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FORENSIC MEDICAL DIAGNOSTICS OF LETHAL DAMAGES IN CASES OF BODY FALL FROM GREAT HEIGHT INTO THE WATER

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Introduction. Quite a lot of scientific researches are devoted to forensic medical diagnosis of body falls from a great height to the blunt solid object with prevailing surface. However, we didn't come across works devoted to establishing the nature of damage, mechanism of its formation & thus the causes of death due to fall of a body from a great height into the water. At the same time there are known cases of athletes jumping into the water from a height of 52.4 m, without causing any damage.

Taking into account the foregoing, in our opinion, the case of interest from our practice of commission forensic examination on the lethal trauma due to citizen K. falling into the water from a great height, whose body was found 29/06/2009 in the seaside area waters of Simeiz rock massif. According to eyewitnesses, K made the jump into the water from a lookout deck of the 'Diva' cliff from a height of 55 meters. During examining of the corpse in Yalta department of the Crimean Republican bureau of forensic medical examination revealed multiple bruisings, abrasions of the face, on the front surface of the neck, damages of mouth vestibule mucosa, transverse fractures of hyoid bone horns, focal hemorrhages under the pia mater of parietal areas & indicative changes of asphyxial or rapidly occurred death. Corpse blood contained 3.76 ppm of ethanol. Diatom plankton was not found. The expert didn't detect any signs of concussion. The expert who conducted the post-mortem examination knew no precise details so he concluded that the death of K. was the result of mechanical asphyxia from compression of the neck and closing of the mouth & nose openings with hand,& only after being followed by immersion of the body in the water.

Later, however, the experts of the Crimean Republican bureau conducted commission investigation of citizen K. death & studied all case materials. Herewith, the expert commission came to a different conclusion about the possibility of the injuries formation from the body fall from a great height, with upside down vertical entry into the water, the collision of the face and the front of the neck with the water surface, followed by asphyxial drowning.

Such expert's opinion didn't convince law enforcement agencies in their judgments about the circumstances of the incident. Commission forensic investigation was re-appointed in Kharkov Regional Bureau of Forensic Medicine, in which conducting leading experts of the Department of Forensic Medicine of Kharkov National Medical University took an active participation. Having studied the case materials and conducting the necessary studies, experts have come to the conclusion that as a result of direct, coordinated drop of citizen K. on the water from a height of 55 m, entering it with shod feet vertically, & a bit inclined front body surface to the water plane , subsequent dives, and a sharp blow on the water by front of the neck, front to back, and a few from the bottom up, it caused soft tissue damages. Hyoid bone fracture, originated due to its displacement backwards & upwards & horns adjoining on the cervical spine. Due to a sharp throwing of water jets on the vestibule, the oral cavity, larynx & hydrodynamic shock, the persistent laryngospasm, mechanical asphyxia occurred and that was the cause of death.

Conclusions. Based on the above-mentioned observations it can be concluded that the forensic diagnosis of injuries of body falling into the water from a great height requires improvement. There is a major necessity in comprehensive study of such trauma for identifying clear diagnostic criteria for its forensic evaluation.

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EFFECTS OF HIGH-FREQUENCY RANGE OF ELECTROMAGNETIC RADIATION ON THE GROWTH PROPERTIES OF PATHOGENIC CORYNEBACTERIA

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Introduction. In our time, the influence of electromagnetic radiation on human exceeds the natural rate of a thousand times, but in the literature there are only individual variability with respect to opportunistic bacterial groups due to the influence of electromagnetic radiation, so Corynebacterium as a classic example of infectious agents is a good model for the study of the influence

Aim. The purpose of the definition of work- growth properties of pathogenic Corynebacteria under the influence of low-energy physics research factors.The object of research - strains of C.diphteriae.Sources of electromagnetic radiation - standard generators G4-141 with power P = 5 mW UHF inductor fluctuations had a standard signal G3-109. Found that treatment of bacterial suspensions wave with frequency of 61.0 GHz led to increase the growth rate of pathogenic Corynobacterium 1.2 times, while the frequency of 42.2 GHz led to a reduction in growth of 1.3 times. Thus, defined two modes, which led to the largest change in the growth rate of diphtheria: sequential mode ultrasonic irradiation with waves 61 GHz to cause the greatest encouragement, and sequential mode radiation waves 42.2 GHz, conversely inhibited the growth properties of pathogenic Corynebacteria .Certain modes opens the possibility to regulate the rate of growth of cultures of Corynebacteria in biotechnological processes as in the preparation of tetanus anatoxin , and the preparation of vaccines based on cell antigens.

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CONGENITAL DISEASE OF HEART

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Introduction. A congenital heart defect is a problem with the structure of the heart. It is present at birth. The defects can involve the walls of the heart; obstruct blood flow, the valves of the heart, and the arteries and veins near the heart.

Some congenital heart defects are as follows.

Aortic stenosis is a narrowing of the aortic valve or a narrowing of the aorta directly above (supravalvar) or below (sub aortic) the aortic valve. Normally, oxygen-rich blood is pumped from the left ventricle, through the aortic valve, into the aorta and then out to the body. With aortic stenosis, it makes it very hard for the heart to pump blood to the body.