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УНС по съдебна медицина и деонтология

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Началник на отделение по Съдебна медицина при МБАЛ „Д-р Тота Венкова" АД – гр. Габрово

Приложение на *Diptera* при съдебно-ентомологично определяне давността на смъртта в България

дисертационен труд за присъждане на научна и образователна степен «*доктор*»

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Варна, 2012

10. Summary

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Use of *Diptera* in forensic-entomological determining the time since death in Bulgaria

PhD thesis, presented at Medical University of Varna, Varna, Bulgaria

Supervisor:
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ABSTRACT

Forensic entomology has become relatively common in criminal investigations all over the world, but gaps in knowledge of local dipteran taxonomy and ecology have become apparent. The use of flies in forensic entomology in postmortem interval estimations is hindered by lack

of information of local species in Bulgaria. A basic distribution data for the most indicator species of insects are required. It is apparent that the seasonality and species assemblage vary in different geographical areas. For accurate postmortem interval estimations using flies, the most important information is the species identity of the immature flies found upon a corpse and their temperature-biased developmental times.

The major goals of this study are: 1) to determine and to identify the most indicator species of flies of forensic interest, associated with a pig carrion (as a model of human cadaver in the region of Gabrovo, Bulgaria, for each season of the year and 2) to collect data on temperature dependent development and to calculate the times of development of the key species of flies growing at different temperatures during the four seasons for the later use in the determination of the postmortem interval and 3) to make simple and easy for use field protocols for the collection of entomological evidence at crimescene.

Seasonal carrion decomposition studies were conducted in the suburban area of Gabrovo, Bulgaria. In 2007 the first field experiments started, using a piglet corpses for successional studies on insect colonisation. There were performed 4 studies - a spring, summer, autumn-winter and a summer experiment again (2008). Domestic pig carcasses (N=4) were placed in the study site. Carcasses were monitored during the decay process to document the temporal variation in decay patterns and the composition of the associated carrion fly communities, together with the temperatures of their development from immature stages to adult flies. The insects were collected and are in process of full identification. Forensically important species of flies (*Calliphora vicina, Calliphora vomitoria, Lucilia sericata, Lucilia caesar* и

Chrysomia albiceps) were determined for the geographical region. Their temperature-dependent times of development were calculated. A research on their specific ecological data and seasonal patterns for the region reported. Interesting new facts about the survival of the fly maggots (*Calliphora vomitoria* and *Calliphora vicina*) during winter under-zero temperatures were discovered meanwhile. Field protocols for the collection and processing of entomologic specimens from the crimscene were made, according the EAFE standards.

This work is the first replicated decomposition study in in Bulgaria and contributes to a development of a national database in forensic entomology. The first cases (a few of them presented) involving the use of insects were solved and the corresponding to experimental data results gave hopes to the future of the discipline and to lay down its statute at national level.

It is important to introduce the basic knowledge of methods and applications of the science among all professionals involved in a death investigation. Only the good collaboration and a clear procedure can lead to a full understanding of all the evidence recorded at the crime scene and at the autopsy.

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ИЗСЛЕДВАНЕ НА КОЛОНИЗАЦИЯ ОТ НАСЕКОМИ ВЪРХУ СВИНСКИ ТРУП КАТО СЪДЕБНОМЕДИЦИНСКИ КРИТЕРИИ ЗА ДАВНОСТТА НА СМЪРТТА (ПЪРВО СЪОБЩЕНИЕ)

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AN INITIAL STUDY OF A COLONIZATION OF A PIG CARRION BY INSECTS AS FORENSIC INDICATORS FOR A TIME SINCE DEATH

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Abstract: Forensic entomology plays an important role as an investigative procedure for interpreting information concerning a death, using insects to provide data not available by using the normal methods of forensic pathology, mainly for the determination of postmortem interval (PMI). An initial succession study started in the suburban area of Gabrovo, Bulgaria, using pig carrion as model representing human body. Methodology and first results are presented. There is a lot of work to do to develop a high level of competency in the field of forensic entomology for the region and to introduce the basic knowledge of methods and applications of the science.
Key words: forensic entomology, succession, postmortem interval, initial study

УВОД

Времето на настъпване на смъртта е много важно при фокусиране на разследването в определена времева рамка, характеризираща интервала преди смъртта и може да бъде ценен фактор за идентифициране на жертвата [2]. Насекомите често са първите свидетели на смъртта, като пристигат в предсказуема последователност. Тази последователност е в зависимост от широк кръг от резки и комплексни химични, биологични и физични промени по време на разложението на трупа от прясно състояние до скелетирането му. Всеки стадий на декомпозицията (разложението) привлича различни видове членестоноги. Когато е известна последователността на колонизиращите насекоми, анализът на членестоногата фауна по трупа може да се използва за определяне на изминалото време от смъртта.

Съдебномедицинската ентомология е приета в съда по целия свят и е била използвана при разследване на убийства от много години, както в Европа, така и в Северна Америка, а през последните години и в други държави, където тепърва навлиза и се развива [2, 3, 5]. Въпреки че през първите часове след смъртта съдебните лекари могат да осигурят мотивирано определяне на постмортална интервал, базирайки се на медицински параметри и на данни от местопроизшествието, тези методи стават все по-малко прецизни с изминаване на времето [4, 7]. Факт е, че 72 часа след настъпване на смъртта, ентомологичните доказателства обикновено са най-точният и често единствен метод за определяне на давността на смъртта [6]. В резюме, често липсват научни, съдебно значими методи на определяне давността на смъртта, с изключение на коректното разбиране (събиране) и анализ на ентомологичните доказателства.

ЦЕЛ

Основна цел на изследването е да се проучи ентомофауната на труп от домашна бяла свиня (*Sus scrofa*), периодът на активност на членестоногите през различните стадии на разложението, за да се определят най-показателните и значими от съдебномедицинска гледна точка видове насекоми, за всеки сезон и за географския регион, както и да се изготви референтна колекция от насекоми за този регион, с цел използване при последващи проучвания.

МЕТОДОЛОГИЯ

За настоящото изследване са планирани 4 последователни експеримента, по един за всеки годишен сезон. Това е свързано с възможните разлики във видовото присъствие според промените в температурата и сезонното развитие на насекомите. Първият (пролетен) експеримент се проведе с начална дата 27 април 2007 г. и продължи 70 дни. Останките се наблюдават периодично и

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Traumatic brain injury and autophagy: a pilot study about the immunohistochemical expression of LC3B, Beclin 1, p62, and LAMP2A in human autoptic samples

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Introduction: Autophagy is a cellular stress response that has been shown in the literature to be active in cerebral cells after a traumatic brain injury (TBI). The aim of this study is to investigate the potential use of four proteins involved in autophagy (LC3B, Beclin 1, p62, and LAMP2A), as a forensic diagnostic marker for TBI.

Methods: We analyzed histological samples obtained from the frontal lobe of 10 subjects who died within 1 h of a TBI (Group A), 13 who died between 1 h and 32 days post-TBI (Group B), and a control group of 10 subjects who died without head trauma (Group C). Immunohistochemical (IHC) staining using anti-LC3B, anti-Beclin 1, anti-p62 and anti-LAMP2A antibodies was performed.

Results and discussion: The results show that LC3B staining was the only one that show a statistically significant difference between groups. In particular, the percentage of neurons displaying an autophagic pattern was calculated from six random acquisitions per subject, and the results were compared across groups using one way ANOVA. Significant differences were observed between Groups A and B, and between Groups B and C, with p-values of 0.0055 and 0.0035, respectively. While the difference between Groups A and C was not statistically significant (p-value of 0.9845). These findings suggest that LC3B may serve as a useful diagnostic marker for TBI in cases where death is not immediate and open the door for further research.

KEYWORDS

traumatic brain injury, autophagy, immunohistochemistry, forensic, LC3B, Beclin 1, p62, LAMP2A

1 Introduction

Autophagy is a cellular response to stress, that allows the controlled degradation of individual cellular organelles or, in extreme cases, the entire cell. This process encompasses three distinct pathways: macroautophagy, microautophagy, and chaperone-mediated autophagy (CMA) (Kobayashi, 2015). In macroautophagy, double-membrane vesicles, known

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REVIEW

The current state of forensic imaging – post mortem imaging

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Abstract
Over the last few decades, forensic imaging has become an essential part of current forensic practice. The aim of this 4-part review is to provide a comprehensive overview of forensic imaging over the first 25 years of this century. After a brief historic review, this first part details the advantages and limitations of post-mortem imaging for the indications most frequently encountered in daily practice.

Introduction

Of all medical advances in recent decades, imaging has revolutionized medical practices profoundly. For the first time, we could see inside bodies without having to open them. Imaging has enabled us to make definite diagnoses, improve our understanding of the pathophysiological mechanisms of disease, propose screening methods and improve the diagnosis and treatment of cancers. On the technical front, considerable progress has been made since the first X-ray of the hand of Berta Roentgen. These advances include the invention of computed tomography (CT), magnetic resonance imaging (MRI) and ultrasound (US), the use of radiology to develop new treatment modalities with interventional imaging or digital imaging with picture archiving and communication systems. But beneath these technologies, imaging has profoundly changed our approach to the living or dead body. In forensic medicine, this has led to questioning the need to perform autopsies, accentuated by societal changes, that show that families and healthcare professionals are less and less inclined to this practice [1, 2]. The transition to the year 2000 was accompanied by the appearance of the term 'virtual autopsy', the scope and practical implications of which have since been clarified and qualified [3–5].

Depending on the country in which the forensic doctor works, he or she may perform forensic autopsies exclusively, or also be involved in clinical forensic medicine. This is also a part of the forensic imaging. This implies large possibilities of medicolegal diagnostics that can be included in forensic reports.

The word 'autopsy' is of ancient Greek origin and is a combination of 'autos' (self) and 'opsomei' (to see). It can be translated as "to see oneself" [6, 7]. Medico-legal autopsy has many objectives: to reconstruct the sequence of events and circumstances that preceded and led to death, including pre-mortem diseases, to determine the cause of death, its legal classification (homicide, suicide, accident or natural death), to establish the time of death and to identify the deceased [7]. In general, forensic imaging does not replace forensic autopsy and functions as a complementary tool for the forensic doctor or the forensic pathologist, even if some ideas of imaging as a "triage" tool have been described.

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REVIEW

The current state of forensic imaging– clinical forensic imaging

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Abstract
Clinical forensic imaging could be defined as the use of imaging first realised for medical care as evidence for a judicial purpose. It requires both forensic experts and clinical radiologists to have a good understanding of imaging modalities and indications and a solid knowledge of the correct terminology. This second part of the review describes the main situations in which imaging may be used for forensic purposes, i.e. blunt trauma, penetrating injuries, asphyxia, physical abuse and neglect.

Keywords Forensic imaging · Forensic science · Computed tomography · MRI

Introduction

Every day, emergency departments deal with injured patients who are involved in traumatic situations that require a two-pronged approach: medical and medico-legal. Recommendations and criteria for medicolegal imaging continue to evolve with new epidemiological studies and technological advancements [1, 2]. The selection and combination of imaging modalities requested are best discussed with radiologists while the quality of images and radiation protection depend on the experience and skills of radiology technicians. Yet, formal forensic radiology education and training still lack, particularly in the recognition of forensically relevant radiological signs, interpretation and documentation. Old fractures or minor injuries that can make a difference between "allegation" and "evidence" may be considered insignificant and go unreported by the unsuspecting radiologist, thus negatively impact civil or criminal litigation outcomes. A retrospective study found discrepancies between original radiological reports and expert reports in 18% patients presenting after strangulation and 62% of injured patients [3]. Indeed, clinical radiologists were more focused on reporting medically significant injuries but forensic radiologists tended to include medically insignificant injuries that could be significant in the medicolegal context, such as soft tissue hematomas. Misdiagnosis and missed diagnosis that can lead to radiology malpractice lawsuits are often caused by communication breakdown between radiologists and requesting physicians. The lack clinical information provided upon imaging requests, especially at times of uncertainty [4], also limits radiologists' roles in early detection of abuse and other intentional injuries.

Implementation and adherence to updated, accredited imaging protocols and guidelines ensure uneventful performance and safe triaging of radiological procedures, production of high-quality images admissible as court evidence

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REVIEW

The current state of forensic imaging – recommended radiological tools and international guidelines

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Abstract
The last few decades have seen the emergence of forensic imaging, both clinical and post-mortem. Year after year, the scientific community has refined the radiological tools that can be used for post-mortem and clinical forensic purposes. As a result, scientific societies have published recommendations that are essential for the daily work of forensic imaging. This third part of the review of the current state of forensic imaging describes these recommended radiological tools and also presents an overview of the various international guidelines dealing with post mortem imaging that can be found in the literature or that have been written by scientific societies.

Keywords Forensic imaging · Forensic science · Postmortem computed tomography · Recommendations

Introduction

Forensic imaging includes all imaging techniques that can be related to forensic science. Of course, classical radiological tools can be used in forensic radiology: radiography (computed radiography (CR) and digital radiography (DR)), multislice or multidetector computed tomography (MSCT or MDCT), and magnetic resonance imaging (MRI) [1–4]. More specialised tools such as micro-CT, micro-MRI and MR spectroscopy can also be used [5]. New techniques now allow contrast agents to be injected into cadavers, producing high quality images [6]. This multimodality is illustrated in Fig. 1. The forensic pathologist or radiologist performing forensic imaging must be aware of the advantages and limitations of these radiological tools. Interestingly, in the jungle or void of possible recommendations in post-mortem imaging, some scientific societies have written recommendations on the indications of PMCT in a thanatological context. These recommendations are helpful for any radiologist or forensic pathologist who wants to implement post-mortem imaging in the workflow of a medico-legal cadaver in the forensic pathway, from imaging to external examination and autopsy.

The aim of this third part of the review of the current state of forensic imaging is to describe the different imaging modalities and their application in post-mortem imaging, as well as the different guidelines published by the scientific societies of forensic imaging.

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REVIEW

The current state of forensic imaging – perspectives

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Abstract
This fourth part of the review of the current state of forensic imaging describes the future potential influence of artificial intelligence in forensic imaging. In addition to this important point, training in forensic imaging is discussed in detail, as are the documentation possibilities offered by non-conventional imaging tools such as photography, photogrammetry, 3D surface scanning and 3D print casts.

Keywords Forensic imaging · Forensic science · Photogrammetry · 3D surface scanning · 3D printing

Introduction

Forensic imaging is growing worldwide. As it follows the trend of using and adapting classical radiological tools, the introduction of artificial intelligence seems obvious. This article presents different possibilities of deep learning and machine learning with potential applications in forensic and anthropological imaging. In this way, the creation of international databases dealing with forensic examinations seems crucial. These questions about database creation dovetail perfectly with another important issue for the future of forensic imaging: education. Education is obviously the key to the future, the diffusion and the growth of forensic imaging. This article will also explore the range of imaging tools available for creating images that are not secondary to X-rays, magnetic resonance, or ultrasound, including photography, photogrammetry, 3D surface scanning, and 3D printing of casts. As illustrated in Fig. 1, these perspectives are interconnected with contemporary issues in the domains of post mortem and clinical forensic imaging.

This fourth and final section of the review of the current state of forensic imaging outlines the various pathways that could be pursued by forensic radiologists and researchers in the coming years.

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Most promising perspectives in forensic imaging

Imaging databases

The widespread use of post-mortem imaging has generated a large volume of imaging data. While each centre can organize a database locally, there is a need to create and coordinate large-scale post-mortem imaging databases. This is the only way we will be able to pursue preliminary works on particularly rare cases or paediatric cases, by increasing the number of cases for research questions, homogenizing data

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DNA EXAMINATION OF MIXED TRACES ON PHYSICAL EVIDENCE, IN KINSHIP AND RECOGNITION DETERMINATION BY YFILER™ PLUS PCR AMPLIFICATION KIT FOR Y CHROMOSOME IDENTIFICATION

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Abstract: In expert practice, the Y chromosome analysis is an excellent method for detecting the presence of male DNA in mixed traces as well as for identifying males, or for establishing kinship. The goals of the research were to identify a minimal male component in mixed biological samples, as well as to identify unknown deceased men or to determine genealogical kinship. In the course of the research for identifying males with unconfirmed identity, with the help of Y chromosome markers, the rare allel 20.2 was detected at locus DYS627, embedded in the Yfiler™ Plus PCR Amplification Kit.

Keywords: material evidence, mixed biological traces, DNA identification, Y chromosome, rare allels.

INTRODUCTION

The Y-chromosome analysis is an extremely successful method for detecting the presence of male DNA in mixed traces or excluding a subject as a male cell donor [1, 2]. Following numerous studies, the Working Group on Forensic Expertise on Sexual Assault (SAFER), established by the National Institute of Justice (USA), has published a paper recommending the consistent use of primary autosomal STRs analysis and a secondary Y-STRs test [3] as this approach has been developed by other researchers aswell [4-6].

Deposition and superimposition of biological material by the victim and the physical perpetrator of a crime are common findings in the process of examining biological traces on physical evidence. A case from Germany reported in 2015 proves the importance of Y-STR testing. A suspect had been detained following an unsuccessful robbery attempt that resulted in the murder of a woman in her apartment. On the noose that was used to strangle the woman, on the background of massive female saliva, scarce male epithelial material was found. Due to the well-known effect of preferential amplification in conventional autosomal analysis, the male autosomal profile was not established, but a Y-STR analysis generated a complete profile for 23 loci. The profile corresponded to the suspect who had already been arrested. This case strongly influences the process of drafting guidelines for the interpretation of Y-STRs in Germany [7-9].

It is in such cases that it is a real challenge to choose the most appropriate expert approach to delineate and determine the individual DNA characteristics and derive the offender's DNA profile. The options are related to the correct selection and use of the possibilities of the autosomal and sexual X-

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Review

Molecular Sex Differences and Clinical Gender Efficacy in Opioid Use Disorders: From Pain Management to Addiction

Monica Concato, Emiliana Giacomello, Ibrahim Al-Habash, Djordje Alempijevic, Yanko Georgiev Kolev, Maria Buffon, Davide Radaelli and Stefano D'Errico

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Review

Molecular Sex Differences and Clinical Gender Efficacy in Opioid Use Disorders: From Pain Management to Addiction

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Abstract: Opioids have been utilized for both medical and recreational purposes since their discovery. Primarily recognized for their analgesic properties, they are also associated with the development of tolerance and dependence, contributing to a significant public health concern worldwide. Sex differences in opioid use disorder reveal that while men historically exhibit higher rates of abuse, women may develop dependence more quickly and are more susceptible to the addictive nature of opioids. This narrative review explores sex differences in opioid response in both clinical and experimental models, focusing on opioid receptor mechanisms, pain modulation, and hormonal influences. Additionally, it discusses the complexities of opioid addiction and withdrawal, highlighting sex-specific responses and the role of opioid replacement therapies. Diverse experimental outcomes, together with observational data, underscore the need for further research into sex-specific opioid biological mechanisms in a wider context, including demographic, cultural, and health-related factors. A comprehensive understanding of these complexities holds the potential to enhance personalized opioid therapies.

Keywords: opioid; sex differences; addiction; personalized therapeutic approach

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1. Introduction

Since their discovery in the 1800s, opioid derivatives have been used for both medical and recreational purposes. Opioids, well-known for their role in analgesia, are also associated with adverse events [1], including the development of tolerance and dependence, which can lead to undesired consequences of both legal and illegal significance [2].

Although opioids are considered the strongest painkillers [1], their use disorder represents a major public health concern due to the rising adverse events, along with deaths from drug overdoses [3,4]. In fact, long-term opioid administration is prone to developing adverse effects, leading to tolerance and an increased risk of dependence and overdose [1].

According to the *European Drug Report 2024*, opioids were involved in an estimated 74% of fatal overdoses, with heroin being the third most reported drug in acute drug toxicity in European hospitals in 2022. While heroin remains the most frequently used illicit opioid in Europe, its dominance is waning. Other substances, such as opioid agonists often used for treatment, or new synthetic opioids, are becoming increasingly popular. Fentanyl derivatives such as carfentanil are also a growing concern, alongside potent benzimidazole opioids such as protonitazene, metonitazene, and isotonitazene, as well as compounds containing new benzodiazepines and tranquilizers [5].

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Original article ■

Comparative Investigations of the Incidence of Sexual Assault in Three Regions of the Republic of Bulgaria during 1997-2006

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SUMMARY

Sexual abuse is considered as a crime against the person all over the world. Despite the age of victims, it could trigger serious physical and psychological consequences, psychoactive substances and drug abuse, reproductive disorders, suicides and even death. The aim of retrospective investigation was to analyze the incidence of sexual assault in the regions of Varna (V), Silistra (S) and Gabrovo (G) in the period 1998-2006. The material used in the study involved the archive records of the Forensic Medicine Wards in the three studied regions. The comparative study employed inquiries and the documental interpretation method. The data of the investigations are filled in questionnaires in Microsoft Excel and compared. In conclusion, we could state that: 1. The female age group, most affected by sexual assault, was that of 14-17 years. 2. Most commonly, the sexual crimes are performed by persons familiar to the victims (50.10%). 3. Among men, the most affected age group was that under 14 years of age.

Key words: **sexual assault, rape, unwanted touching**

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PICturing coronary pathology postmortem: forensic cardiac imaging with Postmortem Infrared Coronary angiography of human heart *ex situ*

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ABSTRACT

The diagnostic assessment of sudden and unexpected cardiovascular deaths remains intricate in forensic medicine. Building upon the foundational technique introduced by P. Fais et al.(2018), we present modifications to the post-mortem infrared coronary angiography (PIC) tailored specifically for the assessment of human hearts. Refinements to PIC encompass the integration of a 3D-printed clamp for catheter stabilization and the procedural alteration of utilizing warm water injections, negating the need for additional cardiac cooling. An enhanced imaging modality is achieved using the FLIR Thermal Lepton 3.5 camera, embedded within the robust Cat S62 Pro mobile device, ensuring optimal resolution and suitability for an autopsy environment. The advanced PIC technique provides superior visualization of the coronary arteries, frequently correlating with subsequent autopsy and histological assessments. Notably, the method allows immediate continuation to the autopsy without compromising the cardiac structure. Nevertheless, certain anatomical variances, such as muscular bridging or pronounced pericardial fat, might reduce locally what appears to be an otherwise excellent specificity. The refined PIC method emerges as a pivotal diagnostic adjunct in forensic evaluations of sudden cardiovascular fatalities. Its ability to preserve cardiac integrity and facilitate uninterrupted autopsy progression underscores its potential utility. However, rigorous validation is imperative to ascertain its comprehensive applicability and inherent limitations.

Introduction

In forensic medicine, there is often a tendency to start with complex answers to simple questions. From a pragmatic view, these complex approaches require simplification. Frequently, the simplification of an answer to a given question is achieved through more intricate techniques or equipment, making it more expensive and often inaccessible for everyday forensic practice. Hence, for a method to impact routine practice, it is desirable for it to be both accessible and easily executable [1].

A significant portion of the cases encountered by a forensic doctor involves sudden and unexpected deaths of cardiac origin. Moreover, in many other cases, cardiovascular system pathology might play a role as a contributing factor to the cause of death. In practice, post-mortem diagnosis of cardiovascular diseases is most commonly performed during autopsy (macroscopic) and followed by histological examinations (microscopic) [2,3,4]. Well-equipped forensic centers offer the added, and arguably superior, option of post-mortem computed tomographic angiography or MRI, which allows for a very precise diagnosis of the cardiovascular system and its pathology [5–12]. However, not all facilities have this capability, or they might perform routine post-mortem CT without contrast (which is not applicable for detailed vascular system diagnostics), devoid of angiography, which is an expensive procedure. Thus, in most forensic units, reliance primarily rests upon autopsy-based diagnostics. In cases of ischemic heart disease, dissection of the coronary arteries is of paramount importance. The usual approach involves transversal cuts of the coronary arteries to visualise the lumen and any present occlusions or thrombi. When atherosclerotic plaques in the walls of the coronary arteries undergo calcification, cross-sections often become unfeasible, and longitudinal cuts are employed. This bears the risk of displacing an existing thrombus with the sharp tip of the scissors, resulting in failure to accurately localize and identify its origin. This situation underscores the need to seek methods for preliminary assessment of the coronary circulation's condition and identifying functional

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О ЖЕСТОКОМ ОБРАЩЕНИИ С ДЕТЬМИ В БОЛГАРИИ

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Аннотация. Сегодня весьма актуальна проблема насилия над детьми и подростками. Случаи агрессивного вербального и физического воздействия на детей и среди детей стали очень частыми. Понимание прав, проблем и потребностей детей способствует разработке эффективной политики и мер, направленных на улучшение положения детей в Болгарии. В статье описано правовое регулирование, проводимые мероприятия и службы, занимающиеся защитой детей в Болгарии. Представлены данные из разных источников, касающиеся жестокого обращения с детьми. Потенциал судебной медицины в политике государства по борьбе с жестоким обращением с детьми пока не реализован в полной мере. Актуальные приоритеты в Болгарии такие же, как и в соседних странах. Многие стороны жестокого обращения с детьми скрыты от соответствующих служб и общества, поскольку о большинстве таких случаев не сообщается или они не регистрируются. Причинами этого являются низкий уровень готовности общества осознать проблему и участвовать в предотвращении насилия среди детей, игнорирование прав ребенка на защиту и обязанности каждого гражданина информировать соответствующие органы о детях, находящихся в ситуации риска. Это касается не только Болгарии, но и всех стран Европы.

Ключевые слова: жестокое обращение с детьми, судебная медицина, законодательство, Болгария

THE CHILD ABUSE IN BULGARIA

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Abstract. The problem with violence among children and adolescents is very popular today. The reason is that the cases of aggressive verbal and physical acts on and among children have become very frequent. The better recognition of child rights, problems and needs will contribute to the elaboration of effective policies and practices for improvement of the state of children in Bulgaria. The legislation, procedures and authorities related to child protection in Bulgaria are described. Data collected from different sources concerning child abuse, are presented. The use of forensic medicine in prevention of child abuse is still not fully implemented in government politics. Actual priorities are common with other countries of the region. Many aspects of violence against children remain hidden for the specialized institutions and for the society, because in most cases these acts are not reported or registered. Reasons for this to happen are the lack of social sensitivity and engagement for prevention of violence against children, the ignorance of child's right to protection and of everyone's obligation to inform agencies for child protection about children at risk as well. This is not specific for Bulgaria only, but applies to all the European countries.

Keywords: child abuse, forensic medicine, legislation, Bulgaria

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The problem with violence among children and adolescents is very popular today. The reason is that the cases of aggressive verbal and physical acts on and among children have become very frequent. The better recognition of child rights, problems and needs will contribute to the elaboration of effective policies and practices for improvement of the state of children in Bulgaria.

The lack of consistent information about the number of children affected by maltreatment limits the ability of the public health community to respond to the problem in several ways. First, it limits ability to gauge the magnitude of child maltreatment in relation to other public health problems. Second, it limits ability to identify those groups at highest risk who might benefit from focused intervention or increased services. Finally, it limits ability to monitor changes in the incidence and prevalence of child maltreatment over time. In turn, this limits the ability to monitor the effectiveness of child maltreatment prevention and intervention activities [1].

Bulgaria functions as a parliamentary democracy within a unitary constitutional republic. A member of the European Union, NATO and the World Trade Organization, it has a high Human Development Index of 0.834, ranking 56th in the world in 2006.[2] Freedom House in 2008 listed Bulgaria as «free», giving it scores of 1 (highest) for political rights and 2 for civil liberties [3].

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Medical Errors and Negligence in Cases Versus Medical Professionals

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Introduction

The term "medical error" (medical malpractice) is a medical rather than a legal term in Bulgaria [1]. It has a different and broader content, leading to considerable practical difficulties. Recently, in society and in law it suggests that the term "medical error" is an aggregate concept, which denotes mostly cases of negligent crime of medical professionals [5]. More severe group are intentional offenses in relation to medical practice: criminal abortions illegal, non-providing medical assistance, the repeat of secret, issuing false medical documents, illegal treatment, violation of anti-epidemic rules and regulations for use of drugs or toxic substances.

According to Bulgarian criminal law, negligence is the mildest form of guilt after intention [3]. Crimes for professional negligence are sentenced when they resulted in death or injury – art. 123 and 134 of the Penal Code[1] [2]. Negligent guilt is negligence (neglect) or conceit, which include ignorance of the medical science.

[1] Article 123 (1) of the Penal Code: "Whoever causes another's death due to ignorance or negligent performance of work or other legally regulated activity, representing a source of increased danger shall be punished with imprisonment of up to 5 years. (2) Any person who negligently causes another's death through actions belonging to a profession or activity in the preceding paragraph, it shall not be entitled to exercise, be punished with imprisonment from 1 to 5 years. (3) If, in the preceding paragraphs offender was intoxicated or if it caused death of more than one person, the punishment is imprisonment from 3 to 8 years, and in especially serious cases - imprisonment from 5 to 15 years. (4) If the perpetrator after the act has done everything depending on him to rescue the victim, the punishment shall be: 1 and 2 – imprisonment of up to 3 years under par. 3 - imprisonment of up to five years, and in especially serious cases – imprisonment of up to 3 to 10 years); Art. 134 (1) of the Penal Code: Whoever causes another severe or medium bodily injury due to ignorance or due to negligent performance of work or other legally regulated activity, representing a source of increased danger shall be punished: 1. by imprisonment of up to 3 years for severe bodily harm and 2. with imprisonment of up to two years or probation for a medium bodily injury, (2) The same punishment shall be imposed on those who negligently cause another severe or medium bodily injury through the actions belonging to a profession or activity in the preceding paragraph that he is not entitled to exercise. (3) If, in the preceding paragraphs

Forensic & Legal Medicine in Bulgaria

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Abstract

Forensic medicine in Bulgaria is a well-developed and recognized medical specialty with a history dating back to the 19th century, evolving concurrently with European forensic medicine. The country has a robust network of forensic units, conducting forensic pathology, clinical forensic medicine, and specialized laboratory analyses, including DNA and toxicological examinations. Forensic medicine, taught to medical and dental students, is also available for law and police students. Embedded in Bulgarian legislation, it upholds human rights. Currently, about 65 forensic doctors are practicing, with some nearing retirement age, highlighting the need for better funding, motivation, and continued specialization in this essential field.

Graphical abstract

Introduction

Forensic medicine in Bulgaria not only mirrors the nation's history but also its role as part of Europe and the evolution of forensic medicine across the region. The shifting historical and political landscape invariably influences the organizational structure, societal importance, and educational approaches within this specialty. In an era marked by globalization and enhanced European integration, Bulgaria has experienced significant integration changes in the field of forensic medicine. This text highlights certain regional peculiarities of forensic medicine and offer a concise overview of its future development.

In Bulgarian, the term for forensic medicine, "съдебна медицина," directly translates to "medicine for the court." However, a more accurate translation would be "forensic medicine" or "legal medicine." This naming convention (which is viewed positively) pays homage to the scientific discipline's European roots and the historical significance of its terminology, reflecting the strong influence of Latin and Ancient Greek etymology in medical education and terminology within the country. Forensic medicine in Bulgaria (medicina legalis, forensis), is defined as "an encompassing multidisciplinary medical science dedicated to studying and addressing medico-biological questions that arise in the judiciary processes (including both pre-trial and trial proceedings) involved in the investigation and judicial examination of criminal and civil cases" (Radanov et al., 2006). Embodying a distinctly applied science, the application of forensic medicine theories, along with medico-biological insights and investigative methods, to legal issues, constitutes the essence of forensic expertise.

Short History of Forensic and Legal Medicine in Bulgaria

During the so-called first and second Bulgarian states (7th–14th centuries), data are lacking on forensic medical activities. Up until the Liberation of Bulgaria in 1878 from five centuries of Ottoman rule (14th–19th centuries), the country lacked specialized forensic medical services for the population (Radanov, 1999). Documents with forensic content found in the archives of Jewish

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Bridging the gap: Assessing death certification competency in Bulgarian healthcare education

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ABSTRACT

BACKGROUND: In Bulgaria, procedural protocols following a citizen's death are governed by an intricate network of normative documents. Despite the presumed alignment between international and national guidelines, practical experiences reveal shortcomings in the proficiency of healthcare providers, particularly in cases involving prior medical interventions or systemic vulnerabilities.

AIM: This study aimed to assess the readiness of final-year medical students and early-career physicians in navigating death certification intricacies, including their responses, documentation precision, and postmortem procedures for bereaved families, with implications for national health statistics.

MATERIALS AND METHODS: By employing a mixed-methods approach, this study distributed questionnaires to sixth-year medical students and practicing physicians, including those in emergency medicine centers and general practice. Data collection included paper-based and digital questionnaires, ensuring anonymity and ethical compliance. Statistical analysis, employing parametric (t-test) and nonparametric (Chi-square) tests, forms the basis for actionable recommendations and educational material development.

RESULTS: This study included 143 participants, of which 41% expressed apprehension about managing out-of-hospital deaths. Approximately 44% claimed familiarity with death certification regulations, with students displaying higher theoretical confidence but lacking practical knowledge. Remarkably, 74% of physicians never received formal training in death certification. Discrepancies in issuing death certificates, timing, and notification procedures were identified.

CONCLUSION: Findings reveal varying practices among physicians according to their specialties. Issues related to documentation, timing, and notification were prevalent. The study emphasizes the need for improved training, particularly for medical students. Emergency medicine doctors exhibited higher preparedness levels. Medical students and early-career physicians urgently require enhanced education in death certification preparedness. Incorporating these topics into medical curricula, offering specialized courses, and disseminating instructional materials can significantly enhance effectiveness. Future studies should assess the quality and accuracy of recorded causes of death, which affect healthcare statistics, public service, and legal procedures, underscoring the societal and administrative significance of death certification practices.

Keywords: diagnosis of death; death certification; out-of-hospital deaths; forensic medicine; procedures; medical education.

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ISFRI guidelines working group: best practice standards for non-contrast postmortem computed tomography (PMCT) of adults

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Introduction

The role of postmortem computed tomography (PMCT) is evolving in response to multiple factors such as global pathologist shortages, increased access to computed tomography (CT) scanners, and evidence-based literature support.

The International Society of Forensic Imaging (ISFRI) Guidelines Working Group provides practical guidelines and standards for the implementation of forensic imaging. The aim of this document is to provide recommendations for the best minimum standards of practice for non-contrast PMCT of adults. When appropriate, general standards for postmortem imaging are endorsed.

Each standard was reviewed by the Guidelines Working Group members and adopted after consensus at the Working Group meeting during the 2024 ISFRI annual meeting in Krakow, Poland. The standards outlined in this document provide a foundation for further detailed guidance on the specific recommended applications of non-contrast PMCT of adults, as per Standard 15.

Standard 1. Interpreting Postmortem Imaging

Important decisions can be made based on postmortem imaging interpretation. Physicians interpreting postmortem imaging should be appropriately trained and experienced.

Standard 2. Radiologic Pathologic Correlation

When available, radiologic pathologic correlation should be performed. In some offices, this may not be possible in every case. In high volume settings, a reasonable percentage of cases/findings should be audited with radiologic pathologic correlation. This procedure enhances continual practice improvement.

Standard 3. Comprehensive Investigation

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White paper by the international society of forensic imaging guidelines working group on non-contrast PMCT for decomposed remains

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Best practices

ABSTRACT

Overdose deaths, particularly from opioids and synthetic analogs, continue to rise globally. While some cases present with overt indicators, others lack external signs, complicating initial investigation. Postmortem computed tomography (PMCT) has emerged as a valuable adjunct in these cases, offering radiologic features that may suggest overdose and support triage, even in unsuspected deaths. Characteristic findings—such as cerebral edema, pulmonary edema, and urinary bladder distention—comprise the so-called "overdose triad," which demonstrates high specificity for overdose-related fatalities. PMCT also detects ancillary features including findings related to pill fragments, signs of body packing, and hypertensive intracerebral hemorrhage. In overdose investigations, PMCT's high negative predictive value helps exclude internal trauma and skeletal injuries, guiding case management and informing decisions on the necessity for full autopsy. While PMCT findings are not pathognomonic and may be absent in rapidly fatal intoxications, the technique offers considerable value, particularly when integrated with toxicological analysis and full autopsy. The International Society of Forensic Radiology and Imaging (ISFRI) supports the standardized use of PMCT in suspected overdose deaths as part of a comprehensive forensic approach.

Background

Decomposition of the human body is a complex phenomenon involving a cascade of chemical and physical events, including autolysis, putrefaction, and liquefaction. Numerous internal and external factors such as body size and weight, traumatic injuries, medical conditions, clothing/coverings, and environmental conditions (temperature and humidity) substantially influence the process. Different anatomical regions decompose at varying rates, leading to complete skeletonization, adipocere formation, or mummification under specific conditions. Forensic pathologists face significant challenges in examining remains due to tissue collapse and liquefaction, which complicates both the determination of the cause of death and the identification of unknown remains. PMCT provides comprehensive visualization of the entire body and serves as a valuable tool for medicolegal investigations. It is particularly useful for addressing forensically relevant questions during the postmortem examination of decomposed remains [1–4].

Strengths

PMCT offers detailed imaging evaluation for determining the cause of death. Although the sequence of decomposition findings on PMCT can vary, the distribution of gas typically follows a characteristic pattern, first accumulating in the right heart and portal veins of the liver [1,3,5–7]. Gas in an atypical distribution may indicate pathology or be related to resuscitation efforts [8,9].

PMCT accurately identifies and documents gas within the body, serving as a valuable tool in forensic investigations [1,3,5]. This capability can be useful in decomposed remains for identifying potential injuries and other pathology related to the cause of death. Depending on

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Short communication

White paper by the international society of forensic imaging guidelines working group on non-contrast PMCT for SCUBA-related fatalities

Chris O'Donnell [a,*], Jamie Elifritz [b,c,d], Laura Filograna [e], ISFRI Guidelines Working Group

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ARTICLE INFO

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Background

SCUBA (Self-Contained Underwater Breathing Apparatus) death investigation is a complex process due to the multitude of potential causes including natural disease, trauma, and SCUBA specific mechanisms. Postmortem CT (PMCT) is a key component of that investigation process, particularly in detection of the SCUBA-specific complication of arterial gas embolism (AGE), consequent to the inhalation of compressed gases.

The majority (52–86 %) of SCUBA deaths are not due to AGE, rather drowning as a terminal event resulting from many factors including inability to swim, fatigue, panic, inadequate training, decreased level of consciousness due to intoxication, nitrogen narcosis, seizures e.g. oxygen toxicity seizure or hypercapnia, natural disease such as acute myocardial infarct, asthma, diabetes, epilepsy; trauma, entrapment in caves or wrecks, physical disability or equipment malfunction.

Pulmonary barotrauma and arterial gas embolism (PBT/AGE) is seen in only 13–24 % fatalities. A history of the diver coming to the surface rapidly and losing consciousness is characteristic of this condition.

Strengths

PMCT is the primary investigation modality for non-invasive demonstration of vascular gas and its distribution, often not readily detected at autopsy. In the past, radiographs have been used but are less reliable. In AGE, this gas can be readily detected on CT throughout the arterial tree often with dramatic effect, reaching the smallest peripheral arteries throughout the body including the brain. Pathophysiology is related to Boyle's law stating that at a constant temperature, the volume of a gas is inversely proportional to ambient pressure. On rapid ascent (reducing ambient pressure), gas within the lungs expands rapidly rupturing alveolar sacs, enters adjacent pulmonary venules leading to massive gas influx into the left side of the circulation displacing blood, producing a so-called gas angiogram on PMCT. As this effect occurs on ascent from depth, AGE is detectable almost immediately.

In addition, factors that may have contributed to rapid ascent from depth and/or other pulmonary barotrauma effects leading to death may be evident on PMCT, including pneumothorax, pneumomediastinum, haemorrhage or other trauma associated injuries.

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ISFRI guidelines working group: best practice standards for non-contrast postmortem computed tomography (PMCT) of gunshot wound deaths

Jamie Elifritz [a,b,c,*], Fabrice Dedouit [d], Fox Marttinen [e], Laura Filograna [f], ISFRI Guidelines Working Group

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Background

The first documented forensic cases of gunshot wounds occurred within the first year of Roentgen's discovery of the x-ray [1]. PMCT offers many advantages over two-dimensional imaging and conventional autopsy. Multiple retrospective large-scale analytical reviews have been published regarding the application of PMCT in gunshot deaths [2–6]. Numerous publications suggest the standard use of PMCT for gunshot injuries [7–15]. Some authors propose PMCT, and external examination in lieu of autopsy in select situations, particularly involving ballistic injuries to the head [7,9,16–18].

Strengths

Since PMCT effectively detects radiodense metallic foreign bodies, it can identify bullets even in cases where gunshot wounds are not initially suspected [5,19–21]. This is most important for severely disfigured remains. Source images and three-dimensional reconstructions serve as documentation, can be utilized for scene reenactment, and can be shown in court as demonstrative aids. Once detected, PMCT allows for precise localization of metallic fragments for retrieval.

As in blunt force trauma, PMCT is superior to autopsy for detecting skeletal injuries, especially in regions of the body that are difficult or not routinely dissected, like the pelvis and cervical spine [2,15]. PMCT serves as a valuable adjunct to autopsy, guiding selective and focused dissection, especially for the retrieval of foreign bodies such as projectiles [22]. Additionally, skeletal injuries provide a roadmap for injury trajectory, particularly in the application of cases of single gunshot wounds to the head [18].

Because osseous fragments are most frequently displaced along the wound track, skeletal injuries provide critical insights into injury trajectory, often exhibiting a characteristic pattern of bone beveling along

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Short communication

ISFRI guidelines working group: best practice standards for non-contrast postmortem computed tomography (PMCT) of blunt force trauma

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ARTICLE INFO

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Best practices

Background

Postmortem computed tomography (PMCT) is a highly effective tool for detecting and documenting injuries resulting from blunt force trauma (BFT), with increased sensitivity for identification of skeletal injuries and pathologic gas collections compared to conventional autopsy [1–30]. PMCT identifies and documents injury patterns that aid in reconstructing BFT mechanisms. Hemorrhagic collections visible on PMCT can provide critical insight into the cause of death, even when the precise bleeding source cannot be definitively identified. The body remains unaltered (with evidentiary, cultural, and religious ramifications) and the images can be stored indefinitely, available for expert consultation. PMCT is useful for determining the cause of death (COD) in cases of BFT [14,17,19].

Strengths

PMCT identifies injuries that otherwise may have gone undetected at conventional autopsy, especially regions that are not conventionally dissected, e.g. fractures of the spine and pelvis [17,19,22,24–27,30]. Facial, cranial, atlantooccipital, and cervical spine injuries are especially significant, as they can serve as markers of associated severe neurological or vascular trauma. The strongest support for PMCT in BFT is evident in research studies utilizing standardized injury classification systems, such as the Abbreviated Injury Scale (AIS) and Injury Severity Scale (ISS), enhancing injury quantification and facilitating a direct comparison between PMCT and autopsy findings [14,17,19,24,27,28,31,32].

Certain fracture patterns are associated with specific trauma mechanisms [33]. For example, a flexion teardrop fracture of the cervical spine results from severe axial flexion, often with ligamentous injury, spinal instability, and spinal cord damage [34,35]. Similarly, a Messerer fracture, commonly seen in pedestrian-vehicle collisions, occurs in lower extremity long bones due to lateral external force, creating a wedge-shaped fracture (classically) pointing toward the impact direction [36,37].

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ISFRI Education Working Group: competencies and training requirements for reporting and interpretation of adult forensic post-mortem imaging

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ARTICLE INFO

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Introduction

Cross-sectional imaging in the form of post-mortem computed tomography (PMCT) is the most extensively studied and widely utilized modality for forensic or medico-legal death investigations, whereas post-mortem magnetic resonance imaging (PMMR) is less commonly adopted.

In 2023 Rutty proposed a set of guidelines for the workflow processes associated with PMCT reporting. "Rutty's Rules" highlighted the necessity for those undertaking post-mortem image interpretation and reporting to be appropriately trained [1].

Arising from the work of the Forensic Imaging standards group of the Netherlands Register Gerechtelijk Deskundigen (NRGD) 2024 [2], this International Society of Forensic Radiology and Imaging (ISFRI) positional statement expands on Rule 2 of Rutty's Rules by proposing minimal standards to be obtained by those reading, reporting, and interpreting adult PMCT and PMMR

Forensic radiology or forensic imaging?

In line with current clinical practice where the term "Medical Imaging" is replacing the traditional name for historical "Departments of Radiology", we propose that where possible to align services for the dead with those of the living, the terms "*Forensic Imaging*" or "*Post-mortem Imaging*" are recommended for the medicolegal or forensic use of various imaging techniques, in place of "*Forensic Radiology*" or other terms.

This is intended to convey to non-medical service users such as the police and judiciary that post-mortem imaging, reporting and interpretation is not the sole remit of a radiologist. Nevertheless, it is recognised

Additional members of the ISFRI Education Working Group at the time of production Raksachai Nathongchai, Aditya Pratap Singh Chauhan, Jonathan Ford, Bernadette de Bakker, Joey Hardy, Masahiro Yoshida, Kazuya Tashiro, Marise Heyns, Shogo Shinbashi, Fabio Cavalli, Denise Elliott, Maarja Moelder, Nayef Aljanaahi, Maria Conte, Rasmus Möllby, Hideyuki Nushida, Numfon Tweeatsani, Mohamed Nasreddine, Sabinne Langhart, Janette Verster, Pipatpong Pechprapan, Seon Jung Jang

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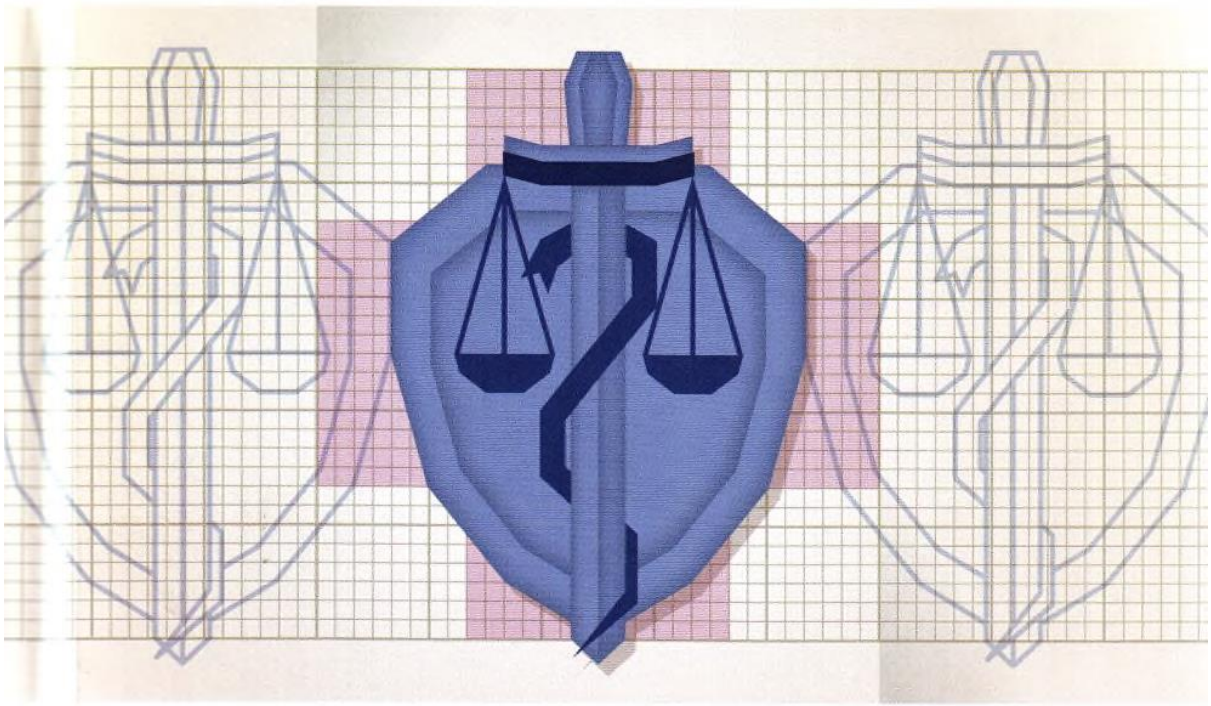

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Национальное руководство по судебной медицине содержит современную информацию, основанную на последних публикациях и результатах диссертационных исследований. В руководстве отражены особенности проведения экспертиз в связи с изменениями и дополнениями, внесенными в законодательство.

Материал изложен с учетом практической деятельности судебно-медицинского эксперта: представлены новейшие научные данные по патогенезу и диагностике действия повреждающих факторов на человеческий организм, приведены вопросы, ставящиеся на разрешение эксперта. Детальный анализ результатов судебно-медицинского исследования трупа и данных лабораторных исследований при различных причинах смерти сочетается с решением конкретных ситуационных задач, в которых отражены принципы построения судебно-медицинского диагноза и выводов эксперта. Подробно описана судебно-медицинская экспертиза вещественных доказательств.

Издание предназначено для врачей судебно-медицинских экспертов, врачей-интернов и клинических ординаторов, обучающихся по специальности «Судебная медицина», студентов медицинских и юридических вузов, а также будет полезно юристам.

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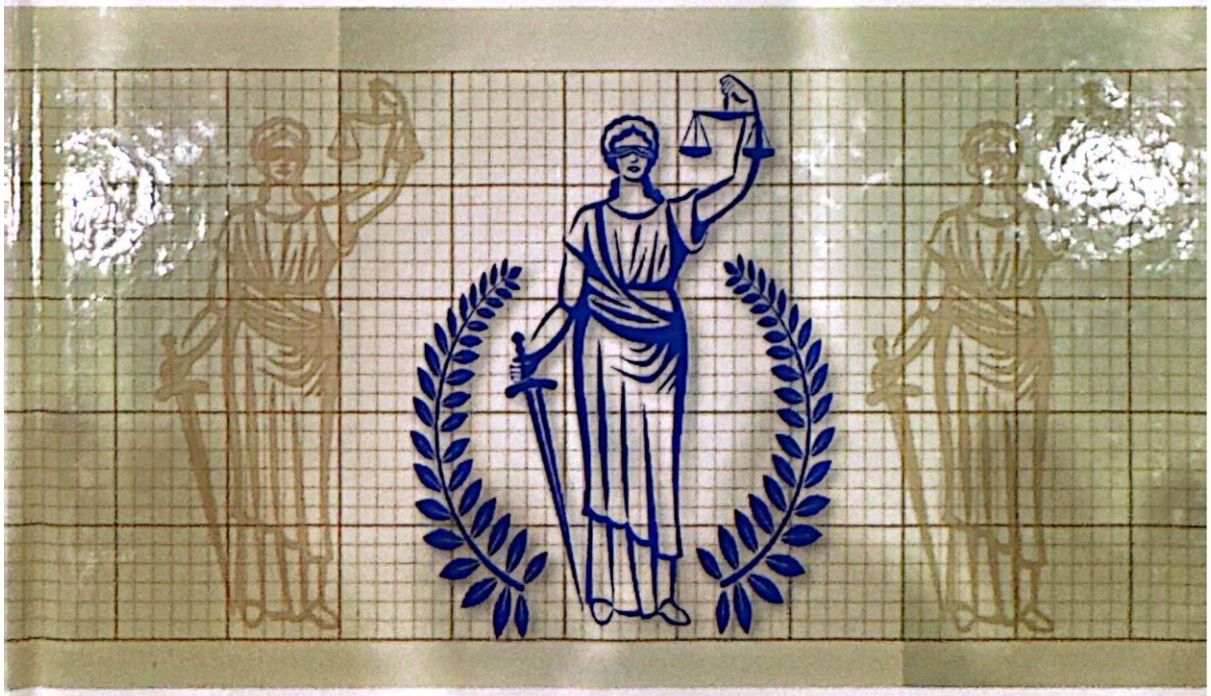

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Национальное руководство по судебной медицине содержит современную информацию, основанную на последних публикациях и результатах научных исследований.

В руководстве отражены особенности проведения экспертиз в связи с изменениями и дополнениями, внесенными в законодательство. Рассмотрен широкий спектр вопросов судебно-медицинской экспертизы. Представлены сведения о классификации и эпидемиологии повреждений.

Теоретические данные по патогенезу и диагностике действия повреждающих факторов на человеческий организм, изложенные в руководстве, получены в ходе научных исследований, выполненных на кафедрах судебной медицины российских вузов, и дополнены результатами собственных исследований авторов.

Издание предназначено врачам судебно-медицинским экспертам, врачам-интернам и клиническим ординаторам, обучающимся по специальности «Судебная медицина», студентам медицинских и юридических вузов, а также будет полезно юристам.

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МЕДИЦИНСКИЯТ ДЕЛИКТ В УСЛОВИЯТА НА ПАНДЕМИЯ ОТ COVID–19
Мария Шаркова, адвокат

АКТУАЛНО
ВИНАТА ПРИ ТРАНСПОРТНИТЕ ПРЕСТЪПЛЕНИЯ
Пеню Грозев, инспектор в КПКОНПИ

КОМЕНТАР
МЕДИЦИНСКИТЕ ИЗДЕЛИЯ В БЪЛГАРИЯ И ЕС
Кремена Иванова, д-р Стаматиос Прифтис
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АНАЛИЗ
ТРУДОВОПРАВНИ ПРОБЛЕМИ ПРИ ИЗВЪНРЕДНО ПОЛОЖЕНИЕ
А-р Христо Банов, ИДП при БАН

Брой 5, 2020 г.

Въпроси за разпитите при разследване на пътнотранспортни произшествия

(В съдебномедицински и автотехнически аспект)

Проф. д-р Добринка Радойнова*
Медицински университет – Варна

Проф. дтн инж. Михаил Серафимов**
Технически университет – Варна

Д-р Янко Колев***
МБАЛ „Д-р Т. Венкова" – Габрово

* **Добринка Радойнова** е доктор по медицина, началник на Клиниката по съдебна медицина в УМБАЛ „Св. Марина" във Варна и професор в Медицински университет–Варна, където преподава съдебна медицина и деонтология повече от 40 години. Също така е преподавател по съдебна медицина и съдебномедицинска експертиза във ВСУ „Черноризец Храбър". Изготвя различни съдебномедицински експертизи и има разностранни научни интереси в различни съдебномедицински области. Автор е на над 170 статии и съавтор в пет съдебномедицински ръководства и две монографии. Изявен радетел за високо професионална съдебномедицинска експертиза.

** **Михаил Серафимов** е инженер, доктор на техническите науки и професор. Преподавал е в Техническия университет – Варна, Бургаския свободен университет и Техническия колеж – Смолян, към Пловдивския университет „Паисий Хилендарски" в областта „Транслортна техника и технологии" в продължение на 41 години. Работил е 10 г. по съвместителство в Институт по металознание и технология на металите към БАН – филиала във Варна. От 20 г. е експерт по пътнотранспортни произшествия. Защитил е дисертации за придобиване на образователна и научна степен „доктор" и за научна степен „доктор на техническите науки" в областта на двигателите с вътрешно горене.

*** **Янко Колев** е доктор по медицина, началник на Отделение по Съдебна медицина в МБАЛ „Д-р Тота Венкова" – Габрово, и лектор по „Съдебна медицина" в Медицинския университет – Плевен. Член е на Експертния съвет по Съдебна медицина на

Резюме: Систематизирани са въпросите, които разследващите полицаи следва да задават на свидетелите на пътнотранспортни произшествия в зависимост от техния вид (удар на пешеходец, удар между автомобили и др.) от гледна точка на потребностите от информация за съдебномедицинските, автотехническите и комплексните експертизи.

Ключови думи: Пътнотранспортно произшествие, въпроси към свидетелите, съдебномедицинска експертиза, автотехническа експертиза, комплексна експертиза

Questioning witnesses during road traffic accident investigation

(Medico-legal and forensic engineering perspective)

Prof. **Dobrinka Radoinova**, MD, PhD, Medical University of Varna
Prof. Eng. **Michail Serafimov**, DSci, Technical University of Varna
Yanko Kolev, MD, PhD, District hospital MBAL „Dr. Tota Venkova" – Gabrovo

Abstract: The questions that the investigating police officers should ask to the witnesses of traffic accidents depending on their type (vehicular collisions with other vehicles or pedestrians, etc.) are systematized in terms of the needs for information during investigation and reconstruction of accidents from medico-legal and forensic engineering point of view.

Keywords: Road traffic accident, questions for interrogations of witnesses, medico-legal investigation, forensic engineering investigation, complex investigation

„When you have eliminated the impossible, whatever remains, however improbable, must be the truth."
(Sherlock Holmes, „The Sign of the Four")
„Когато елиминираме невъзможното, каквото остане – дори и невероятно, трябва да е истината"
(Шерлок Холмс, „Знакът на четиримата")

Министерство на здравеопазването, член-делегат на Европейския съвет по Съдебна медицина и секретар на Българското дружество по Съдебна медицина. Има дисертация по съдебна ентомология (използване на насекомите при определяне на давност на смъртта). Опитва се да налага нови методики и високотехнологични обективни методи в съдебномедицинската експертиза – постмортална образна диагностика и виртуална аутопсия, 3D-реконструкции на телесните увреждания, ехографска и инфрачервена диагностика при прегледи на живи лица и аутопсии. Има над 70 научни статии, доклади на международни конгреси и конференции, лекции в чужбина, съавтор е в националното ръководство за специалисти по съдебна медицина на Русия. Награден с почетни знаци за изключителен принос от Националния институт по съдебна медицина на Португалия и от Българския лекарски съюз.

Institute of Experimental Morphology, Pathology and Anthropology with Museum
Bulgarian Anatomical Society

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Fat embolism during hip replacement. Risk Reduction

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Fat embolism is a complication of long bone fractures, intramedullary fixation and joint arthroplasty. It may progress to fat embolism syndrome, which can occasionally be fatal. Thrombembolic complications, which include ~~the~~ fat embolism syndrome, are well-known consequences of femoral total hip replacement. The increase in intramedullary pressure in the femur is the most decisive pathogenic factor for the development of embolic phenomena. Three cases of intraoperative death during total hip replacement of patients aged over 65 are reported. The efficiency of new techniques developed to prevent the risk of intraoperative pulmonary embolism was assessed. The observed mortal cases were discussed and the increased risk in elderly patients addressed. All the options to reduce the amount of fatty tissue in the medullary cavity and pressure during total hip arthroplasty should be considered. Application of jet lavage is to be a regular practice in all clinics.

Key words: fat embolism, hip arthroplasty, elder patients, intraoperative death

Introduction

Fat microembolism is a complication with embolism of the vessels of internal organs with fat drops, entering the veins around fractures of long tubular bones and pelvis, extensive subcutaneous fat tissue trauma, or during intramedullary fixation and arthroplasty.

This phenomenon may progress to the development of fat embolism syndrome, which is relatively rare but leads to prominent clinical manifestations and in some cases to death [4, 5].

Thromboembolic complications that include fat embolism syndrome are well known for hip arthroplasty.

There are several theories about the pathogenesis of fat embolism.

The main mechanism (classical pathophysiologically confirmed theory) is entering in the veins of fat droplets from the site of tissue damage. They pass by the bloodstream through the heart and enter the arterioles and capillaries in the lungs, leading to obstruction (Fig. 1). Drops (to approx. 20%) can undergo pulmonary arterio-venous anastomoses and reach other internal organs – brain, kidneys (Fig. 2).

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Cases of Bodily Injuries During Arrest and in Custody

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Cases of bodily injuries to two groups of victims are presented: 1) police officers during their professional duties by persons subject to detention or detained; 2) detainees (citizens) – during arrest, in pre-trial detention or in custody (cells or prison). A retrospective study was performed for all cases of examination of living persons for a 5-year period (2005-2009). The number of cases of police violence slightly prevail over the number of police officers who were victims of detainees' violence. In all of the cases examined there was a minor injury (low battery) ruled, with the exception of one case of the detainee – victim to another inmate, ruled as a medium grade of battery. The violence in the studied two groups is relatively rare and there are no serious cases of physical violence or death from the described period.

Key words: police violence, violence against police officers, medico-legal investigation.

Introduction

The incidence rate of injured law enforcement officers – police officers, judicial security and prison officers is not high, but have a social importance as accidents while performing their professional duties. On the other hand, during the arrest of citizens by police and at the places of detention (pre-trial detention or in custody), detainees complain from physical violence exerted on them.

The aim of this work is the parallel study of these two groups to compare the incidence of violence based on the collected data from forensic medicine units.

A cases of physical violence and a grade of bodily injuries to two groups of victims are studied: 1) police and judicial security officers during their professional duties by persons subject to detention or detained; 2) Physical abuse of detainees (citizens) — during arrest, in pre-trial detention or in custody (cells or prison).

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Using Pig Carrion As an Experimental Model for a Human Body in Forensic Entomology Succession Study – a Methodology

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In the last decades, forensic entomology has begun to play an important role as an investigative procedure. For estimation of PMI, basic distribution data for the most indicator species of insects are required. It is apparent that the seasonality and species assemblage vary in different geographical areas. An initial succession study started in the suburban area of Gabrovo, Bulgaria, using pig carrion as model representing human body. The methods are described in details. It is important to introduce the basic knowledge of methods and applications of the science among all professionals involved in a death investigation. Only the good collaboration and a clear procedure can lead to a full understanding of all the evidence recorded at the crime scene and at the autopsy.

Key words: forensic entomology, succession study, methodology, pig, PMI.

Introduction

Forensic entomology is the name given to the study of insects and other arthropods for use in forensic investigations. For estimation of postmortem interval (PMI), basic distribution data for the major indicator species of insects are required. It is apparent that the seasonality and species assemblage vary in different geographical areas.

A study to determine possible indicator species of insects in suburban area of Gabrovo, Bulgaria, was conducted using pig carrion as models representing human bodies. The studies were planned for each season of the year 2007 and may be repeated. The main objective of the work is to study the entomofauna of a cadaver of a white pig (*Sus Scrofa*), the period of invertebrate activity with relation to the different phases of decomposition, to determine the most indicator forensic species of insects for the season and for the region, and to prepare a reference collection of insects from this region for subsequent studies. In view of the fact that forensic entomology has provided excellent results in other countries, a first step should be taken to include these **methodologies** in Bulgaria, with the purpose and tools that may be used subsequently in legal proceedings.

FORENSIC MEDICAL EXAMINATION AS A KEY ELEMENT IN THE INVESTIGATION OF DOMESTIC VIOLENCE CASES IN BULGARIA

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Summary: *Forensic medical examination emerges as a critical element in addressing domestic violence cases in Bulgaria, offering an impartial mechanism to collect essential data, traces and evidence for judicial processes. This review emphasizes the necessity of detailed anamnesis to understand the incident context and relationships involved, while also addressing the emotional challenges faced by victims during examination. The trust and credibility of forensic medicine are pivotal, with suggestions for enhancing public confidence through professional conduct, strategic facility placement, and transparent operations.*

Key improvements proposed include disseminating educational materials within medical settings, establishing a centralized funding mechanism for forensic medical examinations in domestic violence scenarios, and introducing specialized training for 'forensic nurses' to support evidence collection and victim assistance at first response medical facilities. These measures aim to refine the forensic examination process, ensuring effective support for victims and the provision of critical evidence for legal adjudication.

The streamlined forensic medical process is vital for the effective documentation and legal resolution of domestic violence, highlighting the need for procedural enhancements, international standardization, and specialized training to bolster the role of forensic medicine in Bulgaria's response to domestic violence.

Keywords: *domestic violence, clinical forensic medicine, medico-legal investigation*

Introduction: Domestic and gender-based violence, unfortunately, has existed since the emergence of the human species. This effectively renders the issue quite challenging to address, especially in ethnic

CHILD ABUSE: ALGORITHM OF ACTIONS FOR A FORENSIC MEDICAL EXAMINER

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Summary: *Introduction. Family violence is a serious problem with significant societal implications. It can take various forms, including physical, psycho-emotional, economic, and sexual violence. From a medico-social perspective, it is a serious issue, as individuals subjected to violence in the past often face psychological disorders later on. Children and adolescents who witness domestic violence internalize corresponding gender behavior models and transmit them to the next generation. The*

aim of the study was to conduct a comprehensive investigation related to child abuse and adolescent violence by systematically analyzing literature and developing an algorithm of action for a forensic medical examiner. Materials and Methods. A systematic thematic bibliographic review was utilized for this study. Results. An algorithm of actions for a forensic medical examiner was developed for cases of child abuse or suspicion thereof. Discussion. To suspect child abuse and conduct a proper examination of the victim without causing additional harm, forensic medical examiners must understand the child's reaction to child abuse and its consequences. Another important competence of forensic medical examiners in cases of suspected child abuse is obtaining a correct and comprehensive medical history. Conclusions. Child abuse and neglect manifest in various forms, each with its unique consequences, yet consistently pose a serious threat to the child's health, development, and socialization, often endangering the child's life or leading to fatal outcomes. Studying the research results on this matter allows the conclusion that it is an important problem requiring further study and development of preventive measures. Although forensic medical examination in cases of domestic violence is not a separate type of expertise, the identified peculiarities and social significance underscore the need not only for improving the methodology of expert research but also for establishing clear collaboration with medical institutions, law enforcement agencies, social services, and non-governmental organizations. Additionally, to prevent long-term consequences of domestic violence, involving relevant specialists such as psychologists or psychotherapists in the forensic medical examination of victims is advisable.

Keywords: *child abuse, adolescent violence, family violence*

Introduction: Child abuse and adolescent violence pose a serious challenge both for the state and for every conscious individual. The consequences of this detrimental phenomenon manifest in many children lacking access to education, stable housing, resorting to begging, and enduring physical violence. Unfortunately, domestic violence extends beyond the confines of the family, and children who experience parental violence later perpetrate cruel acts against their peers. This leads to an escalation of violence across all societal levels, necessitating urgent resolution [1, 21, 24].

Family violence is a serious problem with significant societal implications. It can take various forms, including physical, psycho-emotional, economic, and sexual violence. According to data from the National Police of Ukraine, in 2023, 243.980 complaints and reports of offenses related to domestic violence were filed with the police. Of these, 76.5% were from women, over 20.5% were from men, and over 3% of the total were from children. From a medical-social perspective, this is a serious issue, as individuals who have been subjected to violence in the past often experience psychological disorders later on. Children and adolescents who witness domestic violence internalize corresponding gender behavior models and transmit them to the next generation [2, 13, 20].

Since January 11, 2019, Ukraine has enacted the Law "On Prevention and Counteraction to Domestic Violence" [28], which significantly changed responsibility for manifestations of violence in the family. According to the new Article 126-1 of the Criminal Code of Ukraine, domestic violence, including the intentional systematic use of physical, psychological, or economic violence against a spouse or former spouse, or another person with whom the perpetrator is (was) in a family or close relations, is punishable by community service, arrest, restriction of liberty, or imprisonment. Additionally, it is noteworthy that in 2022, Ukraine ratified the Istanbul Convention, which aims to prevent violence against women and children and combat such manifestations. The authors' intention behind the Convention is to protect victims of violence and punish offenders. Under its jurisdiction, in addition to women and children, men and elderly people are also covered. The Convention advocates that violence against women and children, domestic violence, is not a private matter; the state must prevent violence, protect victims, and criminally prosecute perpetrators [27]. Suspecting cases of domestic violence against children, detecting and documenting physical injuries on children's bodies, as well as signs of neglect and inadequate care, are justified and relevant skills for a forensic medical examiner.

It is important to note that the definition of domestic violence now encompasses not only events in a registered marriage but also cases of aggression between former partners and between persons in civil unions. Additionally, individuals who live or have lived together, as well as relatives (siblings, uncles, aunts, nieces, etc.), can be identified as perpetrators of domestic violence [1, 3, 9].

According to researchers, the majority of victims of domestic violence are individuals of working age (25-48 years old). Other age groups, such as children and adolescents, become participants in family drama much less frequently [1, 8, 12, 22, 26]. Although children are less likely than other family members to experience violence, child victims typically experience different forms of violence simultaneously, leading to more severe consequences. For example, sexual violence (incest) not only causes physical harm but also destroys family relationships, trust, and often involves psychological violence through manipulation, threats, or intimidation [7, 16, 17, 26]â.

ВСЕРОССИЙСКОЕ ОБЩЕСТВО СУДЕБНЫХ МЕДИКОВ

МОСКОВСКОЕ ОБЩЕСТВО СУДЕБНЫХ МЕДИКОВ

ИВАНОВСКОЕ ОБЛАСТНОЕ ОБЩЕСТВО СУДЕБНЫХ МЕДИКОВ

ВЛАДИМИРСКОЕ ОБЛАСТНОЕ ОБЩЕСТВО СУДЕБНЫХ МЕДИКОВ

НАЦИОНАЛЬНЫЙ ИНСТИТУТ МЕДИЦИНСКОГО ПРАВА
КАФЕДРА СУДЕБНОЙ МЕДИЦИНЫ И МЕДИЦИНСКОГО ПРАВА
МГМСУ им. А.И. Евдокимова

АКТУАЛЬНЫЕ ПРОБЛЕМЫ СУДЕБНОЙ МЕДИЦИНЫ И МЕДИЦИНСКОГО ПРАВА

Материалы межрегиональной научно-практической конференции с международным участием

23–24 апреля 2014 г., г. Суздаль

Под редакцией профессора П.О. Рамодановского, профессора С.В. Ерофеева, профессора Е.Х. Баринова

ЮрИнфоЗдрав

Суздаль, 2014

УДК 340.6(082)
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С23

Актуальные проблемы судебной медицины и медицинского права: Материалы межрегиональной научно-практической конференции с международным участием. — М.: НП ИЦ «ЮрИнфоЗдрав», 2014. —450 с.

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В сборнике представлены работы ученых и специалистов — судебных медиков из различных государственных экспертных учреждений, сотрудников кафедр судебной медицины и медицинского права образовательных учреждений высшего профессионального образования РФ, юристов. Сборник адресуется научным работникам и преподавателям кафедр судебной медицины, медицинского права, практическим экспертам, юристам.

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СОЦИОЛОГИЧЕСКОЕ ИССЛЕДОВАНИЕ НА ТЕМУ СОЦИАЛЬНОГО СТАТУСА И УДОВЛЕТВОРЕНИЯ РАБОТОЙ СУДЕБНЫХ ВРАЧЕЙ

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Введение

Организация здравоохранения в Болгарии включает в себя наличие отделений по судебной медицине в каждой областной больнице, а в медицинских университетах — наличие кафедры по Судебной медицине и деонтологии. Вопрос, кому финансировать функции этих структур, все еще не решен. Лечебные заведения (областные больницы) представляют собой торговые дружества и получают финансирование только по так называемым клиническим дорожкам (по системе страхования здоровья), а таковых по судебной медицине нет. Структуры по судебной медицине не генерируют доходность для лечебного заведения, чем являются «тяжестью» для его бюджета. Поддержка материально-технической базы, необходимой для судебных врачей – дорогая, но социально-значимая задача. Экспертная деятельность проводится в основном на базе больниц, а результаты этой деятельности нужны для досудебного расследования и для судопроизводства — МВД, прокуратуре и суду. Издание Постановления № 2 26.10.2011 г. решило частью эти проблеммы, но судебные врачи остались без статуса и стандартов работы.

Цель

Изучить связи между социальным статусом судебных врачей и их профессиональной удовлетворенностью.

Материалы и методы

Проведено социологическое исследование среди 27 судебных врачей (всего в Болгарии около 70 судебных врачей) со всей страны в 2011 году. Для цели использована анонимная анкета, состоящая из 43 закрытых и открытых вопросов. Использованы также нормативные и другие документы.

Результаты и обсуждение

Социально-демографская характеристика судебных врачей

Средний возраст исследованных лиц — 48 лет, т. е. уровень непрерывности опыта среди молодых врачей — низкий. 70 % из респондентов — мужского пола, а 30 % — женского. Срок службы выше 20-ти лет у 48 %, срок 11–20 лет у 41 %, и срок 1–10 лет у 11 %. Преобладающая часть из них (85 %) имеют диплом по специальности, а 15 % специализируются в момент исследования.

Социальный статус судебных врачей

Социальный статус судебных врачей определяется местом, на которое они ставят сами себя на социальной лестнице богатства и бедности, если принять 1-вую позицию как «богатый» (социальная вершушка), а 10-тую ступень как «бедный» (социальное дно). Богатые слои присваиваются 1–4 позиции, средние слои — 5–7 позиции, а бедные слои — 8–10 позиции. На самом деле социальный статус обозначает положение индивидов/групп в йерархизированной системе социальных неравенств [2]. Смотря на самооценку судебных медиков, только 14,8 % самоопределяются в бедный класс, а половина их находится только на ступень выше социального дна (Рисунок 58).

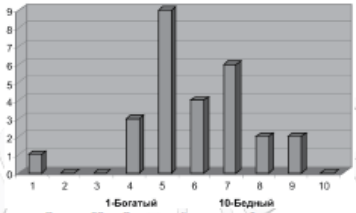

Рисунок 58 — Социальный статус судебного врача.

Мы считаем, что не нормально, чтобы около 15 % из анкетированных судебных врачей считали себя частью бедного класса в нашей стране, и чтобы жили с чувством, что находятся у социального дна. Не говорит хорошо о социальном управлении и тот факт, что даже те, кто не причислили себя к среднему классу, в преобладающей свое части не в самом высоком слое среднего класса (5 позиция), а находятся в более низких слоях среднего класса (6-ая и 7-мая позиция). Смущает то, что речь идет о профессии врача, которая среди самых высокостатусных профессий в мире, наравне с профессиями архитекта и юриста – все они пользуются и самым высоким социальным престижем. Именно поэтому, в этой профессии не следовало быть представителям, которые находятся в бедных слоях общества, а даже и в более ниских разделах среднего класса. Присутствие подобного явления у нас, говорит о *статусной дисфункции* [2], которая подсказывает, что что-то не в порядке с управлением общества и его подсистем, в т. ч. и в здравоохранении.

Это утверждение подкрепляется и фактом, что 67 % из респондентов определяют свое материальное вознаграждение как очень низкое и низкое, давая оценку 1 и 2 по пятиступенчатой шкале (Рисунок 59). В соответствии с ними, неудовлетворенность вознаграждением происходит от того, что экспертный труд приравнивается

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`2 2012

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Содержание:

ИССЛЕДОВАНИЕ

Добринка Д. Радойнова, Иван Козовски, Янко Г. Колев

ОПАСНЫЕ ДЛЯ ЖИЗНИ ПОСЛЕРОДОВЫЕ КРОВОТЕЧЕНИЯ И ИХ КЛИНИЧЕСКОЕ ЗНАЧЕНИЕ

Авторы обсуждают 10 случаев - семь после вагинального и цервикального разрыва, 2 после Кесарева сечения и 1 после гистерэктомии. Шесть из больных умерли - 5 после разрыва влагалища и шейки и одна после Кесарева сечения. Смертельная проблема была преодолима во всех случаях, потому что это был результат сделанных несвоевременных или не сделанное при гистерэктомии и других вмешательствах легирования артерий, так же как дефектной хирургической работы. Основные принципы хирургического поведения в таких случаях постулируются. Во всех случаях клинического исследования были установлены и показаны пробелы в лечении

Ключевые слова: послеродовое кровотечение, вагинальный и цервикальный разрыв, Кесарево сечение, гистерэктомия, клиническая оценка

Данные статистики показывают, что около 500 000 женщин умирают ежегодно во время беременности, родов или до 42-го дня после родов, т.е. каждую минуту умирает беременная женщина или роженица [2, 9, 20, 22]. Материнская смертность в последние годы колеблется в пределах от 1-4/100 000 родов (Австрия, Германия, Ирландия, Израиль, Италия, Швеция и др.) до 1000-2100/100 000 родов (Руанда, Сьерра Леоне, Сомали, Либерия, Конго, Афганистан, Чад и др.) [9, 20, 22]. Для Болгарии показатели материнской смертности от 11 до 13/100 000 [2, 9, 20]. Эти показатели в два раза хуже, чем средние для Европы. Оказалось [2, 9, 20, 22, 23], что эти данные в действительности еще выше. Геморрагический шок – одна из основных причин материнской смертности [9, 10, 12, 14, 15, 16, 18, 20, 22, 23].

Представляем здесь 10 случаев, из них 7 за 2009 г. и по одному за 2004 г., 2005г. и 2010г.:

• С. Ю., 18 лет, рожает во второй раз. Первая беременность закончилась кесаревым сечением. Врачи решили вести роды естественным путем. После родов началось обильное кровотечение от разрыва шейки и части форникса влагалища. Двукратные попытки остановить кровотечение влагалищным доступом были безуспешными. Роженица умерла на операционном столе до начала операции и 2 часа после родов.

• С. Р., 38 лет, девятые роды. Через два часа после родов отправлена в спешном порядке из одной больницы в другую, в соседний город, из-за продолжающегося кровотечения, несмотря на наложение швов на разрыв шейки и тампонаду. Повторный осмотр, шов влагалища и шейки и повторная тампонада. Кровотечение продолжется и роженица впадает в шоковое состояние, несмотря на массивную трансфузионную, инфузионную и медикаментозную терапию. Через восемь часов после родов сделан второй осмотр, инструментальная ревизия матки, шов и снова тампонада. Лапаротомия не предпринята, „из-за того, что путем лигатуры двух гипогастральных артерий, кровотечение из вагинальной, ректальной и пудендальной артерии невозможно остановить". Роженица умирает 16 часов спустя родов.

• Д. С., 24 года, первые роды. После выхода плаценты кровотечение продолжается. При осмотре в зеркалах установлен разрыв шейки и влагалища. После инструментальной ревизии совершена безуспешная попытка закрепить разрыв швом. Последовательно канюлируются обе подключичные вены. Ante mortem, 90 мин. после родов, производится безрезультатная лапаротомия. На вскрытии в правой плевральной полости обнаруживается 1,5 литра крови при повреждении правой подключичной артерии.

• А. И., 30 лет, третьи роды. Поступает с переношенной беременностью. После продолжительной стимуляции, ребенок рождается в угнетенном состоянии. После рождения плаценты началось обильное кровотечение. При осмотре в зеркалах установлен разрыв маточной шейки и гематома влагалища, которые обшивают. Кровотечение продолжается, несмотря на инструментальную ревизию матки и тампонаду влагалища. Три часа спустя родов, снова делают шов, без успеха, и совершают лапаротомию. Общая кровопотеря во время операции оценивается в 4 литра. Через 10 часов после гистерэктомии, из брюшного катетера вытекает 1,3 л крови, кровотечение продолжается. При релапаротомии в брюшной полости обнаружено 2 л крови и сгустков крови. Наложены обеспечительные лигатуры. Реанимационные мероприятия безрезультатны и 10 часов после последней операции наступил летальный исход.

• П. А., 15 лет, первые роды. Поступает с диагнозом „Отслойка плаценты, Мертвый плод". Сделано кесарево сечение доступом по Пфанненштилю, маточная стенка восстановлена модифицированным одиночным швом. Операция продолжается 30 мин. Восемь часов спустя роженица в очень тяжелом состоянии, с затрудненным дыханием и сильными болями в животе. Начинают интенсивную реанимацию, но через 45 минут она скончалась. При вскрытии в брюшной полости установили 2 литра крови и 300 мл кровяных сгустков. Кровотечение - из области маточного шва.

• Б. Д., 30 лет, вторые роды. Поступает с диагнозом „Беременность в 10 л.м., Эклампсия». Сделано кесарево сечение, при котором установили преждевременное отслоение плаценты и матка Кувелера. Состояние роженицы ухудшилось через 12 часов после операции. При ультразвуковом исследовании установили значительное количество крови в брюшной полости. При релапаротомии удаляется матка низко суправагинально, вместе с одним придатком, причина: кровотечение из области маточных швов. Состояние роженицы улучшается медленно, из-за тяжелого белкового и водно-электролитного

К вопросу о научной работе в судебной медицине

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/ Колев Я.Г., Радойнова Д.Д. // *Избранные вопросы судебно-медицинской экспертизы. — Хабаровск, 2009 — №10. — С. 7-10.*

Быть или не быть судебной медицине? Этот вопрос относится к развитию судебной медицины как медицинской науки. Практика судебного врача, вне сомнения, будет необходима и в дальнейшем, по сути процессуальной необходимости и незаменимости. Однако, это приводит к постепенному выходу судебной медицины из круга академических дисциплин во многих странах Европы и к постепенному переходу к частной (приватной) деятельности. Тревожит тот факт, что изучение судебной медицины как отдельной медицинской науки исчезает из программ обучения медицине [6, 7]. Финансирование деятельности судебно-медицинских институтов и отделений в некоторых странах происходит только за счет изготовления экспертных заключений по заказу полиции, суда и прокуратуры. Таким образом, приоритетом становится обыденная практика, приносящая деньги, а наука и развитие становятся нерентабельными.

К ВОПРОСУ О НАУЧНОЙ РАБОТЕ В СУДЕБНОЙ МЕДИЦИНЕ

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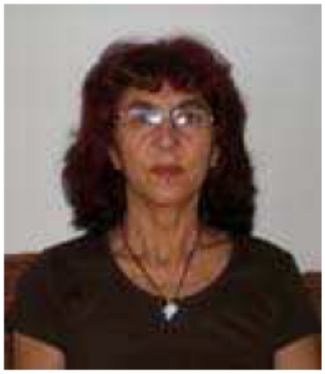
Быть или не быть судебной медицине? Этот вопрос относится к развитию судебной медицины как медицинской науки. Практика судебного врача, вне сомнения, будет необходима и в дальнейшем, по сути процессуальной необходимости и незаменимости. Однако, это приводит к постепенному выходу судебной медицины из круга академических дисциплин во многих странах Европы и к постепенному переходу к частной (приватной) деятельности. Тревожит тот факт, что изучение судебной медицины как отдельной медицинской науки исчезает из программ обучения медицине [6, 7]. Финансирование деятельности судебно-медицинских институтов и отделений в некоторых странах происходит только за счет изготовления экспертных заключений по заказу полиции, суда и прокуратуры. Таким образом, приоритетом становится обыденная практика, приносящая деньги, а наука и развитие становятся нерентабельными.

Означает ли это, что судебный врач должен быть непоправимым идеалистом и отдавать науке свою душу, вопреки негативным мировым тенденциям и вопреки своим материальным потребностям? Интересный вопрос, который можно задавать и тем, кто выделяет деньги на научные исследования – в основном государственные фонды развития науки и образования, фонды, связанные с социальными исследованиями и компании, чьи продукты находят практическое приложение в данном направлении.

Интересен и тот факт, что пути финансирования судебной медицины не связаны прямо с тем, насколько развито данное государство и насколько богат его бюджет – государственное (или от местной власти), финансирование имеется в таких различающихся между собой странах, как США, Албания, Фиджи, Австралия, Турция, Россия, Словакия и т.д. А финансирование за счет работы – в Англии, Австрии, Германии, Франции, Болгарии (хотя на местах есть минимальная издержка) и т.д.[5]. Есть и комбинированная система финансирования – издержка материальной базы за счет власти, а деятельности – за счет выполненной работы по заказу. Последний вариант находит приложение все чаще и вероятно ему принадлежит будущее.

Несмотря на пути финансирования, субсидии на научные исследования в области судебной медицины не выделяются почти нигде, или они в основном связаны с исследованиями в социальной сфере приложения и развития гражданского общества, а не со сугубо медицинским направлением. Наличие субсидий на социально-ориентированные исследования, все-таки может привести к развитию материальной базы и доставку современного оборудования.

Академическое сообщество судебной медицины в Европе тревожится этими вопросами, и они рассматриваются, как приоритет профессии и залог ее



Dobrinka Radoinova

ORGANIZATION, STRUCTURE AND PROCEDURAL PRINCIPLES OF MEDICOLEGAL INVESTIGATION IN BULGARIA

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Keywords: organization of forensic medicine, structure of forensic medicine, procedural principles, current problems

Abstract: The enactments and normative principles are different in the countries of the Balkan region, but the legal investigation is a procedural instrument for collecting and verification of the evidence in criminal and civil cases. The aim of this study is to present the organization, structure and procedural principles of medicolegal investigation in Bulgaria, and its current problems to solve. The performance of legal investigations in Bulgaria is specified by the Criminal Procedural code, the Civil Procedural code, by special regulations and instructions of the authorities, which settle the organization and the implementation of different types of investigation. There is a compulsory specialized medicolegal investigation brought into use in Bulgaria for cases where there is doubt concerning: 1/ Cause of death; 2/. Character of battery; 3/ Sanity of defendant; 4/ Capability of defendant and witness as regards their mental and physical condition of correctly understanding the facts related to the legal proceeding and offering reliable explanations of them.

In Bulgaria there has been introduced official specialized legal medicine expertise. In each of the five medical universities in Bulgaria there are departments of Forensic medicine and Deontology, and in all district hospitals there are Forensic medicine wards. Since 2006 there has been more and more frequent use of informal investigation, which reduces the quality of expert work. The hospital healthcare is financed by the National Health Insurance Fund and there is no direct funding for forensic medicine. Main problems: no control upon the quality of experts' work and investigation; the material and technical equipment of the facilities are

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