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EXAMINATION OF THE RELATIONSHIP BETWEEN THE LIVER AND SPLEEN VOLUMES BY THE COMPUTED TOMOGRAPHY IMAGES IN HEALTHY SUBJECTS USING THE CAVALIERI PRINCIPLE

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Key words: *volume, computed tomography, image j, Cavalieri principle, liver, spleen*

Background. The increased pressure in the splenic vein is the main cause of the increase of the liver volume. Thus, hepatomegaly and splenomegaly often appear together. It could be proportional relation between spleen and liver sizes.

Aim. In this study, we aimed to estimate the liver and spleen volumes of healthy individuals onthe computed tomography (CT) images using the Cavalieri principle of sterelogical methods and determine the proportional relation between them.

Material and Methods. This study was approved by the Ondokuz Mayis University Ethics Committee. The liver and spleen volumes measurements were performed in 45 individuals (21 males and 24 females), without pathologies in the abdomen. Female and male average ages (±SD) were 56.71±11.11 and 53.08±17.97 years, the heights were 1.59±0.11 and 1.76±0.09 meters in length and the weights were 77.33±21.49 and 86.04±17.56 kg. Each subjects scanned by CT in axialdirection and the section thickness was 1 mm. Images were transferred to the ImageJ software and the sectional cut surfaces of the liver and spleen were measured using the planimetry and the volumes of them were estimated using the Cavalieri principle.

Results and Discussion. Body mass indexes (±SD) were 30.95±10.14 and 27.72±5.51, for women and men, respectively. The liver volumes of the females and males were 1570.91±354.36 and 1778.54±343.46 cm^3, respectively. The spleen volume measurements were 288.81±157.27 and 408.15±274.44 cm^3, respectively.

Conclusions. It was determined that there was a significant positive correlation between the liver and spleen volumes in male and female subjects (r=0.565, p≤0.05 and r=0.352, p≤0.05, respectively).

THE LOCATION OF THE MENTAL FORAMENS IN FEMALES BY COMPUTED TOMOGRAPHY

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Key words: *mental foramen, females, computed tomography*

Background. One of the morphological criteria of clinical importance is the asymmetry (symmetry).

Aim. Of the research was to study the asymmetry (symmetry) of the location of the mental foramen of the lower jaw in women with various defects of the dentition by Kennedy from the point of view of the anatomy of identical objects.

Material and Methods. The asymmetry (symmetry) of the mental foramens was studied on 21 computer tomograms (CT). In the research triangulometry of the mandible was used. All patients were assigned to the second period of middle age. The defect of dentition was assessed by Kennedy (E. Kennedy, 1923).

Results and Discussion. On CT of women with dentition defect of class I it was revealed that the average area of the right triangle was 197.03±25.00 mm^2 (p≤0.05), and the average area of the left triangle was equal to 168.28±21.97 mm^2 (p≤0.05). The coefficient of variation of this parameter showed more pronounced average oscillation on the right side. Complete symmetry of the location of the mental foramen on CT in women of the second period of middle age was not observed.

Conclusions. Thus, for the mental foramen in women of the second period of middle age is characterized by significant variability of location. And in persons with a defect of the dentition of class I on the right side it is more pronounced, while with a defect of the dentition of class III it is more pronounced on the left side.