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SINGLE- AND MULTI-DISCIPLINE TRAFFIC ACCIDENT EXPERT REVIEWS COMMISSIONING STATISTICS IN THE CONTEXT OF RETROSPECTIVE PLACEMENT OF THE DRIVER AND PASSENGERS IN THE CAR INTERIOR IN DIFFERENT REGIONS OF UKRAINE IN 2008-2017

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Resume. The current study analyses single- and multi-discipline traffic injuries expert reviews commissioned in different regions of Ukraine and correlates the number of commissioned expert reviews with the placement of the driver and passengers in the car interior.

Key words: road accident, single-discipline expert review, multi-discipline expert review, driver, passenger.

УДК: 340.6:[616.127:616.5]-091.1-91.8(043.3)

ASSESSMENT OF ARCHIVAL FORENSIC EXAMINATION ACTS FOR DETERMINATION OF THE PRESCRIPTION OF DEATH

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Summary. The article deals with the urgent issue of forensic examination, namely determination of the prescription of death. Practical and scientific relevance of the issue is confirmed by the current normative and legal documents. Modern methods of solving the issue are considered. Perspective ways of determining the prescription of death are singled out. Further study of the problem involves elaboration of an original research card, used to assess 3413 forensic tests of corpses in order to identify problematic issue of the prescription of death and to suggest ways to optimize the work of forensic doctors in this direction and to improve further research.

Key words: time of death, forensic medical test, archive, complex of methods.

Introduction. «The prescription of death is the time which elapsed since a person's death until the first examination (investigation) of the corpse at the place of its detection or in the morgue». Agreeing with the preliminary opinion of V.D. Mishalov et al. (2014), we also confirm that the sooner a corpse is investigated after death, the more precise it is possible to determine the limit data on the prescription of death (hereinafter referred to as PD) [3, p. 5].

The following authors emphasize the fact that in order to address the issue of PD, forensic experts use many methods. They state that there are still no such methods, techniques or data that would unambiguously and quite accurately determine the time elapsed after a person's death [3, p. 5].

Determination of the prescription of death is a mandatory and important stage of forensic examination of corpses. This parameter is one of the main markers of an objective and complete examination and its absence raises questions on legal significance of forensic examination as evidence in a criminal (civil) case.

Scientific significance of the study of the prescription of death lies in the presence of this topic in a number of key areas of scientific research identified by the current profile of the specialty «14.01.25 – forensic medicine» in Ukraine. Paragraph 2.5 of the main directions of scientific research of the profile of the named specialty is defined as «Determination of the prescription of death» [5]. Besides, the Regulation on the Bureau of Forensic Medical Examination of health departments of regional executive committees and the Republican Bureau of the Autonomous Republic of Crimea, approved by the order of the Ministry of Health of Ukraine «On the Development and Improvement of Forensic Medical Service of Ukraine» as of 17 January 1995, No. 6 (hereinafter referred to as the order of the MoH No. 6), clause 2.6 paragraph 2 «The tasks of the Bureau» require «to improve the quality of the examination by introducing into the forensic medical practice new research methods approved by the Ministry of Health of Ukraine and continuous improvement of the activities of forensic medical experts» [6].

The significance of the declared subject for forensic practice involves highlighting this issue in the main departmental organizational and methodological guidelines for conducting forensic tests. Thus, general part of the Rules for forensic examination (investigation) of corpses in the Bureau of Forensic Examination, approved by the order of the MoH No. 6, clause 1.2 states that «examination in the department is carried out in order to determine the causes of death, presence, nature and mechanism of bodily injuries, the time of death and other issues raised by inquiry agencies, investigators, prosecutors and the court, and resolution of other issues under the purview of this type of forensic examination» [6].

V.T. Bachinsky et al. (2016) insist that «it is necessary to search for the newest techniques based on the classical methods of biological tissue taking to give a possibility to obtain data objectively and independently from external factors, to conduct research using modern biophysical methods of diagnosis» [1, p. 23, 24]. We support their approach.

Highlighting the procedure for determination of the prescription of death as a scientific and practical problem and solving this problem, in our opinion, should be based on a comprehensive methodology [2, p. 152; 4]. That is, the research of scientists and the achievements of forensic doctors show the need to distinguish the complex of modern informative methods of PD diagnosis with high accuracy and reliability as compared to the current methods.

The aim of the study. Basing on the assessment of archival forensic examination acts for determination of the prescription of death, to identify problematic issues of PD and to suggest ways to optimize the work of forensic doctors in this direction and improve further research.

Materials and methods of research. The materials of the study were our own forensic tests of corpses who were referred to forensic examination by the decision of police investigators or investigating judges and the archival forensic medical examination acts at the department of Kharkiv Regional Prosecutor's Office for 2017 solely concerning PD diagnosis. Digital material was processed by variation statistics methods.

Original «Registration Card for the Archival Material Study Record ...» was created for the processing of archives and each of these cards had a number corresponding to the registration number of the corpse in the department for forensic examination of corpses. This «Registration Card ...» had a profile section, general information on PD, results of the study of post-mortem changes during the forensic examination (according to the quality standard) and information on PD determined by experts using additional high-tech methods.

Passport part of the «Registration Card ...» includes information on:

- Expert Opinion number;
- gender and age of the deceased person;
- date of examination;
- forensic examination.

General information of the «Registration Card ...» on PD had information on the following:

- the issue of PD determination in the decision on the appointment of forensic examination;
- copies of the report concerning the inspection of the corpse at the place of its detection;
- registration of post-mortem changes in the report concerning the inspection of the corpse at the place of its detection;
- registration of air temperature at the place of detection of the corpse.

The results of the study of post-mortem changes during the forensic examination (according to the quality standard) in the «Registration Card ...» contain the following information regarding:

- algor mortis with its determination by touch and measurement of body temperature under the armpits and rectally (1st and 2nd measurements);
- rigor mortis and its presence in the muscles of the face, neck, upper limbs and muscles of the lower extremities;
- livor mortis, and if present, to press the spot with a finger or dynamometer plunger to define the time of initial color restoration (three times);
- post-mortem drying visually on the mucous membrane of the oral and nasal cavity, conjunctiva and sclera, and other parts of the body;
- visual and histological autolysis;
- late putrid phenomena visually.

The «Registration card ...» data regarding the expert's PD determination by additional high-tech methods included histological, histochemical, immunohistochemical, biochemical, biophysical or any other methods used by the expert.

The study involved analytical assessment of 3413 Expert Opinions from the total number of post-mortem examination in the above mentioned department (3523) for 2017, which was 96.9%. Other 3.1% of post-mortem examinations were not included in the general sample (some of them related to unknown persons, and some Expert Opinions were temporarily absent from the archive as a result of extraction for additional investigative and law enforcement actions).

Results and discussion. The study of gender differences in PD determination when assessing the archives showed the absence of such differences. That is, the presence in the decisions on the appointment of forensic examination for PD determination statistically and reliably did not depend on the gender of cases assessed in the department of forensic examination of corpses.

The archives for 2017 showed a significant predominance and desire of the police investigating authorities to appoint forensic examination of the corpses of those who died as a result of suspected violent death, or more precisely, the investigative police authorities appointed expert examination in cases of sudden death 4 times more often than in cases of violent death. During this period, out of a total of 3413 forensic autopsies, sudden death amounted for 2703 cases (79.2%), violent deaths in 603 cases (17.7%), cause of death was not determined in 107 cases (3.1%). It is difficult to provide an explanation for such an imbalance on the part of forensic doctors.

According to archival forensic data for 2017, operational investigative group came with a forensic expert for examination of corpse at the place of its detection in 100% of cases, with the subsequent delivery of the corpse for forensic medical examination. But only in 949 cases (27.8%) the investigator, along with the decision to appoint an examination, provided a copy of the inspection report of the place of the event. Inappropriate performance of duties concerning the mandatory provision of the protocol copy is, first of all, the fault of police investigators, but forensic experts were also not meticulous as for requiring additional materials for conducting an examination (copies of the inspection report of the place of the event).

Assessment of copies of the inspection report of the place of the event showed that 925 copies of protocols out of 949 registered post-mortem changes (phenomena), which corresponded to 97.5%. But only 179 copies of protocols (18.9%) recorded air temperature. Other external factors influencing PD determination were not mentioned at all, particularly the speed and direction of wind, humidity, atmospheric pressure. Such mistakes depend on the conscience of both the investigator and forensic doctor.

The study showed that out of the total number of processed archival examination acts (3413), the decisions on their appointment implied PD determination in 2843 cases (83.3%). That is, the interest of investigators in this issue was high. But it is revealing that investigators required PD determination in 449 cases of 603 violent deaths (74.5%), and as a result of sudden death – in 2308 cases of the total sudden death rate of 2703 (85.4%). The issue of exceeding the specific weight of PD determination by 10% in sudden death should be forwarded to the judicial authorities. The specific weight of PD determination in cases of unidentified cause of death was 80.4% (86 out of 107).

The study implied evaluation of correlation of motivated and unmotivated refusals of forensic experts to determine PD by assessment of archival examination acts.

We state that there were not any cases ignoring the question of PD, that is, 100% of the examinations under investigation had at least some kind of answer to the question of PD.

At the same time, in 410 cases out of 3413 (12.0%) experts declared it impossible to answer the question of PD without any justification of their position. In 1628 cases out of 3413 (47.7%) forensic experts evaded the question of PD, motivating their position at the end of the examination by the absence of a copy of the report of the location of the event with the data on post-mortem changes.

In 743 cases out of 3413 (21.8%) forensic doctors justified their response to the PD question only with information on the post-mortem changes detected during the inspection of the place of the event. In 530 cases out of 3413 (15.5%) experts relied only on the results of the study of post-mortem changes in the dissection room during autopsy. In 74 cases out of 3413 (2.2%) experts used the information only from the accompanying letter of the ambulance on the time of death. And only in 28 cases out of 3413 (0.8%) forensic experts motivated their answer to the question of PD by the results of the study of putrid phenomena during the inspection of the corpse at the site of its detection and data obtained in the study of post-mortem changes in forensic medical department.

The study of archival forensic documentation showed another sad fact of negligence – forensic experts measured the temperature of the corpse before its dissection only in 6 cases out of 3413 (0.2%). Also, isolated cases concerned the study of post-mortem drying and the transfer of relevant pieces to experts-histologists to determine the stage of livor mortis to answer the question of PD.

The processed archival forensic material showed a number of expert mistakes (intentional and negligent) when answering the question of PD. These expert mistakes are proposed to be grouped into the following: methodological, organizational, technical, tactical. They substantially affect the value and objectivity of Expert Opinions on PD. The reasons for these expert mistakes are in the non-fulfillment (partial execution and / or disregard) of the regulations of the forensic medical documents [6]:

- 1) clause 2.8 of the Instruction on conducting forensic examination, approved by the order of the MoH No. 6,

which states: «In conducting an examination, a forensic expert shall have the right to examine the materials of the case relating to the examination. If the materials provided are insufficient to resolve the questions raised before the expert, he / she has the right to file a petition to the person who appointed the expert examination to provide additional materials and documents necessary for carrying out the examination. An expert also has the right to ask the person who appointed the examination to clarify or explain the issues offered to him for resolution in the course of the examination. If the questions put before the expert are beyond the scope of or are not within his competence, he is obliged to refuse to respond to them. If it is impossible to answer the question (part of the question) or impossible to complete the entire examination, the forensic expert motivates his refusal and in writing informs the person who appointed the examination»;

2) clause 2.11 of the Instruction on conducting forensic examination, approved by the order of the MoH No. 6, which reads: «If, when answering questions posed before examination, there is a need for conducting forensic medical laboratory examinations, the forensic expert has the right to send all necessary materials for these studies. The order, organization and type of laboratory studies are determined by the rules of conducting certain types of examinations, approved by the order of the MoH No. 6 (z0257-95) as of 17 January 1995»;

3) clause 3.6 of the Instruction on conducting forensic examination, approved by the order of the MoH No. 6, which reads: «The conclusions in the Expert Opinion are scientifically grounded by the expert, formulated on the basis of the results of the performed examination. The results of forensic examination are made on the basis of factual data obtained in the course of expert examination and expert analysis of the circumstances of the case»;

4) clause 1.3 of the Rules for carrying out forensic medical examination (investigations) of corpses at the Bureau of Forensic Medical Examination, approved by the order of the MoH No. 6, which stipulates – «To achieve the objective, it is necessary to use knowledge in the field of forensic medicine and other medical specialties, special laboratory studies (histological, medical-forensic, toxicological, etc.) and, if necessary, to study medical documentation, materials of criminal and civil cases»;

5) clauses 2.1.6-2.1.9 of the Rules for conducting forensic medical examination (investigations) of corpses in the Bureau of Forensic Medical Examination, approved by the order of the MoH No. 6, which clarifies – «The study of post- mortem changes is carried out sequentially, from the determination of the cooling of the corpse by touch in covered by clothes and open parts of the body. Measurement of body temperature in the axillary cavities and in the rectum is carried out twice with an hourly break. It is necessary to identify the presence and degree of rigor mortis in the muscles of the face, neck, upper and lower extremities. The presence of livor mortis, its localization, character, color, peculiarities of distribution, presence of discoloration areas, which were formed from the pressure of details of clothes, objects, should be registered. The study should also involve determination of the nature of livor mortis change by pressing by a finger or plunger dynamometer with a force of 2 kg / cm² for three times followed by an indication of initial color restoration time. Signs of post-mortem drying are indicated when describing individual parts of the body. In the presence of late changes it is necessary to describe their signs, degree and prevalence. The presence and localization of the corpse flora and fauna should be determined and, if necessary, their samples should be selected for botanical and entomological research. It is necessary to use the recommended instrumental and laboratory methods for determining the time of death in the prescribed manner»;

6) part 1 clause 2.2.1 of the Rules for carrying out forensic medical examination (investigations) of corpses in the Bureau of Forensic Medical Examination, approved by the order of the MoH No. 6, which provides – «The information contained in this part of the Rules includes the necessary optimally-minimum set of measures (*quality standard*), which are mandatory during the examination of corpses. Deviation from the standard in the direction of reduction is impermissible».

Conclusions. The assessment of archival forensic examination acts on determining the prescription of death revealed the existence of problematic issues in practical implementation of this procedure: incomplete performance of standards (unjustified reduction in the volume and quality of carrying out proper procedures for PD determination), a narrow spectrum of methods, the use of outdated methods, a significant interval of error, formal statement of conclusions, insufficient substantiation of answers, isolated cases of creative solution of the question. We propose to work out and introduce into forensic practice a new progressive methodical complex for solving the problem of prescription of death

due to investigation of various types of human muscle tissue in the early post-mortem period.

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АНАЛІЗ АРХІВНИХ СУДОВО-МЕДИЧНИХ ЕКСПЕРТИЗ ЩОДО ВИЗНАЧЕННЯ ДАВНОСТІ НАСТАННЯ СМЕРТІ

©Коновал Н.С.

Резюме. Статтю присвячено актуальному питанню судово-медичної експертизи – визначення давності настання смерті. Практична і наукова актуальність питання підтверджується чинними нормативно-правовими документами. Розглянуто сучасні методи вирішення питання. Виокремлено перспективні способи визначення давності настання смерті. Для подальшого вивчення проблеми розроблено оригінальну дослідницьку картку, за допомогою якої проаналізовано 3413 судово-медичних експертиз трупів з метою виявлення проблемних локацій питання давності настання смерті та запропонування шляхів оптимізації роботи судових медиків у зазначеному напрямку та вдосконалення подальших наукових досліджень

Ключові слова: давність смерті, судово-медична експертиза, архів, комплекс методів.

АНАЛИЗ АРХИВНЫХ СУДЕБНО-МЕДИЦИНСКИХ ЭКСПЕРТИЗ ДЛЯ ОПРЕДЕЛЕНИЯ ДАВНОСТИ НАСТУПЛЕНИЯ СМЕРТИ

Коновал Н.С.

Резюме. Статья посвящена актуальному вопросу судебно-медицинской экспертизы – определению давности наступления смерти. Практическая и научная актуальность вопроса подтверждается действующими нормативно-правовыми документами. Рассмотрены современные методы решения вопроса. Выделены перспективные способы определения давности

наступления смерти. Для дальнейшего изучения проблемы разработано оригинальную исследовательскую карточку, с помощью которой проанализировано 3413 судебно-медицинских экспертиз трупов с целью выявления проблемных локаций вопроса давности наступления смерти и предложения путей оптимизации работы судебных медиков в этом направлении и совершенствования дальнейших научных исследований.

Ключевые слова: давность смерти, судебно-медицинская экспертиза, архив, комплекс методов.

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ЭКСПЕРТНАЯ ОЦЕНКА ФУНКЦИИ НИЖНИХ КОНЕЧНОСТЕЙ ПРИ ИСХОДАХ ПЕРЕЛОМОВ ГОЛЕНИ

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Резюме. Оценка степени утраты стойкой трудоспособности при исходах механической травмы нижних конечностей требует усовершенствования. Цель исследования - оценить функцию нижних конечностей у больных с исходами переломов голени с использованием метода стадиографии. Материал исследования - протоколы обследования 30 больных со сросшимися переломами костей голени и остаточными деформациями большеберцовой кости, у которых по итогам первичной экспертной оценки не была установлена степень тяжести телесных повреждений в связи с развитием осложнений в послеоперационном периоде. Методы исследования - клинический, рентгенологический, биомеханический, статистический. По результатам исследований установлены в отдаленные сроки после травмы изменения мягких тканей и нерезко выраженные контрактуры смежных суставов, а также значимое ($p < 0,05$) снижение опороспособности поврежденной нижней конечности.

Ключевые слова: исходы переломов костей голени, функциональная оценка, стадиография.

ВВЕДЕНИЕ. Судебно-медицинская оценка степени тяжести телесных повреждений при механической травме нижних конечностей, как правило, не вызывает затруднений при обычном течении посттравматического периода. Однако, развитие осложнений (замедленная консолидация перелома, остаточное смещение костных фрагментов, нестабильность металлической конструкции, развитие рефлекторной симпатической дистрофии конечностей и др.) может приводить к сложно прогнозируемым исходам таких переломов [1-3]. В этих случаях экспертная оценка тяжести вреда здоровью нередко переносится на неопределенно долгое время до получения результата травмы и установления степени стойкой утраты трудоспособности.

В настоящее время величина стойкой утраты общей трудоспособности при судебно-медицинской экспертизе потерпевших со сросшимися переломами бедренной кости и костей голени устанавливается на основе Таблиц, приложенных к приказу МОЗ Украины от 22.11.95 N 212 и учитывающих лишь данные гониометрии крупных суставов нижних конечностей. Однако на функцию опоры и движения, свойственную нижним конечностям, могут также оказывать влияние локализация и характер не устраненного смещения фрагментов диафиза длинных трубчатых костей, травматические дефекты мышц и нейропатии корешков спинномозговых нервов, иннервирующих сегменты нижних конечностей.

За прошедшее время изменились структура травматизма и характер повреждений нижних конечностей [4,5], существенно расширились возможности объективизации характера повреждений за счет появления новых технологий визуализации костной ткани и мягкотканых структур. Все более широко применяются методики обследования, позволяющие оценить функциональное состояние опорно-двигательной системы. Одной из них является стадиография. Наиболее информативные параметры стадиографии - качательные движения тела при двухопорном и особенно одноопорном стоянии (скорость, амплитуда, частота и площадь качания тела, а также экскурсия центра давления стоп на стадиографическую платформу) позволяют косвенно оценить опороспособность нижних конечностей и распределение гравитационных нагрузок на сегменты последних при стоянии [6].

В этой связи можно утверждать, что существующая оценка величины стойкой утраты общей трудоспособности не имеет научно обоснованного метода. Необходима разработка новых критериев диагностики и прогнозирования исходов механических травм нижних конечностей. Это позволит объективизировать доказательную базу, сократить сроки судебно-медицинской экспертизы и будет способствовать принципу неотвратимости уголовного процесса.

Цель исследования - оценить функцию нижних конечностей у больных с исходами переломов голени с использованием метода стадиографии.

Материал и методы. Материал исследования - протоколы клиничко-рентгенологического обследования 30 больных со сросшимися закрытыми переломами костей голени и остаточными деформациями большеберцовой кости, у которых по итогам первичной экспертной оценки не была установлена степень тяжести телесных повреждений в связи с развитием осложнений в послеоперационном периоде. Все больные наблюдались в ГУ «Институт патологии позвоночника и суставов им. проф. М.И.Ситенко НАМН Украины» в 2016-2018 г.г. Методы исследования - ортопедический (измерение длины и окружности мягких тканей, а также силы мышц обеих