М А Т Е Р І А Л И

106-ї підсумкової науково-практичної конференції
з міжнародною участю
професорсько-викладацького колективу
БУКОВИНСЬКОГО ДЕРЖАВНОГО МЕДИЧНОГО УНІВЕРСИТЕТУ
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Матеріали підсумкової 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) – Чернівці: Медуніверситет, 2025. – 450 с. іл.

У збірнику представлені матеріали 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) зі стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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The upper wall of the maxillary sinus is formed by the orbital surface of the maxillary bone, which is also the lower wall of the orbit. The middle edge of the sinus was projectively located on the border between the inner edge of the lower and middle walls of the eye fossa. Its lateral edge topographically corresponded to the inferior orbital fissure in 20 specimens (80 %).

The posterior wall of the maxillary sinus topographically corresponded to the maxillary hill. In 22 specimens (88 %), the sinus was adjacent to the posterior cells of the ethmoidal labyrinth with its posterosuperior edge. In one specimen (4 %) it was located at the wall of the sphenoid sinus. The lower wall of the maxillary sinus is formed by the cellular process of the maxilla. Depending on the pneumatization, its bottom was at different levels relative to the lower wall of the nasal cavity.

The middle (nasal) surface of the maxillary sinus simultaneously formed part of the lateral wall of the nasal cavity. In the thickness of its anterior section there was a nasolacrimal canal, which ended in the lower nasal passage under the inferior nasal concha. The spongy substance decreases sharply. The height of the maxillary sinus ranged from 27.0 mm to 37.0 mm, the width from 21.0 mm to 26.0 mm, and the anteroposterior dimension from 27.5 mm to 33.0 mm.

Based on radiological data, we can conclude that in elderly people thinning of the walls of the maxillary sinuses can be observed more frequently than in middle-aged people: the latter ones suffer from thinning of the walls of the maxillary sinuses in more than 1/2 of cases, and the elderly - in 3/4 cases. The average height of the sinuses for the age group is 35.2 mm, the width on the right is 27 mm, on the left is 25.5 mm and the depth is 44 mm.

At the end of the old period, there is a decrease in the height of the sinuses by 0.7 mm, reaching an average of 34.5 mm; sinus depth – 42.0 mm and width – 25.2 mm. In 1/5 cases, the level of the sinus floor was higher than the bottom of the nasal cavity. Within this age group, cases with foci of osteoporosis in the zygomatic process of the upper jaw are almost twice as common. In half of the cases, unusually wide sinuses are found – 27 mm.

Conclusions. Based on the complex of carried out morphological research methods, it has been established that during elderly and senile age reverse processes of human ontogenesis occur, involutive changes occur in the walls of the maxillary sinuses.

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IMPLEMENTATION OF MODERN THREE-DIMENSIONAL MODELING METHODS IN THE PROCESS OF FORENSIC MEDICAL INVESTIGATION OF GUNSHOT INJURIES CAUSED BY MEDIUM CALIBER AUTOMATIC FIREARMS

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Introduction. We draw attention to three-dimensional (3D) modelling, which current researchers are increasingly incorporating into the forensic medical examination process of firearm injuries.

The aim of the study. To implement the three-dimensional spatial reconstruction of gunshot injuries into the process of their forensic investigation by studying morphological signs of injuries, caused by medium caliber automatic firearms (Czech CZ83 automatic pistol).

Material and methods. We used the Czech CZ83 automatic pistol loaded with 7.65×17mm browning as a medium caliber firearm. The ballistic clay Roma Plastilina No. 1, manufactured in the USA for bench ballistic tests, was used as a target and a gunshot trace reconstructing material. The series of experiments consisted of 15 gunshots; then the main morphological elements of the skin wound, subcutaneous adipose tissue of the pig and the entry, middle and exit wound channels were investigated, i.e. they were photographed, subjected to photogrammetry and converted into the three-dimensional format with the help of graphic design software "Agisoft PhotoScan" and "3ds max".

Results. The obtained results were grouped, subjected to statistical treatment, comparative analysis and discussion. There were detected direct moderate correlations (with a value of 0.54, p=0.03) between the initial velocity, kinetic and specific energy and the diameter of the exit wound

channel, as well as between the mentioned gunshot characteristics and the diameter of the entry wound (with a value of 0.61, p=0.02).

Conclusions. The increase of the initial velocity of a bullet, its kinetic and specific energy affects in direct ratio the diameter increase of the entry wound and the exit wound channel, when fired from the CZ83 automatic loaded with 7.65×17mm browning. In addition, the capabilities of the modern three-dimensional modeling make it possible to create electronic archives of the main elements of gunshot wounds, to record their dimensions with 10-fold accuracy, and to conduct differential diagnosis between certain types of firearms cartridges.

Shylan K.V.

APPLICATION OF THE METHOD OF MUELLER-MATRIX TOMOGRAPHY OF TISSUES AND BLOOD FOR PRECISE DETERMINATION OF BLOOD LOSS DEGREE

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Introduction. Accurate determination of blood loss degree is very important for forensic medical experts, as it helps to objectively assess traumatic injuries, determine the circumstances of death, and contribute to justice in legal proceedings. Determining blood loss volume is especially important in cases of violent death, accidents, and in cases of massive blood loss due to disease. Modern methods often have limited accuracy, which can affect the objectivity of conclusions and lead to possible errors in judicial decisions. Therefore, it is urgent to develop more accurate technologies, such as the laser polarimetry method, to increase the reliability of forensic medical examinations, improve the quality of forensic conclusions, and contribute to a more objective determination of the causes and circumstances of death.

The aim of the study. Development of objective forensic criteria for digital differential Mueller-matrix tomographic diagnostics of the volume of acute blood loss.

Material and methods. Samples of biological tissues and blood were collected from 82 deceased people with various degrees of blood loss in the range from 0 mm³ to 3000 mm³. The study was conducted using the Mueller-matrix tomography method of biological tissues according to proposed algorithm.

Results. The obtained results of the tomographic reproduction of the coordinate distributions of the circular dichroism value illustrate the existence of differences between the coordinate distributions of values for histological sections of biological tissues of deceased people with different degrees of blood loss. Therefore, the change in the values of statistical moments for biological tissues at different values of blood loss is established: SM_1 varies from 0,096 to 0,024; SM_2 - from 0,21 to 0,057; SM_3 - from 0,48 to 2,04; SM_4 - from 0,23 to 2,84.

Conclusions. For all studied biological samples, the method of differential Mueller-matrix tomography of the circular dichroism of the polycrystalline component demonstrates sensitivity to changes in the volume of blood loss in the range of 0 mm³ - 2500 mm³. The accuracy of this method ranges from 86% to 92%, which ensures high reliability in the analysis of biological tissues of deceased people with varying degrees of blood loss.

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COMPREHENSIVE APPROACH TO THE REHABILITATION OF PATIENTS WITH TEMPOROMANDIBULAR JOINT DYSFUNCTION COMPLICATED BY PERIODONTITIS

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Intoduction. The co-occurrence of temporomandibular joint disorders (TMD) and periodontal disease complicates the clinical picture, making it difficult to isolate each condition as a distinct nosological form. Only through a comprehensive set of diagnostic evaluations can the clinical manifestations be accurately refined, enabling the development of preventive and therapeutic algorithms aimed at patient recovery. Timely diagnosis and rational treatment of