ABSTRACT

Facial asymmetry is an individual characteristic connected to health, physical attraction and beauty. Researches concerning asymmetry is very beneficial for dentofacial surgery (especially for planning and evaluating operations), for forensic science (person identification), bioarcheology (monitoring stress effects on the evolution of bilateral traits) and sociocultural antropology (the study of attractiveness).

The focus of our thesis lies in monitoring directional and fluctuating face asymmetry, comparing males and females with regard to gender dimorphism. We analysed 143 3D face models among the adult population (58 males with average age 22,6 and 85 females with average age 21,6) and scanned them with InSpeck 3D Mega Capturator II. Then we used the RapidForm software to brush, edit and localize the basic landmarks. The face asymmetry was evaluated through classic morphometry and geometric morphometry. The whole face surface was analysed with Rapidform and Morphome3cs software.

In our group of test subjects (in man as well as women), fluctuating asymmetry was found more often than directional asymmetry. Directional asymmetry, among women test subjects, was found in 42,86% cases, among men test subjects it was in 28,57% cases, in which was more oriented to the left side. The right eye area was proved to be more wider, the middle of the face and the base of auricule was higher on the left side. Side layout in the fluctuating asymmetry was equal, in 75% women more to the right side.

In the analysis of the whole face surface asymmetry, through the Morphome3cs software, the most significant asymmetry was found in both sexes in the left side of the face in the area of the temple, lateral part of forehead, area of eye, supraorbital arch, lateral part of middle face and angle of mandibule. In addition, men shown asymmetry of the chin on the right side.

Key words: 3D model of face surface, directional asymmetry, fluctuating asymmetr