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імені О. О. Богомольця

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НАУКОВО-ПРАКТИЧНЕ ВИДАННЯ
**УКРАЇНСЬКИЙ НАУКОВО-МЕДИЧНИЙ
МОЛОДІЖНИЙ ЖУРНАЛ**

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- 221 — Стоматологія
- 222 — Медицина
- 225 — Медична психологія
- 226 — Фармація, промислова фармація
- 228 — Педіатрія

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The importance of educating imaging anatomy in physical therapy

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Introduction: Today, in Ukraine, which is suffering from Russian aggression, the flow of injured and wounded among the military and civilians is not decreasing. In large hospitals and rehabilitation centers, physical therapists work side by side in one interdisciplinary team, with orthopedists, neurologists and radiologists. These specialists must communicate in “one professional language”, and for this, fundamental knowledge of X-ray anatomy must be laid in the process of training a future physical therapist.

Aim: To substantiate the necessity and feasibility of introducing radiological anatomy into modern physical therapist training, which would include normal radiological anatomy with an emphasis on the musculoskeletal system and typical pathological findings (fractures, cracks, herniated discs, stenoses, degenerative changes).

Results: Physical therapists work with patients who have an X-ray diagnosis, ultrasound, CT, MRI results. They do not make an X-ray diagnosis, but must correctly interpret the image and correlate it with functional changes. Without a basic understanding of radiological anatomy, it is difficult to assess movement restrictions, understand the localization of organ damage, and subsequently justify rehabilitation methods. Knowledge of radiological anatomy allows you not to harm the patient. Students who are studying to be future physical therapists do not need to be taught a full course in radiology, as future doctors do, but the basics of radiology (X-ray, CT, MRI, musculoskeletal ultrasound), normal radiographic anatomy of the spine, trunk, limbs, joints, skull and brain (at a basic level). The student should learn functional interpretation: how radiographic images explain pain and limitations in movements.

Conclusions: Students, future physical therapists, master basic approaches to reading radiographs, MRI, CT, and ultrasound, and study how to apply imaging results to assess the patient's functional status, and drill interdisciplinary collaborative learning.

Keywords: radiology, musculoskeletal system, education, physical therapy specialty, collaborative learning.

Echocardiographic studies of the left ventricular papillary muscles: structural variations as morphological predispositions for the development of cardiac biomechanical dysfunction

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Introduction: The papillary muscles of the left ventricle are a key component of the subvalvular apparatus of the mitral valve. They play a crucial role in ensuring its stability during systole. Abnormalities in their anatomical structure or spatial organization can lead to changes in chordal tension and impaired coaptation of the mitral valve leaflets, which is one of the mechanisms underlying the development of valvular dysfunction. The study of the morphological characteristics of the papillary muscles is of great importance for clinical cardiology and cardiac surgery.

Aim: To analyze the morphological variants of the papillary muscles of the left ventricle and assess their clinical significance based on echocardiographic findings and current literature data.

Materials and Methods: A review and comparative analysis of morphological and clinico-anatomical studies were conducted, including data from autopsy observations, systematic literature reviews, and the results of echocardiographic studies. Echocardiographic examinations were performed using the Acuson

SC2000 PRIME ultrasound system (SIEMENS Healthineers). Eighteen echocardiography reports of patients aged 23–67 years were analyzed. During the analysis, data were summarized regarding the number, shape, topography, attachment patterns, and morphometric characteristics of the left ventricular papillary muscles, as well as their relationship to the functional state of the mitral valve.

Results: Analysis of the echocardiographic studies we conducted revealed that in 7 patients (38.9%), the structure of the papillary muscles corresponded to the typical variant with two main papillary muscles. Morphological peculiarities were identified in 11 patients (61.1%). Specifically, in 5 patients (27.8%), fragmentation of the papillary muscles was observed, with the formation of two- or three-bundled structures. In 3 patients (16.7%), changes in the shape of the papillary muscles were detected (flattened or elongated configuration). In 2 patients (11.1%), minor deviations in the topography of the papillary muscles relative to the walls of the left ventricle were identified. In 1 patient (5.5%), morphological features were combined with functional changes in the mitral valve in the form of mild mitral regurgitation.

Thus, the results of the analysis confirm that the structure of the papillary muscles is a dynamic and individually variable component of the heart, closely associated with the functional state of the mitral valve.

Conclusions: Only 38.9% of patients had typical papillary muscle morphology. Among the variations in papillary muscle structure, fragmentation of muscle fibers and changes in shape were the most common. In addition, deviations in topographic positioning relative to the walls of the left ventricle and functional peculiarities of mitral valve function were observed.

Keywords. Echocardiographic examination; Functional changes; Morphology of papillary muscle; Variants of structure.

Selected somatological characteristics of the ukrainian population of the carpathian antropological zone

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Introduction: One of the important branches of anthropological science is medical anthropology, which focuses on individual variations in morphophysiological traits that form intergroup differences among populations of the globe. The term anthropological type is used to denote a generalized description of particular groups of human populations characterized by a specific set of anthropological features and not directly linked to other classification categories. This term is relatively conventional and unstable due to the variability of physiological traits, uneven study of different human populations, and the lack of a universally accepted classification of races and types. Therefore, numerous classifications of anthropological types exist. Based on accumulated somatological data, anthropologist V. Dyachenko identified five anthropological zones within Ukraine: Central Ukrainian, Carpathian, Lower Dnipro, Desnian, and Ilmen–Dnipro, which differ in certain somatological characteristics.

Aim: To study selected somatological characteristics of Ukrainians from the Carpathian anthropological zone and compare them with anthropological data from the literature.

Materials and Methods: A total of 100 young individuals were examined, including 44 males and 56 females. All participants were representatives of the Carpathian anthropological group (native residents of Ivano-Frankivsk, Zakarpattia, and Lviv regions). A complex of somatometric and somatoscopic examinations was conducted, including measurements of height (body length), trunk length, shoulder width, transverse and longitudinal skull diameters, bizygomatic diameter, nasal height and width, as well as assessment of the nasal bridge shape and the presence of the upper eyelid fold and epicanthus.

Results: When classifying individuals by constitutional types, it was found that, regardless of sex, the dolichomorphic body type predominates (52%), while mesomorphic individuals account for 40%, and brachymorphic individuals are the least common (8%). The average height of men is 171.92±0.71 cm, and of women – 165.19±0.65cm. According to V. Dyachenko, representatives of the Carpathian zone are characterized