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ABOUT ASPECTS OF FORENSIC JUDICIAL RESEARCH IN WATER

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Resume

The article is devoted to the forensic diagnosis of drowning. In addition to the well-known specific features when drowning, special attention is paid to the identification of diatom plankton. The necessity of creating a catalog of diatom plankton of the country's water bodies was noted.

Keywords: forensic medical examination, drowning, death.

ОБ АСПЕКТАХ СУДЕБНО-МЕДИЦИНСКОГО ИССЛЕДОВАНИЯ УТОПЛЕНИЯ В ВОДЕ

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Резюме

Статья посвящена судебной-медицинской диагностике утопления в воде. Изучены частота встречаемости и общеизвестные специфические признаки при утоплении. Большинство из имеющихся и описанных морфологических признаков нельзя рассматривать как абсолютно характерные для утопления. Для повышения достоверности полученных данных необходим поиск новых критериев оценки этого состояния.

Ключевые слова: судебная-медицинская экспертиза, утопление, смерть.

СУВДА ЧЎКИШНИНГ СУД ТИББИЙ ДИАГНОСТИКАСИ АСОСЛАРИ

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Резюме

Мақола сувда чўкишнинг суд тиббий диагностикасига бағишланган. Сувда чўкишнинг учраши миқдори ва умумасфиктик специфик белгилар ўрганилди. Тавсифланган барча морфологик белгиларни чўкишга хос деб қабул қилиш мумкин эмас. Мазкур ҳолатнинг ишончлилигини ошириш мақсадида янги критерияларни ишлаб чиқиш лозим бўлади.

Калит сўзлар: суд тиббий экспертиза, сувда чуқиш, ўлим, диатомли планктон.

Relevance

In recent years, the proportion of violent deaths has increased in forensic and clinical practice, and ranks first among mortality rates. Establishing the cause and mechanism of death, retrospective restoration of the circumstances of the incident (especially when drowning), identifying signs of lifetime damage, differential diagnosis of the identified changes are the main issues of forensic medical examination [1].

Among the causes of violent death, one of the main places is occupied by mechanical asphyxia, which accounts for 28-30% of violent deaths. Drowning accounts for 39% of the indicated volume of cases [3]. Drowning is a type of death from mechanical asphyxia resulting from the closure of the respiratory tract with fluids, most often water. Drowning is currently a serious social problem, since a significant number of people, mostly young people, are exposed to this type of death [4].

Analysis of the structure of violent death, carried out on the basis of WHO materials, shows that drowning ranks 6th in it (7.3%) and exceeds the number of deaths as a result of fires and poisoning [6].

In a study of 771 cases of drowning between 1977 and 1993 in Ontario (Canada), the researchers found that 738 of them occurred in fresh water, 33 in the bathroom, toilet, pool. Diatoms were found in 28% of cases of drowning in fresh water and in 12% in closed water bodies (mainly in baths) [5].

According to V.A. Sveshnikov et al. (1986), Yu.S. Isaeva (1991), drowning in water is an independent type of death with certain variants of pathogenesis and thanatogenesis inherent in it, caused by acute dysfunction of vital systems of the body. In recent years, many resuscitators believe that the course of the process of drowning according to one type or another is determined by the state of the body and, above all, the central nervous system, with pronounced inhibition of its higher parts as a result of alcohol intoxication, brain injury, fright and feelings of intense fear, the course of drowning is most likely by asphyxial type [2].

Purpose of the study. The study of the frequency of occurrence and the establishment of characteristic general asphytic external signs during drowning.

Material and methods

As a material, we carried out a retrospective analysis of the conclusions of the forensic medical examinations of corpses, drawn up about drowning in the units of the Republican Center for Forensic Medical Examination of the Republic of Tajikistan in the period 2013-2017.

For this study, 91 cases of drowning in the river reservoirs of the city of Dushanbe, where the most frequent cases of drowning occurred, were also served.

The obtained digital data were processed by the method of variation statistics with the calculation of the Fisher - Student criteria.

Result and discussion

The results of the study showed that in 64 cases (70.3%) of drowning were males, and in 27 cases (29.7%) were females. In terms of age, all cases of drowning were distributed as follows: children under 10 years old accounted for 7.2%, 11-20 years old - 9.4%, but most often people aged 21-30 years old were drowned (47.6%) and 31 -40 years (29.4%). Least of all deaths from drowning were among elderly and old people, i.e. over 60 years old (6.4%). Depending on the nature of dying, as our research

showed, 91 corpses of persons taken out of the water can be conditionally divided into three types of drowning in water: true, asphytic and mixed. Of these, the most common was the true type of drowning - 48 (52.7%), then mixed - 23 (25.3%), and the least cases of the asphytic type were encountered - 20 (22%).

With the true type of drowning, the following characteristic morphological signs were found:

- sharp pallor of the skin (82.7%);
- persistent fine-bubbly whitish-pink foam protruding from the openings of the nose and mouth (70.6%), foam in the lumen of the trachea and bronchi;
- pale, blue-purple with a pinkish or reddish tinge, cadaveric spots (78.7%);
- acute swelling of the lungs (56.4%), rib prints on the surface of the lungs (56.4%);
- ecchymosis and large vague hemorrhages in the form of spots or stripes under the pleura of the lungs, having a pale pink color (88.7%);
- different color of blood in the ventricles of the heart (lighter - in the left, darker - in the right) (92.4%);
- the presence of fluid in the stomach (76.4%), duodenum (68.3%) and in the initial part of the small intestine (56.7%);
- the presence of fluid in the main and maxillary sinuses (46.4%);
- edema of the liver, bed and wall of the gallbladder and hepatoduodenal fold (74.6%);
- venous plethora of internal organs (98.4%), with relative anemia of the spleen (88.2%).

All of the above signs in combination, in our observations, were found in 86.4% of cases of true drowning.

Signs such as goose bumps (36.2%), maceration of the skin (wrinkles, pallor, "washerwoman's hand", "death gloves) (26.2%), transudate in the pleural and abdominal cavities (24.7%), fluid in the tympanic cavities (2.7%), the presence of silt, sand, algae in the upper respiratory tract, swelling and maceration of the mucous

membrane of the larynx and trachea were less common, and they, in fact, are signs of the presence of a corpse in water.

In the true type of drowning, the most pronounced changes were noted in the study of the lungs. Lungs in a state of acute swelling completely filled the pleural cavities and almost completely covered the cardiac shirt (78.6%).

At the same time, the swelling of the lungs was not as sharp as with the asphyxial type of drowning, however, with the true type, the edema was widespread and the hemorrhages under the visceral pleura were much larger. To the touch, the tissue of the lungs with a doughy consistency and from the surface of the incisions revealed a large amount of foamy liquid.

In the case of the asphyxial type of drowning, signs typical of obstructive asphyxia prevailed: an external examination of the corpse revealed swelling of the face with a bluish color, subconjunctival hemorrhages, the absence of foam from the mouth and nose openings, and the presence of abundant cadaveric spots of a pale bluish color.

We almost did not observe traces of an involuntary act of urination, defecation and the presence of traces of sperm on the glans of the penis in men, except in some cases (2.6%). The indicated signs are not preserved in drowned people due to their washing away with water.

In the oral cavity (36.2%), pharynx (24.4%), and sometimes in the respiratory tract (12.7%), we found foreign particles: sand, silt, algae.

With the mixed type of drowning, we observed an alternation of signs of the true and asphyxial type with less pronounced circulatory disorders.

The lungs in most cases, in a state of distention, completely filled up the pleural cavities and completely or partially covered the heart shirt.

There are two main forms of swelling: dry and wet (edematous). In the dry form, a sharp emphysematous swelling of the tissue was expressed everywhere; edema and hemorrhage lesions were rare. In the wet form, the swelling of the lungs was not very sharp, as in the true type of drowning. However, here the lung tissue was a doughy

consistency and a fairly large amount of foamy liquid was released from the surface of the incisions.

At the same time, the establishment of a specific type of drowning and the need to substantiate each of these provisions causes certain difficulties for the forensic medical expert due to the fact that the overwhelming majority of the proposed diagnostic signs are based on a statement of the fact that the drowning environment has penetrated into the body.

Conclusion

Thus, the analysis of the material under study indicates that the most frequent among the drowned persons were males, and according to age indicators, persons of the most efficient age (21-40 years old) prevailed among the drowned. Among all drowning, the prevalence of the true type of drowning was noted. The medical examiner must carefully and purposefully examine the corpse to establish signs of drowning.

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