusions.** This study illustrated the anatomical variations of the virtual OC but the detection of them was not the same as in traditional anthropometry. Despite this, these anatomical data may provide a basis for following analyses of the OC in dry skulls and their clinical interpretations.