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**The 6th International
Symposium of
The Osteuropaverein
on Legal Medicine**



THE 6TH INTERNATIONAL SYMPOSIUM OF THE OSTEUROPAVEREIN ON LEGAL MEDICINE



2 – 4 October 2014
Chișinău, Republic of Moldova

Organizers:

OSTEUROPAVEREIN e. V. Germany

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Pharmacy "Nicolae Testemițanu", Republic of Moldova

Center of Legal Medicine, Republic of Moldova

Scientific Society of Legal Medicine, Republic of Moldova



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Dear Colleagues and friends,



On behalf of the organizing committee it is my pleasure to invite you to Chişinău, Republic of Moldova for the 6th Symposium of the Osteuropaverein on Legal Medicine, which will be held on the 2nd-4th October, 2014. This symposium will be dedicated to *Interesting forensic cases*. In our opinion, this topic is a quite broad and flexible one, giving the opportunity to present unique cases from your practice and to analyze those from our colleague experience.

An efficient exchange of the scientific information and opinions are encouraged in order to enrich experience of all participants.

The Republic of Moldova is geographically situated in the heart of Europe between Romania and Ukraine, and aspires to be part of the European Union. Chişinău is the capital of the country and the most economically and socially

important municipality in Moldova, the city has a broad range of educational facilities.

During the cultural program you will discover the beauties of the country, the hospitality of its people and the famous wine traditions.

Looking forward to welcoming you in Chişinău in October 2014.

We are thankful to the Rector of the State University of Medicine and Pharmacy „Nicolae Testemiţanu”, academician Ion Ababii, for hosting the Symposium, to the president of Osteuropa-Verein Rechtsmedizin e.V, Dr. Kurt Trübner, for his help in Symposium organization, to the editor-in-chief of the „Info-Med” Journal, prof. Ion Mereuţă for editing the Symposium materials and to the Symposium sponsors.

**Hosting Chair
Andrei Pădure**



Organizing committee:

Chair:

Dr. Andrei Pădure (Chişinău)
Dr. Kurt Trübner (Essen)
Prof. Dr. Gheorghe Baciu (Chişinău)
Dr. Ion Cuvşinov (Chişinău)

Members:

Anatolii Bondarev
Vasile Şarpe
Eduard Lungu
Alexandru Chistol
Constantin Ciorba
Aurel Vicol
Victor Odovenco

Main topic:

Interesting forensic cases
Free communications

Duration of oral presentations is 10 minutes and 5 minutes for discussions.

Official language:

English

Authors are responsible for the paper content.

Preliminary Program**2 October 2014. Thursday**

16:00 – 20:00 Registration of the participants
19:00 Welcome cocktail

3 October 2014. Friday

09:30 – 10:00 Opening ceremony
10:00 – 11:00 Chairmen reports
11:00 – 11:30 Coffee break
11:30 – 13:00 Scientific section
13:00 – 14:00 Lunch break
14:00 – 15:30 Scientific section
15:30 – 16:00 Coffee break
16:00 – 17:00 Scientific section
18:00 Cricova winery (wine cellar)

The temperature in the underground galleries is +12 +14°C, warm clothes are recommended.

4 October 2014. Saturday

09:00 – 10:30 Scientific section, discussions, conclusions
10:30 – 11:00 Closing ceremony
11.00 – 20.00 Cultural program

- Historical and archaeological complex Old Orhei (Orkhey)
- Lunch
- Curchi (Kourky) Monastery
- Free program (organizers strongly recommend the National Wine Day, Chişinău Central Square)

SECTION 1. HISTORY AND ORGANIZATION



HO-01

Department of Legal medicine and its development perspective

Andrei Pădure

Department of Legal medicine, SUMPh "Nicolae Testemițanu"

Chișinău, Republic of Moldova

The department of Legal medicine of the State University of Medicine and Pharmacy "Nicolae Testemițanu" from the Republic of Moldova was founded in October, 1945. Study process began one year later (1946), but the educational activity in that period was minimal, and the scientific researches were not done. After Mr. P. Areșev's designation as Head (1949), the department began its rapid development in all areas, especially in science. He founded the national scientific school in legal medicine and, thanks to his prodigious activity (1949-1966), is considered as founder of the chair and of the whole service of legal medicine in the country. Together with the chair staff he studied the scientific issue dedicated to the *Relationship between preexisting diseases and trauma*. Under his guidance, during 1961-1971, 5 PhD theses were approved. After his departure in 1966, the department was headed by the Associate Professor Gheorghe Botezatu, who became Professor in 1977. Mr. Botezatu initiated a new scientific issue dedicated to *Diagnosis of death age*. During 1985-1995, under his leadership 5 PhD theses were approved.

In 1995 head of the department became Mr. Gheorghe Baciu, who got his Professor title in 1988. He developed a new scientific direction – *Etiology and pathogenesis of violent death and developing*

of the forensic expertise criteria. Under the guidance of Professor Gheorghe Baciu 2 Doctor habilitatus theses (1998-2011) and 5 PhD thesis in medicine (2003-2014) were performed. Between 1997 and 2002 a new form of specialization in legal medicine was implemented – master (2 years study). 16 master theses were developed during this period of time, under the leadership of Prof. Gh. Baciu. Since 2003, the only form of specialization in legal medicine is residency, which lasts three years.

In 2008 head of chair became Mr. Andrei Pădure, Associate Professor since 2005. During recent years, the top management of SUMPh "Nicolae Testemițanu" has started different actions oriented to optimization of studies and adjustment of university and postgraduate curricula to the standards of EU universities. This process has obviously achieved the department of Legal medicine. Thus, based on the proposal of Mr. Andrei Pădure, in 2009 a new discipline *Medical law* was implemented. This course is a part of university curricula at the Faculty of Medicine, Public Health, Dentistry, and at the postgraduate specialization in Surgery. For this course, Mr. A. Pădure developed and proposed lectures, situational problems, tests for current and final evaluation. For this purpose, he

used the results of his scientific research within Doctor habilitatus thesis, approved in 2011.

Now, the Department is represented by Professor Gheorghe Baciu, Associate Professors Andrei Pădure, Valeriu Tetercev, Vasile Șarpe, University lecturers Andrei Serbulenco, Eduard Lungu, Anatol Bondarev and Alexandru Chistol. During the 69 years of the Department existence, its staff conducted all kinds of activity: educational, scientific, methodical and clinical.

Annually, about 1200 students from Medical Faculty (80 hours (50/30)), Public Health (70 hours (56/14)) and Dentistry (30 hours (20/10)) study 2 disciplines: *Legal medicine* and *Medical law*. Studies are conducted in Romanian, English, Russian and French. Also, diverse courses of continuing medical education are conducted, involving the forensic pathologists in the country.

Since the foundation, scientific researches of the department staff resulted in 4 Doctor habilitatus theses, 17 PhD theses, 16 master theses, 31 students diploma theses and over 1000 scientific articles. Currently, under the guidance of Mr. Andrei Pădure continues scientific research within PhD thesis Mr. Anatol Bondarev. His research tries to solve the problem of

clinical diagnosis making quality in mechanical trauma in order to improve the medical care. This study is carried out within the new scientific direction of the department – *Assessment of medical care quality*. This scientific approach fits perfectly both to one of the objectives of legal medicine as the science, and to the actual trend oriented to improve our knowledge in medical law area, an important one for contemporary physician.

The editorial activity of the department staff should be mentioned particularly. Thus, 14 textbooks and course materials, 27 monographs, 14 practice guidelines and methodological recommendations were published since the foundation. The chair staff is involved in activities of the Centre of Legal Medicine and performs a considerable number of the most complicated expertise, actively participating in consulting of practitioners and specialists.

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3. Baciu Gh. Evoluția medicinei legale pe plaiul basarabean. Chișinău, Ed.: Tipografia Centrală, 2013, p.184-207
4. Ungurean S. Medicina legală. Chișinău, Ed.: Știința, 1993, p.4-6



From left to right: lower line – Gheorghe Baciu, Andrei Pădure, Valeriu Tetercev; upper line – Andrei Serbulenco, Vasile Șarpe, Eduard Lungu, Alexandru Chistol, Anatolii Bondarev

HO-02**History of scientific research in legal medicine in the Republic of Moldova***Gheorghe Baciu**Department of Legal medicine, SUMPh "Nicolae Testemițanu"
Chișinău, Republic of Moldova*

The oldest information with medico-legal aspect, found on the present territory of the Republic of Moldova, refers to the age of Decebal (87–106 AD). In the Roman Empire, when the territory of Moldova was the northern its part, state law provided cadaver examination which aim was to determine the cause of death and to describe injuries. Information in this direction is missing during Slavic and Tartar invasion periods (VI–VII centuries). Only in 1475 a foreign doctor was invited to examine Stephen the Great's wound, caused in a fight near Kilia. He completed a written description of that wound.

Some rules with medico-legal character appear for the first time into Vasile Lupu's Rules (1646), which included many forms of expertise in case of poisoning, injuries, defloration, etc. and some recommendations for punishment depending on the consequences of the injury. By the decision of the Ruler, from 1777 was introduced the post of the city-doctor (police doctor), but on 22-nd June, 1811, Moldova's Divan (the name of parliament at that time) allows to "open cadavers of those who died through a violent death". In 1837, Gheorghe Cucereanu (originating from Moldova) approves in Vienna the PhD thesis in Medicine titled "*De infanticido*".

During the tsarist occupation, many doctors from Bessarabia (N. Alfeevski, L. Marovski, A. Cotsovski, I. Varzari, N. Doroshevski, T. Ciorba, etc.), participated to different international forums with reports on medico-legal issues. At the Second Congress "N. Pirogov" of doctors from Russia (1887), Axente Korceak-Cepurkovski, the Head of Regional Moldovan Sanitary Bureau presented a comprehensive scientific report on the theme: "Regarding general problems in medico-legal activity and especially those of the region".

By the beginning of 50-s of the XX-th century medico-legal scientific activity in Soviet Republic of Moldova was essentially enlivened by Petru Areshev,

who was the head of the Department of Legal medicine within Medical Institute from Chisinau and the director of the Republican Bureau of Medical Legal Expertise. Based on his proposal, in 1956, the Republican Scientific Society was organized; original school of legal medicine was founded. Later, his main research topic "The relationship between preexisting diseases and trauma" was recognized as one of priorities in the whole Soviet Union. These scientific aspects were studied by his disciples: N. Volcov, P. Maximov, Gh. Botezatu, M. Kazarnovsky, Gh. Baciu, Gr. Mutoi.

During the period between 1968 and 1993, under the supervision of Professor Gh. Botezatu were performed researches in forensic thanatology, which represented the base of five PhD theses (S. Ungureanu, V. Tetercev, A. Nastas, E. Balitsky, I. Cuvshinov) and two monographs.

Since 1970, university lecturer Gh. Baciu, continue researches on the topic "Forensic expertise of non-penetrant injuries of thorax". The study was based both on scientific analysis of real cases from forensic practice and experimental modeling of injuries caused in certain conditions of application of dynamic force (in Moscow) and compressional one (in Chisinau). This research was performed using special equipment, with a particular possibility to record the force and speed of action on chest. Scientific results of this research were published in the Doctor habilitatus thesis, two monographs and over 60 articles. Even after such a great research, most studies were focused on fundamental issues of trauma and violent death, which are specific for medical legal activity.

In 1995, the head of the Department of Legal medicine, Professor Gh. Baciu, proposed unification of all the researches into one scientific direction: "Etiology and pathogenesis of violent death and developing of forensic expertise criteria". Studies in this direction were started by associated professor

S. Ungurean, forensic pathologists A. Susanu, A. Siloci and Tatiana Guritsencu (Yashi), later by masters in legal medicine Vasile Sharpe, Andrei Padure, Ion Spataru, Ehab Mter (Palestine), Aurel Vicol, Victor Odovenco, Eugen Grinceshen, Oleg Yakimov et al.

In recent years, department of Legal Medicine initiated a new direction of research, regarding the quality of medical care and patients' rights. In this framework the course of Medical Law for students and residency doctors and Doctor habilitatus thesis were developed by associate professor Andrei Padure. Young university lecturer Anatol Bondarev started his research under the guidance of the head of the department of Legal medicine, associated professor, Doctor habilitatus Andrei Padure.

During our department history, 4 researchers, doctors, university lecturers approved their theses of Doctor habilitatus in medicine. They are Petru Areshev (1964); Gheorghe Botezatu (1973); Gheorghe Baciu (1983) and Andrei Padure (2011). Another 17

researchers obtained PhD in medicine. 28 monographs, nine textbooks and guidelines for future doctors, teachers and lawyers were published. 12 patents (by Gh. Baciu and A. Siloci) were approved.

In the period of 1955–2014 14 collections of scientific papers were published; four conferences with participation of scientists from other countries were organized. Scientific Society (presided by Petru Areshev, Nadejda Volcov, Adrian Kurdiunov, Gheorghe Botezatu and Gheorghe Baciu) had the highest value in the period between 1960 and 2001, but because of huge possibilities of access to scientific information in contemporary world, especially through Internet, its importance was essentially reduced, not only in legal medicine. However, in recent years, international scientific collaborations were supported by the head of the Department of Legal Medicine of State University of Medicine and Pharmacy "Nicolae Testemitanu", Doctor habilitatus, Andrei Padure.

HO-03

Role of the Centre of Legal Medicine according to its regulation

Ion Cuvșinov

Centre of Legal Medicine, Republic of Moldova

According to the Law No.1086 at 23.06.2003 on Judicial expertise, technical-scientific and medico-legal findings in the Republic of Moldova, judicial expertise system consists of numerous structures in the framework of Ministry of Justice, Ministry of Health, Ministry of Interior, Ministry of Defense, Information and Security Service, Center for Economic Crimes and Corruption Combating. Forensic medical service in the Republic of Moldova is exclusively represented by the Centre of Legal Medicine. The Centre was founded by order of the minister of Health on 01.10.1951. The leadership of the Center of Legal Medicine is carried out by the director and the deputy director.

On the 4th February, 2010, on the base of the Governmental Decision no. 58, the Regulation of the Centre of Legal Medicine which is in force until today

was approved. Proper respecting of the Regulation is the main condition to ensure the central role of the Centre as the pillar of the forensic medical service in the Republic of Moldova.

According to p. 1 of the Regulation, the Centre of Legal Medicine is a public institution within the Ministry of Health, specialized in medico-legal expertise. Paragraph 2 specifies that the Centre is a legal entity with all the rights and duties provided by law, it has a seal with the State Emblem and banks accounts.

Chapter II fully reflects the role of the Centre, its mission, main functions, duties and rights. Firstly, the content of p. 4 specifies the main role of the Centre: "... The Centre's mission is to contribute to the justice achievement by conducting forensic medical expertise."

No less important are the basic functions of the Centre (p.5):

- 1) Participation in development of strategies in legal medicine and their implementation;
- 2) Contribution to the development of normative acts in field of judicial expertise;
- 3) Ensuring a uniform practice of legal medicine in the country;
- 4) Ensuring the provision of qualitative medico-legal services;
- 5) Performing other functions.

The Centre has enough large rights (p.7) in order to assure various possibilities of development:

- 1) to ask from the person or law enforcement agents who have ordered a forensic expertise to create the necessary conditions, including the payment;
- 2) to conduct scientific activities;
- 3) to submit to the Ministry of Health amendments to laws and other normative acts which regulate the Centre's activity;
- 4) to submit to Ministry of Health proposals concerning funding of various development programs of the Centre;
- 5) to get investments by developing institutional projects;
- 6) to change with the consent of Ministry of Health the organizational structure of the Centre;
- 7) to have collaboration, scientific and practical relationships with similar institutions in the country and outside it, with organizations practicing tangent activities to forensic medicine, including the training and medical continuing education on base of agreements, conventions and treaties.

In this context, the Centre's functions should be mentioned (p.6). The functions have their main role to increase constantly the quality of forensic medical expertise:

- 1) to perform forensic medical expertise, according to the legislation;
- 2) to ensure the participation of Centre's experts in procedural actions;

- 3) to identify priority issues in forensic medicine, taking measures to streamline the Centre's activity and ensure quality control of forensic services;
- 4) to establish and implement rules, regulations, instructions forensic medical expertise;
- 5) to participate in the development of regulations, instructions regarding the forensic expertise;
- 6) to perform quality controls of forensic medical expertise reports;
- 7) to organize with the Ministry of Health, scientific conferences, theoretical and practical seminars for experience exchange with in order to raise the professional level of forensic medical experts;
- 8) to improve the quality of healthcare by participating to clinical-anatomical conferences and informing the Ministry of Health about identified mistakes;
- 9) to ensure medical continuing education and professional testing of forensic medical experts;
- 10) to provide equipment for the Centre's departments;
- 11) to keep the approved forensic documentation, submitting statistical reports and financial accounting as required by law.

The Centre of Legal Medicine includes republic departments (department of medico-legal commission expertise; toxicological, biological, histological and criminalistics laboratories), located in the capital city (Chisinau); and territorial departments, located in the centers of administrative-territorial units of the republic and municipalities (total number of departments is 28). Each territorial department serves police station, prosecution, court and population of the administrative-territorial unit. Within these territorial departments are examined both alive persons and cadavers, and their medical documents. Medico-legal laboratory research is performed only within republican specialized departments. All the units of the Centre of Legal Medicine, including territorial ones, are subordinated vertically to the director of the center.

HO-04

Indicators of the Center of Legal Medicine activity

*Ion Cuvșinov, Andrei Pădure, Constantin Ciorba
Center of Legal Medicine, Republic of Moldova*

Forensic medical services to the population of the Republic of Moldova, except regions from the left side of the Dniester river, are provided by the Center of Legal Medicine through 30 regional departments and 5 republican ones. From the whole number of departments, 28 of them are located inside the regional hospitals and two – together with those from Chisinau municipality.

Geographically, the Republic of Moldova is located in southeastern Europe, bordering with Romania to the west and Ukraine to the north, east and south. The total area of the country is 33,845 thousands sq. km and, according to official data, from the 1st January, 2014 number of its population is 3,557,634 inhabitants.

In recent years (1992–2013) the number of expertises carried out by the Centre of Legal Medicine gradually increased. According to the Table 1 we can see that number of commission expertises increased approx. 3,5 times, number of forensic autopsies – approx. 1,5 times and histological investigations – about 1,3 times. In this aspect, it is to note that number

of commission expertises increased due to its abusive ordering as a result of people’s disagreement with conclusions, high number of cases regarding medical care and unjustified ordering by the prosecution. The number of forensic autopsies (Table 3) increased due to 59% of non-violent deaths; most of them aren’t subjects of legal medicine. This situation is caused because a lot of people are not adequately supervised by family doctors, who avoid taking the responsibility for issuing the medical certificate of death, or for sending corpses to the pathological examination in order to establish the cause of death. Due to provision of modern equipment (tissue processor, paraffin embedding, automatic staining line, etc.), the department of histological investigations increased its functional capacity and number of investigations.

It is obvious that the increased volume of investigations significantly grew the expert’s charge (Table 1). Thus, the current expert’s individual charge is as follows: in regional department – 400 examinations on living persons (including medical records) and 80 forensic autopsies; in department of

Table no. 1

Number and dynamics of forensic investigations

| Year | 1992 | 1997 | 2002 | 2007 | 2011 | 2012 | 2013 |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Expert staff | 113 | 100 | 104 | 109 | 114 | 114 | 115 |
| Examinations of alive persons | 28111 | 38572 | 32413 | 32379 | 32219 | 32678 | 30618 |
| Forensic autopsies | 5736 | 6548 | 7261 | 9246 | 7820 | 8064 | 7565 |
| Commission expertise | 138 | 141 | 250 | 416 | 509 | 517 | 482 |
| Histological investigations | 2326 | 2312 | 2593 | 2628 | 2734 | 2900 | 3200 |
| Biological investigations | 41990 | 38488 | 45640 | 50471 | 53532 | 50105 | 52990 |
| Toxicological investigations | 4431 | 6125 | 5364 | 6915 | 8661 | 9686 | 9690 |
| Criminalistics investigations | 277 | 219 | 138 | 205 | 243 | 261 | 284 |

Table no. 2

Number of investigations in 2013 relative to the approved charge

| Objects | Number of investigations | Total charge | Extra charge | |
|---|--------------------------|--------------|--------------|----------------|
| | | | nr. | % |
| Examinations of alive persons | 30618 | 24975 | + 5643 | (+) 23 |
| Forensic autopsies | 7565 | 5182 | + 2383 | (+) 46 |
| Commission expertise | 482 | 330 | + 152 | (+) 46 |
| Histological investigations | 3200 | 1900 | + 1300 | (+) 68 |
| Biological investigations | 52990 | 24937 | + 28053 | (+) 112 |
| Toxicological investigations (full tests) | 1006 | 619 | + 387 | (+) 62 |
| Criminalistics investigations | 284 | 188 | + 96 | (+) 51 |

commission expertises – 50 cases; in Chisinau thanatology department – 150 autopsies and in Chisinau clinical department – 1500 examinations; in histological laboratory – 400 investigations, in criminalistics – 50 researches, in biological laboratory – 1750 objects and in toxicological one – 55 full tests.

Table 2 shows the number of forensic researches carried out during 2013 related to the total experts' charge. So, we can see a significant number of extra charge investigations, which range from 23% up to 112%.

Analysis of the autopsies structure during the last three years (table 3) shows a stable ratio of violent (approx. 39%) and non-violent death (approx. 59%). In our opinion this unnatural for forensic services disproportion is alarming because it means massive forensic doctors overused and their unjustified involvement in pathological investigations. At the same time, this situation causes wasteful use of the Center's of Legal Medicine budget, wasted in organizing and

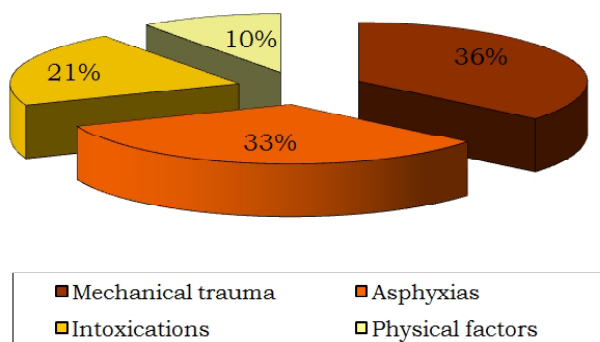
performing the autopsies, and laboratory researches. Due to these reasons, in the draft of new law on judicial expertise and expert's status Center of Legal Medicine proposed to amend the current payment mechanism (from the Center's budget) and put in charge of those who orders expertise all the expenses related to its performance. We believe that this change will increase the prosecution's discipline and will reduce the number of unjustified disposed expertises.

The structure of violent death during the last three years is shown in Img. 1. It shows that mechanical trauma is on the first place (36%), prevailing road traumas. This can be explained by both high mechanization of contemporary society and considerable increase of the vehicles number in the country. Injuries due to sharp objects and firearms have only a small ratio. Mechanical asphyxia maintains the second place (33%) and is represented mainly by hanging and drowning, being subsequently followed by other forms. Poisoning is placed on the third place

Table no. 3

The structure of autopsies performed by the Center of Legal Medicine during 2013 in comparison with 2011 and 2012

| Death structure | 2011 | | 2012 | | 2013 | |
|------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Autopsies | (%) | Autopsies | (%) | Autopsies | (%) |
| Violent death | 3083 | 39,43 | 3106 | 38,52 | 2931 | 38,75 |
| Non-violent death | 4566 | 58,39 | 4778 | 59,25 | 4439 | 58,69 |
| Cause of death unestablished | 171 | 2,18 | 180 | 2,23 | 195 | 2,56 |
| TOTAL: | 7820 | 100% | 8064 | 100% | 7565 | 100% |



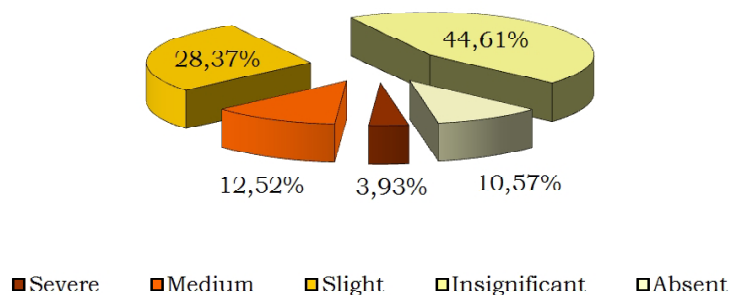
Img. no. 1. The structure of violent death

(21%), being represented mainly by alcohol intoxications. Death due to physical agents action was less frequent (10%), being caused by hypothermia and electrical trauma.

Clinical activity of the Centre of Legal Medicine is represented by examinations of living persons and those based on medical documents. The most common issue in this case is assessment of injury severity. This task is performed on base of the Rules for medical legal assessment of injury severity, approved by Ministry of Health (Order no. 199 from 27.06.2003). According to these rules there are four degrees of injury severity (serious injury, medium, slight and insignificant). Severity is established on base of following criteria: danger to life; not dangerous to life consequences (complete blindness, complete deafness, anatomical loss of an organ, irreparable disfigurement of the face, etc.), volume of permanent incapacity to work and term of health disorder. The most common injuries were assessed as slight ones (44,6%), being represented by superficial soft tissue injuries (see Img. 2). When injury severity increases, its ratio decreases essentially. The injuries were assessed as severe only in 3,93% of cases and were qualified as dangerous

to life. We would want to note that in 10,57% of cases any injuries were not established, usually due to belated addressing and the absence or insufficient description of injuries in medical files.

In conclusion, we live in a society that is changing rapidly and requires new conditions of professional activity. This phenomenon involved the Center of Legal Medicine too. Number of researches carried out by the Centre significantly increased in recent years in relation to charge and existing staff. Mostly, this situation is generated by unjustified expertise ordering by law enforcement and gaps in healthcare system. Therefore we are forced to identify effective solutions to improve the situation. One way is to put in charge of those who orders the expertise all the expenses related to its performance. It should be noted that this mechanism operates successfully in the European Union and has been included in the draft of new law on legal expertise and judicial expert's status. This law is part of the Justice Sector Reform Strategy and already was approved by the Government, but it should be discussed and approved by the Parliament. We hope that the Parliament will support this initiative to reduce unnecessary activities of the Centre of Legal Medicine and to improve the economic situation of the institution.



Img. no. 2. The structure of injuries based on the severity

HO-05**The New Romanian Penal Code and its impact on medico-legal activity***Harald Jung**Institute of Legal Medicine Tîrgu Mureș, Romania*

Starting February 2014, a new penal code and penal procedure code became effective in Romania, replacing the penal code from 1968. Changes have been made to definitions of crimes related to person's physical integrity and health, but also to procedures concerning medico-legal means of proof.

In the domain of clinical legal medicine the main criterion for evaluation of injuries severity (period of medical care necessary for healing) was used to modify the threshold in definition of moderate and severe injuries, raising it from 60 to 90 days, while the former threshold of 20 days was entirely eliminated. Other criteria used to define severe injuries have been changed in order to comply with modern medical terminology, to underline the nature of harm (the case of "permanent and severe esthetical prejudice") or to eliminate redundancy of terms (loss of an organ is assimilated to infirmity).

In case of forensic autopsies, the legal provisions concerning the situations when a medico-legal

autopsy must be ordered was maintained as in the old penal law and completed with the phrase "when there is a reasonable suspicion that death was directly or indirectly related to a crime". Family of the deceased has the right to appoint a private medico-legal expert that may participate in the medico-legal autopsy. On the other hand, it is forbidden to the physician that treated the patient to assist at the autopsy.

Definition of neonaticide has been changed, the criterion of mother's "birth-related disorder" was turned into simply "mental disorder" and a limit of 24 hours after birth was set.

Almost all medico-legal works, including autopsy reports, are now considered experts reports, the main exception being the medico-legal certificates performed at personal request.

Key words: medico-legal reports, penal code, Romania

SECTION 2. CLINICAL CASE PRESENTATION



CP-01

A case of accidental hanging

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In most of cases, hanging represents suicide. Cases of homicide due to hanging are quite rare and usually occur in victims who cannot resist (children, sick or pronounced drunk persons). Accidental hangings, however, are possible especially in children, the elderly or drunk people.

The case presented below illustrates this possibility.

A citizen of 74 years lived alone in his own house. He was seen being drunk walking in the yard at approximately 11 o'clock PM. He was found by his son suspended from the fence the next day at around



Img. 1. Anterior aspect.



Img. 2. Posterior aspect.

7 o'clock AM. His neck was tightly clamped between fence pickets (sticks); his legs were bent at the knees. The fence height was 110 cm, and the distance between its pickets was sufficient to insert the neck of a man. At the external examination of the cadaver a discontinued mark (groove) on the anterolateral surface of the neck was found. It has an aspect of

excoriated bruise, situated obliquely, with subcutaneous hemorrhages.

It was concluded that death was caused by mechanical asphyxia due to strangulation of the neck between the fence pickets under the pressure of body weight. The criminal investigation found that the deceased, being drunk, occasionally got into this situation.

CP-02

Nails hit into the skull with criminal aim

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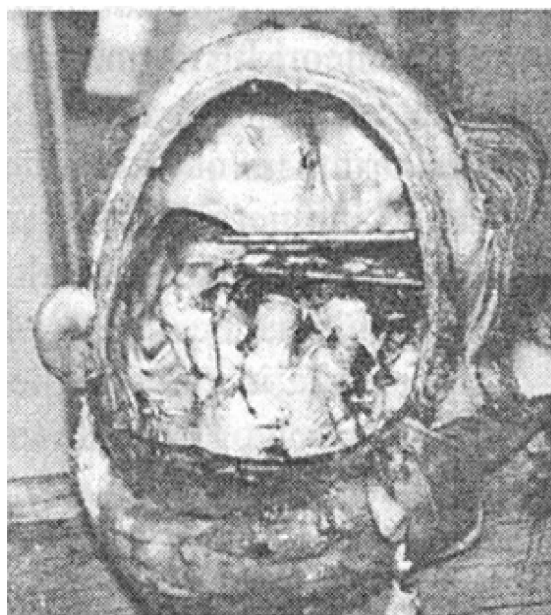
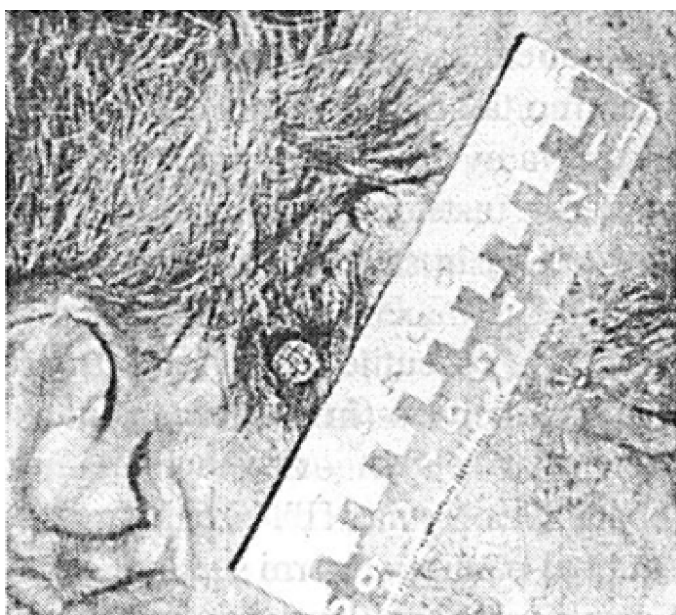
Most wounds due to sharp objects and instruments are accidental. Some of them, however, are produced with suicidal or criminal purposes. The case presented below illustrates such a situation.

Winter, cit. I., 49 years, was found dead in a shed in the vicinity of his home. Head, face and clothes were bloody, however, any external injuries were not found at the death scene. Frozen body was sent to forensic expertise.

At the external examination of the cadaver, two nail heads that fully penetrated the cranial cavity were found in the right temporal region, between bloody

hair. Purple colored bruises on the lower lip, on the right arm and right leg were described.

During the internal examination, after separation of the skull cap (calvaria), two nails, 15 cm long, penetrating the soft tissues, right temporal bone, meninges, passing through the center of the right cerebral hemisphere and reaching the left optical thalamus were observed. Into the brain ventricles and injury channels collections of frozen blood were determined. On the stomach mucosa petechial bleeding were found (Vishnevsky spots).



From the data of the criminal investigation: the victim was a chronic alcoholic, during many years terrorizing his family, vagabond. Cit. I. went out in the yard, shouting and pounding on the door and windows after a family conflict with aggressive actions against his wife and adopted daughter. In a

state of anger, adopted daughter came out, knocked him to the ground and hit with a hammer a nail in his head, then another. Then she put him in a sled and transported to the shed in the neighbor's yard, where he was found dead. The neighbor informed prosecution about this case.

CP-03

Superior sagittal sinus thrombosis – case report

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Abstract

Dural sinuses are venous channels that drain blood from the brain. Dural venous sinuses located between the outer skins and internal foil dura mater, are real spaces, lined with endothelium, which functions as veins particular morphology. Superior sagittal sinus thrombosis is an uncommon cerebrovascular disease

and is associated with diseases that may contribute to the development of thrombosis through hypercoagulability, decreased local blood flow and vessel wall abnormalities. We report the case of a male patient who died of superior longitudinal sinus thrombosis progressive

Key words: dura mater - venous sinus – thrombosis

CP-04

Two steps examination of rape cases

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Offenses against sexual life of the person always represent a separate group of crimes. From the spiritual point of view, they are related to the most intimate moments of the victim and result in a huge mental trauma. When minors are victims of sexual assault, the consequences of trauma have an impact on their lives. From the procedural point of view, this type of crime often presents difficulties for the prosecution. Forensic conclusions in this situation become very important, if not decisive, and discovery of the crime largely depends on the quality of expertise. There are different guidelines for

examination of sexual offenses victims. Most of the sources underline that forensic examination of the victim is an emergency for both virgin women and those with sexual intercourses in anamnesis. In our opinion, an emergency gynecological examination may not provide in each case the full spectrum of signs of sexual intercourse. From this point of view it may be necessary to repeat the victim's examination in order to observe the evolution of sexual intercourse signs and to obtain all its evidences. The case presented below eloquently illustrates this opinion.

For the forensic examination a minor G, 16 years old female, was presented, who said that on the 3-rd May she was maltreated and raped by four unknown persons. She had complaints about the pain in kicks regions: head, neck, upper and lower limbs. She denied any sexual intercourses, pregnancies, abortions, births. She did not apply hygiene measures before the examination. The degree of physical development corresponded to the mentioned age. Gynecological examination: genitals were developed correctly, labia majora partially covered labia minora, vaginal vestibule mucosa was pink-colored and the entrance to the vagina was free. Abundant whitish-gray and moderate hemorrhagic eliminations, impurities (leaves, sawdust) were determined. The hymen was red-colored, edematous, had the appearance of “closed flower petals”, confluent on its top; the height of its anterior portion was 0,7 cm and its thickness was about 0,6-0,8 cm. An oval dark purplish colored bruise with dimensions about 0,2×0,5 cm and oblique orientation was found between “10” and “11” (according to the clock dial). More detailed examination of the hymen at that time was impossible because of pronounced posttraumatic edema and manifest pain. For this reason a supplementary examination after 5 days was indicated.

The patient was presented for supplementary examination on the 7-th May. Signs of inflammation

were regressing, the hymen was pink-colored, consisting of three lobes, with the appearance of “flower petals”, rolled outside, free margins were relatively steady, confluent on its top; the height of its anterior portion was 0,5 cm and its thickness was about 0,2-0,4 cm. Natural notches of the hymen were determined at “12”, “5” and “8”. The hymen hole had a diameter of 0,7 cm, expandable up to 2,5 cm. At “5” a linear, 2-3 mm long rupture of the hymen with a radial direction was established. It didn't get to the bottom of the hymen, had a sharp apex, relatively regular edges and soiled with whitish fibrin. So, a recent (3-4 days), incomplete rupture of the hymen was diagnosed. It should be noted that in the vaginal content taken from minor G spermatozoa were found.

In our view, the presented case is demonstrable because of examining methodology of sexual offenses victims. It's known that virgin defloration is an indisputable argument for investigation, so conclusions based only on primary examination may result in some cases in losses of objective evidence of the crime. According to the literature, defloration finding can be ensured only through an emergency gynecological examination. However, it is rational and we recommend gynecological examination in two steps in cases when the primary examination has some objective difficulties.



Img. 1. The hymen and vaginal vestibule aspect during primary examination.



Img. 2. The hymen and vaginal vestibule aspect during supplementary examination.

CP-05**Difficulties in establishing a cause of death in elderly – case report**

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Abstract

We report the case of a 75 year old female patient which is presenting an amputation of the right leg (above the knee) as a consequence of a train accident which took place 20 years ago. Before the last hospitalization, the patient has been bedridden due to cardiac pathology. She is brought into the hospital by her family with visible abdominal symptoms (diffuse pain, nausea followed by vomiting, etc.). The forensic autopsy has shown that the cause of death was bone marrow embolism consecutive to the detachment of a bone fragment from the amputation stump. Most

probably this fracture was the consequence of a preexisting bone pathology (such as osteoporosis). Therefore it is possible that the fracture crack path was produced during the time when the patient was being moved or as a result of a minor traumatism that has not been noticed neither by the family or the physician. The importance of the case revolves around the idea that usually, in the situation of elderly patients with multiple illnesses the real diagnostic (Cause of death) could easily be ignored even at a detailed examination.

Key words: embolism, bone marrow, autopsy

CP-06**Water intoxication with coexistence of gastric and abdominal wall rupture**

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We report a case of water intoxication associated with ingestion of large amounts of potable water by application of shower pipe in her mouth. Special apparatus prolonged to the stomach, gastric and abdominal wall rupture due to application of plastic pipe and hydrostatic pressure effect is extremely rare event in medico legal literature. Self-induced water intoxication was firstly described in a hospitalized patient with schizophrenia in 1940's. In the medico legal literature often reported in patients with psychiatric disorders, the entity was also declared among victims of child abuse, torture, drug abuse and in iatrogenically induced forms. Presented case was a 38-year-old woman with history of psychiatric disorder. She was found dead in her bathroom, lying

necked in the empty bath tub in backyard position. Investigation documents exposed that the 144 cm long plastic pipe of shower apparatus was applied as endoscopic tube in her mouth, described by police crime scene investigators. Local prosecutor evaluated the case as suspicious and sent the victim to our center for autopsy. On the autopsy examination, victim was 160 cm tall, 65 kg in weight woman. Gross examination revealed severe body edema, swelling of the face and whole body was inspected, small ecchymoses on lips, fresh bruises on anterofemoral regions, cutis anserina, petechial bleedings on face, arms and anterior chest wall were observed, and 20 cm laceration area with irregular edges on low abdominal wall, with protruding intestines were

detected. On internal examination, left and right lungs weighed 800 gr and 700 gr respectively, with Paltof spots on surfaces and severe edema at the dissection. Watery intraabdominal fluid collection more than 2000 ml was observed, small perforation area with ecchymotic edges on gastric major curvature, laceration area and continuing dermal detachments, subdermal pouches, filled with water were detected bilaterally on inguinal and anterofemoral regions. Pyknotic neurons, cardiac myocytes with vacuolated

cytoplasm, severe pulmonary and dermal edema were reported on histopathological microscopic examination. Urine and blood toxicologic analyses could not detect any substance. Death was reported due to water intoxication with coexistence of gastric and abdominal wall rupture by application of plastic pipe and hydrostatic pressure effect. We aimed to present rare case of water intoxication and discuss the autopsy findings.

Key words: Water intoxication, forensic, autopsy

CP-07

Death due to wasp sting

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A wasp/bee sting is potentially dangerous event. Allergic reaction to bee venom can vary from one person to another. The severity and duration of allergic reaction is strongly related to the location and number of bee stings, moreover previous history of allergic reactions may increase possibility of a life-threatening condition, however most cases manifest with local non-serious allergic reaction. A 34-years old farmer, who had history of allergic reaction to bee sting according to his relatives, was found dead in the forest near to his farm. After crime scene investigation of attorney general, the death was declared as suspicious and forensic autopsy was performed to determine the cause of death. Deceased was 165 cm tall, 80 kg in weight man. There were no gross traumatic changes detected on external or internal examination. Only

0,4cm in diameter hyperemic area on the neck, and petechial bleedings on the shoulders were inspected. On the macroscopic autopsy investigation small hemorrhagic area was detected on the dermal area of the neck after dissection, pulmonary edema and swelling in laryngeal area were found as the internal organ findings. Histopathological examination revealed sever congestion and edema in the all organs, dermal biopsy from the neck revealed fresh hemorrhage, laryngeal microscopic sections exposed severe edema. Toxicological, urine and blood analysis were in normal ranges. Autopsy findings and crime scene investigation evidences obtained were evaluated together and, the cause of death was declared as an anaphylactic shock due to bee sting.

Key words: Wasp/bee, sting, forensic, autopsy

CP-08**Life-saving or life-threatening? Extreme CPR injuries**

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Cardiac arrest is a life-threatening condition which requires fast cardio-pulmonary resuscitation (CPR). However, this life-saving maneuver may lead to severe injuries of the internal organs. The authors present two cases of CPR which led to extensive injuries of the liver and heart. These are two of the rarest CPR-related complications. In the first case, the patient was resuscitated while being transported by the ambulance. The autopsy showed extensive laceration of the liver and about 3500 ml of blood in the peritoneal cavity. In the second case, the patient was resuscitated for 1 hour and 40 minutes while attempting CT examination. The autopsy findings showed multiple ribs and sternum fractures, laceration of the pericardium and of the

anterior wall of the right ventricle. The literature review shows that the injuries during CPR may occur due to several factors such as duration of resuscitation, age of the patient, associated diseases and degree of qualification of the emergency personnel and will never be completely avoidable. However, they need to be recognized in order to apply medical treatment to the surviving patients. The forensic pathologists need to be familiar with this kind of injuries and able to distinguish them from trauma that occurred prior to CPR. More, severe post-CPR injuries bring to the attention of the forensic pathologist the issue of their implication in the death mechanism.

Key words: CPR injuries, liver, heart

CP-09**Syndrom of inappropriate antidiuretic hormon secretion in surgical context—clinical and medico-legal considerations**

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Hyponatremia, defined as the decrease of the seric natrium under 135 mmol/l, is the most common electrolyte disorder in clinic, being diagnosed in about 15-30% of all hospitalized patients. The acute severe hyponatremia may cause important morbidity and mortality mainly because it is often poorly understood as the clinical focus is placed on the underlying disorders. The syndrom of inappropriate antidiuretic hormon secretion (SIADH) is a possible etiologic

condition of hyponatremia, being caused by various diseases but also by surgical interventions, fear, pain, and emotions. In this paper the authors present the case of a 28 years old women, mother of six, who underwent a plastic surgery intervention. The intervention lasted for one hour and a half, under general anesthesia. At the end of the intervention the patient regained her consciousness and breathed spontaneously but during the next hours she showed

nausea and vomiting which were symptomatically treated. Despite the treatment, the nausea and the vomiting persisted and the patient became restless during the night being treated with sedative medication. In the morning, after less than 24 hours from the surgery, the patient was still restless, with nausea, vomiting, followed shortly by convulsions and apnea. After cardio-pulmonary resuscitation the patient remained comatous, sustained several cardio-respiratory failure episodes and died the next day. The biochemical analysis performed the next day after the surgical intervention showed severe hyponatremia (116 mmol/l). The autopsy revealed massive cerebral edema which was also confirmed by the histologic

examination. Based on the clinical, biochemical and autopsy findings it was concluded that death was caused by quickly installed severe hyponatremia which determined cerebral edema and death. The analysis of all the medical documents lead to the conclusion that most probable the cause of hyponatremia was the inappropriate antidiuretic hormone secretion triggered by the surgical intervention. This case raised medico-legal issues due to the limited and unspecific macroscopic and microscopic findings but also regarding possible deficiencies of the medical care during the immediate postoperative period.

Key words: hyponatremia, SIADH, surgery, death, autopsy

CP-10

Identification of blunt object in cranio-cerebral trauma

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Cranio-cerebral trauma due to blunt objects represents a particular interest to the judicial practice, because the majority of them occur in heteroaggression purpose and identification of the vulnerable object is one of the main problems of forensic medicine.

Therewith, the solution of these problems brings a set of difficulties that are related to the variety of used blunt objects, the particularities of interaction surface, which requires accurate study of the mechanisms of production in order to present objective evidences and to establish the circumstances of the event. In this context, we consider it appropriate to present a case from our practice.

The prosecutor informed us by the ordinance of cadaver examination, that the corpse of person G., 42 years, was found buried in the cellar of his house at a depth of near 40cm, being in an advanced state of putrefaction. During criminal investigation of the case the wife confessed her sins and affirmed that 4-5 month ago she together with a paramour killed her husband by 1-2 blows with the poll of an axe.

After trauma the husband was unconscious for a short time while the aggressors have thrown the body head down into a dry well with the deep of 8-10 meters. In few days assaulters have removed the body from the well and buried him in the cellar. The wife said that after the blows her husband was alive, and death can occurred from falling into the well.

At the forensic examination of the cadaver, the skull was prepared and inspected using methods of macroscopic examination in situ and after preparation, stereomicroscopic, restoration. We have established that the death had occurred near 3-4 month ago as a result of head trauma with open comminuted fracture of the cranial bones.

The comminuted fractures of the skull vault bones were located mainly on the right side with spreading of linear fracture to the skull base and facial skeleton and they were caused by the multiple traumatic actions (no less than three strokes) of a blunt hard object with a limited surface of interaction, like the poll of the axe head presented for investigation.

Furthermore, according to the interdependence and combining of the morphological signs of compression and extension of tissue on the edges of bone fragments, we testified about the initial local deformation and subsequent general one, which allowed us to exclude the possibility of occurrence of head trauma as a result of throwing into the well and falling on the vertex of the person.

Thus, it was demonstrated that the murder was produced by multiple actions on the head with a

blunt object with limited surface of interaction and it shows that it is rational to use not only macroscopic research method *in situ*, but it is necessary to practice supplementary investigations for the identification of the vulnerable object, especially in case of advanced putrefaction, as well as for an answerable elucidation of the circumstances, the mechanism of producing the trauma, and a correct medico-legal diagnosis and conclusions based on objective data.

CP-11

Lethal injury produced by a rooster

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We all know that our world is far from unsafe. According to statistics of the World Health Organization, more than 15 million people worldwide die or are injured each year by animals and plants.

Danger of a tiger, a lion or other wild animal is known to all, but there also happen cases of trauma caused by domestic animals. Such injuries are usually caused by big domestic animals like horses, cows or smaller as rams, dogs, cats, etc. Unusual and rare injuries are produced by poultry, especially fatal lesions. In this paper we present a case of fatal injuries caused by a cock.

The cadaver of a 77 years old woman was discovered home, at the entrance of the house, with signs of external bleeding. At the examination of the scene of death the traces of blood led to the chicken coop. All the way traces were represented by a lot of small stains alternating with some puddles of blood. There were some chickens and a rooster inside. Relatives said that the rooster was rampant. Long and sharp spurs were observed at the rooster and the right one was dirty of blood.

At the external examination of the corpse there was a laceration on anterior surface of the left leg with dimensions of 3x0.5cm. Beside there were two fresh bruises on the left leg with dimensions of 3x2cm and 6x4.5cm. During examination of the laceration the anterior tibial artery was discovered damaged.

All internal organs were anemic, which were demonstrated histologically. Inside de wound there were infiltrative haemorrhages composed by mass of hemolyzed erythrocytes, venous congestion, and leukocyte extravasation in the perivascular space. As background diseases were established the ischemic heart disease and the hepato-renal dystrophy.

The cause of death was an abundant external bleeding from the injured anterior tibial artery by a spur of the rooster. Given the presence of the additional two recent bruises on the same leg can assume that the rooster attacked the elderly person at least three times.

Prolonged bleeding was favored by the disturbances of coagulation, which were conditioned by the hepatorenal dystrophy. At the same time, due to age and heart disease, the person had moved slowly, which is confirmed by the presence of multiple puddles of blood on the scene of death. Hereupon, being home alone and unable to call for help, she lost the consciousness near the entrance to the house, where she died in 2-3 our hours.

As we see, a single lesion together with pre-existing diseases can lead to death and such injuries can be caused in different condition and dangerous can be every animal around us.

CP-12

Cardiac rupture due to a blank shot

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Injuries due to fire-arms are extremely varied and depend on many conditions, as traumatic factors, kind of firearm, distance of discharge, damaged tissues or organs, etc.

Usually, in fire-arm injuries, the decisive traumatic element is projectile that is called the main factor and lesions without its participation are less serious or minor. A greater diversity of lesions is found in case of using the handicraft firearms, which can be observed in the case presented below.

A 65 years old man was found dead in a field without evident signs of violent death. The cadaver was discovered after 2 days from the death, according to forensic establishment of postmortem interval.

Upper part of the body was dressed in a jacket, two sweaters and a singlet. The jacket was unbuttoned and intact, but on both sweaters and on the singlet there were burned holes in area of left-down side of the chest, with sizes of 2.5x3cm. At the external examination a rounded abrasion was established on the left side of the chest, at the level of the 4th intercostal space, close to the sternum. Abrasion was sized 2.8x3.5cm with a bruise around and unburned powder tattoo. Unburned powder also was discovered between layers of clothes.

At the internal examination there were diffuse hemorrhages in soft tissue of the chest under the abrasion. Thickness of fat tissue was near 2.5cm. Penetration in soft tissue and cavities or damages of the ribs not detected.

During the examination of the thoracic cavity and organs were revealed a contusion of the anterior surface of the left lung, hemorrhages in mediastinum and pericardium, and a cardiac rupture with pericardial tamponade. The inspection of abdominal cavity shows us a contusion of the diaphragm, insignificant contusion of the mezentrium, rupture and crash of the left lobe of the liver, and hemoperitoneum (300ml).

A quantity of 0.41‰ of alcohol was established by toxicological investigation of the blood. The medico-criminalistics examination confirmed the ballistic origin of the injury.

The cause of death was cardiac tamponade (100ml of fluid and 300 of clotted blood) together with associated trauma of the chest and abdomen.

The manner of death was supposed a suicide seeing that a handicraft gun was found not far from the cadaver at the scene of death and, according the case history, the man fought in the Afghanistan war and had mental disorders.

Thus, we observed that the action of the additional traumatic factors of the shot, such as flames, gas, in the absence of the main traumatic factor, can cause serious damages determined by the shell shock, the hydrodynamic effect, and using of a handicraft gun. If on the surface of the body was only an excoriation and burns of clothes sized near 2-3cm, than the internal examination showed us a lot of damages of the left lung, mediastinum, pericardium, heart, diaphragm, mesentery, liver.

CP-13**Death scene examination as a key element in medico-legal investigation**

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In homicide, suspected homicide, and other suspicious or obscure cases, the forensic medicine expert should visit the scene of the death before the body is removed. Local practice varies, but any forensic medicine expert should always make himself available to accompany the police to the place of death. Having the forensic medicine expert at the death scene has important purposes. By examining the body in the context of its surroundings, the forensic medicine expert is better able to interpret certain findings at the autopsy. For this reason, nonattendance at death scenes has been regarded as one of the "classic" mistakes in forensic pathology.

In this paper, the authors present the case of a 49 years old man who fell from a hayrick with a height of about 3 meters and suffered from an impact with a metal fence. The external examination showed

penetrating wounds on the right thigh but no important blood vessel was damaged. The cutaneous wounds had a characteristic aspect that pointed to potentially marker injuries determined by the metal fence elements. The internal examination revealed extensive liver laceration and massive hemoperitoneum of about 4500 ml blood, raising questions about the mechanism and the object which produced the liver injury. In order to explain the „surprise” abdominal injury, additional information concerning the death scene was requested. The death scene information and photos suggested that the liver laceration could be determined by the impact of the victim’s abdomen with a stump which was placed near the hayrick and allowed for a supposed adjunction with aggression to be excluded.

Key words: autopsy, death scene, injuries.

CP-14**Clinocomorphologic basis for diagnosis of diffuse axonal injury in head trauma**

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At the present day head trauma not only holds high mortality soon after the injury time (up to 40 - 50%), but also brings disabilities for the long term. From the wide range of brain damages, specialists consider to divide them into focal lesions (intracranial, subarachnoid, subdural, epidural, intraparenchymatose hemorrhages, brain dilacerations) and diffuse (contusion, diffuse axonal injury, cerebral edema).

The evolution and the unfavorable prognosis of the head trauma often depends on so-called diffuse axonal brain injury that occurs as a result of sudden angular or rotational movements of acceleration-deceleration of the head (e.g. car accidents, „shaken baby syndrome”).

Differentiation of the morphological or clinical forms of head trauma is of great importance in the practice

of forensic medicine and contemporary methods of diagnosis, allow a correct assessment of diverse morpho-clinical forms of head trauma.

In our case, the victim X. was beaten by unknown individuals and in the same day was admitted to the hospital. The data resulting of medical documents show us the following: the patient was unconscious, comatose, with reduced photoreaction, diffuse areflexia and muscle weakness, difficulty of breathing and heart rhythm. Status localis: a laceration and multiple bruises and abrasions on the head. Computed tomography displays a bilaterall higrom, C1-C2 subluxation, which decreased insignificantly in dynamics. During three weeks the patient was in a deep coma and had been observed vegetative disorders as hyperthermia, hyperhidrosis, hypersalivation. After then the death occurred as a result of the cardiac and respiratory depression and the reduction of the cerebral perfusion.

At the forensic examination of the body the experts found out a red-brown hemorrhage in the soft tissue of the head, in the parieto-occipital aria, with dimensions of 10x15cm. The skull bones were without fractures, contusions or other injuries in the brain tissue macroscopically was not detected.

Histological examination revealed embedded macrophages with hemosiderin and lipofuscin granules in the subarachnoid space, ballooning corpuscles form retraction (“retraction balls”), axonal varicosities and demyelination foci in the brain tissue.

This case demonstrates us that the macroscopic forensic examination of the cadaver in some situation is useless without further histological research of biological material, because macroscopicall lesion volume in the head leads to the impression of inadequacy of serious condition in the evolution of cranio-cerebral trauma, and just the overall analysis of the circumstances of the event, the clinical and pathomorphological data allowed to establish diffuse axonal injury.

CP-15

Forensic casuistry: a rare case of bodily injuries in the car cabin uncharacteristic for the car accident

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As practice shows, in the course of investigation of the facts related to the car accident, although rarely, but still we have to solve the question: Does the one try to fabricate true circumstances of the injury to the victims with the help of the car accident, to hide the fact of intentional cause of bodily injuries? A similar incident took place in our practice too.

On 02.12.2012 a car accident took place (collision the vehicle Geely and Mazda 323). In the context of this accident the front part of the car Geely and the back tight corner part of the car Mazda 323 collided. There was a family of 4 members in the car Geely, namely the driver, the passenger of the right front seat, the child sitting on the back right seat, and the victim, the citizen P., sitting on the back left seat behind the driver, who was belted. The collision was insignificant

by its intensity; during collision the driver of the car Geely wasn't injured, the passenger of the front seat received a scratch of the frontal region in the right. The child was not injured. And the citizen P. received a traumatic rupture of the loops of jejunum and mesenterium accompanied by the intraperitoneal bleeding. In the course of the primary forensic expert examination of the victim the expert concluded that this injury is not characteristic for a car accident, in particular, for the trauma in the cabin of the passenger vehicle, and was caused by the action of a blunt object with limited contact surface. Having obtained such conclusion of the expert the investigation team had reasonable doubts as to the true circumstances of getting the abdominal trauma by the victim. There were suspicions that the abdominal injury of the victim was

the result of intentional causing her bodily harm, and the victim and the witnesses due to some reasons deliberately hide this fact. In order to confirm or refute this version of the accident, it was decided to carry out complex forensic and transport trasological examination concerning this case. It was established during the examination that the collision of the vehicles was accompanied by mainly forward shock-inertial motion of bodies in the cabin; the back of the driver's seat which was before the victim could not cause the formation of abdominal trauma under these condition. Moreover, the relative insignificance of cars collision contradicted to the possibility of personal injury. Thus, bodily injury of the citizen P. as a result of a car accident was excluded at first sight. However, all participants in the accident, including the victim, repeatedly made the same, similar testimony about the circumstances of injury of the citizen P., and categorically denied the possibility of her injury not in the car accident.

Taking it into account, before making a final definitive conclusions about the impossibility of getting

injuries in the car by the victim, the experts had made a motion to a repeated, detailed interrogation of the victim about all the circumstances before the car accident. Only in the course of the interrogation it was found that the victim was holding a package with food products, in particular plastic bottles filled with water on her knees during movement, and at the time of the car accident she crumpled the package by the abdomen, after that she felt sharp pain in abdomen. In these circumstance the Experts Commission concluded that the plastic bottles placed in front of the anterior abdominal wall of the victim could be the very same object with limited contact surface, with the contact of which the closed abdominal trauma could be formed.

The considered case one more time confirms the need for careful analysis not only of injuries of the victims and the damage of vehicles, but also more detailed testimonies of persons involved in an accident. This will avoid unreasonable accusation of innocent persons, and accordingly, a miscarriage of justice.

CP-16

Fatal consequences of prolonged scalp of the head

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Introduction: Self-harm is intentional damage to the integrity of one's own body, i.e. direct damage or destruction of healthy body tissue without a suicidal intent. Most frequently the case is inducing or prolonging the pathological state of one's own organism performed in order to obtain a certain advantage.

Objective: The aim of this work is the demonstration of a case of a penetrating craniocerebral injury caused by self-harm, by a sharp object with fatal consequences.

Case history: It was a 59-year-old man, diabetic, suffering from paranoid psychosis and alcohol addiction, who was scalping the skin of his head for a period of five months. Subsequently he perforated his

skull by a knife. He exited after a 10-day hospitalization.

Methods: Autopsy was performed with a complete macroscopic and microscopic examination and photo documentation. The available data from the anamnesis and the medical records were processed.

Results: Changes found at the autopsy of his brain and brain covering were only of a local character and were not large-scale. In the remaining autopsy findings heart damage and signs of its failure prevailed.

Conclusion: Self-harm by sharp objects is one of the most frequently described methods. Skull perforations, on the other hand, are rarely described, with the exception of nailing in mentally ill persons and prisoners. This is a very rare case, which also

points out the irreplaceability of autopsies in determining the mechanism of injury and cause of

death, as well as the necessity of awareness of the examining doctor prior to autopsy.

CP-17

Fatal consequences of an occupational accident

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Introduction: Fatal craniocerebral injuries represent approximately one half of the cases of violent deaths in Bratislava and Trnava region. Most of them are blunt force injuries associated with road traffic accidents or with falls or jumps from height or firearm injuries.

Goal: The aim of the work is to demonstrate a case of fatal penetrating craniocerebral injury.

Casuistic: The work presents a case of an occupational accident that happened to a 26-year old man whilst splitting wood with a chainsaw during the course of work.

Methods: An autopsy with complete macroscopic,

microscopic and toxicological examination was conducted.

Results: A fragment of chainsaw blade smashed through the left side of the face of the man, penetrated through the brain and then embedded in parietal bone of the skull. The brain injury was not compatible with life.

Conclusion: The demonstrated case was rare from the point of view of forensic medicine. The death of the worker could have been prevented by securing compliance with workplace health, safety and welfare regulations. However, the chainsaw used did not comply with official safety standards; and furthermore, no protective equipment was used.

CP-18

Genotyping of biological traces, essential in solving a murder case

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DNA examination is at present the only that allows the certain identification of an individual based on biological traces.

In the presented case, were primarily analyzed all biological traces from the crime scene (contact traces, blood traces, semen traces). Their genotyping has led to the identification of the persons to whom they belong. The interpretation of all these data in

conjunction with information obtained during the autopsy of the victim and the survey data, allowed us to establish the unfolding of the events (path followed by the aggressors, how they entered into the victim's home, how they attacked the victim, etc), the number and contribution of each offender to these events.

Key words: biological evidence, DNA test, crime scene

CP-19**Illegal abortion with misoprostol**

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Introduction: Misoprostol is a prostaglandin E1 analogue licensed for the prevention and treatment of gastroduodenal ulcers and is approved in more than 80 countries under the name of cytotec.

It is widely used in obstetrics and reproductive medicine for the induction of labour, for the treatment of missed and incomplete miscarriages and for the priming of the cervix before uterine instrumentation.

However the patent holder of misoprostol (Pfizer) has not applied for licences for any reproductive health indications and so misoprostol is an off-label drug in gynecological indications.

Case report: A 19 year old Muslim woman gave birth to a female fetus in a restaurant. The fetus did not survive.

During the criminal investigation the woman said that she had taken medical advice due to gastro-intestinal pain. Sonographic examination showed an undiscovered pregnancy. Because she could not carry

out the child her physician initiated abortion by handing out a drug container filled with tablets and the instruction to ingest them.

The autopsy showed a fetus with morphological signs of general immaturity but without malformations. The age of the fetus was estimated between 21th and 25th week of gestation (weight: 480g, height: 28cm).

Toxicological investigation: In the serum of the woman a concentration of 7 pg/ml misoprostol acid could be detected with the GC/MS/MS method.

This confirmed the misuse of misoprostol as an abortion drug and the physician was accused with illegal abortion (§ 218 of the German Criminal Code).

The police investigations and the trial gave the suspicion that there more abortion with misoprostol. In cases of suspected applications of misoprostol against the own free will of a pregnant women there is now a tool for proving an unknown intake of misoprostol.

CP-20**A case of suicide by hanging and electrocution**

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A man of 35 had committed suicide in an unusual way: he hanged himself with an electrical cord which, at one end, had the stacker introduced in the electrical outlet, and the noose was de-isolated from the plastic insulation and fixed around his neck. Autopsy founding were - the general signs of

asphyxia, the tegument in contact with the electrical cable with burns and metallization, and a diffuse subarachnoid hemorrhage. The interesting part of the case is the combination of two major causes of death, which started discussions regarding the primary cause.

CP-21**Medico-legal aspects of death related to anesthesia in case of patient with morbid obesity. Case study**

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Anesthesia related deaths are one of the most difficult tasks to deal with in medico-legal activity. The main problems appear when the patient is known with diseases which by itself may represent a cause of death. We intend to report a case of 52 years old man with morbid obesity and head trauma who was anesthetized and died a short time after this. Family claims that anesthesiologist didn't manage the cause well and the patient's death had

appeared as a result of doctor's incapacity to ensure proper resuscitation at that time. During the autopsy it was stated that the death occurred as a result of anesthetic induction, but this conclusion was disproved by a subsequent forensic examination which failed to identify elements of medical negligence. Further, it was stated that death was caused by an existing intrinsic pathology in conjunction with the effects of general anesthesia.

CP-22**Medical responsibility in case of nosocomial infection**

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A child of 14 is operated in a county hospital for appendicitis intervention after which an abdominal wall abscess with E. coli and necrotizing fasciitis develops. The surgeon is accused of medical negligence while surgeon claims that during that period the hospital were dealing with many

nosocomial infections with E. coli, which is why the surgeon by himself would not be responsible for subsequent infection of the operative wound. In these circumstances, forensic experts are required to differentiate the origin of common germs infection of the operative wound.

CP-23**A case of testimony signing in case of schizoaffective disease remission**

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A 70 years old woman, mother of two boys and known with history of schizoaffective disorder, had signed a will according to which she give her entire property to one of her sons, whom she had a good

relationship with. The testament have been attacked in a court of law by underprivileged son, calling his annulation on grounds of mental illness of the mother. The first expertise granted in favor of contesting son,

but for the time of second expertise, a mother statement is brought according to which she maintain her will along with a document from a psychiatrist confirming that the disease is in remission state. Initially, the medico-legal commission intended to keep the findings of the first expertise, but analyzing the entire case had made possible to evidence a conflictual

situation between mother and the contesting son and that there were no documents to prove that when she was signing the will there were a proven state of mental disorder, and even more - she has maintained her initial decision by a second statement. All those facts helped the team to appreciate that the woman had discernment at the time of testimony signing.

CP-24

Violation of patient's rights to health care, self-determination and procreation

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Human rights are an important derivative of human existence and are available to all members of the society. These are natural rights, acquired at birth by any human being, regardless of racial or ethnic origin, gender, religion, language, political view or other circumstances. For the first time the human rights and fundamental freedoms were listed and detailed in the Universal Declaration of Human Rights, adopted on 10 December 1948 by the UN General Assembly [9]. Respect for Human Rights is a goal of any modern society. These rights apply in medicine as well and are known as patient's rights.

In Europe the patient's rights are regulated and protected by the Declaration on the promotion of patients' rights in Europe (Amsterdam, 1994) [2] and the European Charter of Patients' Rights (Rome, 2002) [3]. From ethical standpoint the patient's rights are regulated by the Declaration of Lisbon on the Rights of the Patient (Lisbon, 1981), adopted by the World Medical Association [1].

Patient's rights in the Republic of Moldova are regulated and protected by the Law on healthcare (1995) [4] and the Law on patient's rights and responsibilities (2005) [5]. Some of the fundamental rights of the patient are the right to medical care, the right to self-determination and the right to procreation. The right to procreation is especially regulated by the Law on reproductive health and family planning (2001) [7] and the Law on Reproductive Health (2012) [6].

Despite the fact that in the Republic of Moldova there are laws to assure protection of the general and special patient's rights, scientific studies show that the legislation is little known by physicians [8]. Such a situation is dangerous both for patients and for medical staff. Lack of knowledge in patient's rights inevitably leads to their violation and generates situations for medical staff liability. From this point of view, the following case is demonstrative.

It results from the ordinance that the criminal case was initiated on the fact of the patient's complaint, who accused the medical staff from district maternity in sterilizing her without her consent and in negligence resulting in newborn's invalidity. From medical file resulted that the pregnant patient I. was hospitalized on 25.05.2007 with the diagnosis "Pregnancy 37-38 weeks. Scar on the uterus, high risk. The IIIrd pregnancy" and on 04.06.2007 a planned caesarean surgical intervention was carried out being extracted a healthy newborn – weight 2500gr, Apgar score 8-9 p. During three days the medical file does not contain records relating to newborn's state. Only on 07.06.2007 the newborn was examined and following state were found: temperature 35,2^oC, total cyanosis, cold skin, unique respiratory movements, adynamic, missing cry. The newborn was diagnosed with hypothermia. In critical condition the baby was transferred to the national level hospital. The commission of experts concluded that: "Since

newborn birth, during three days medical file does not contain records about baby's health, the thermometry results, medical care, etc. The newborn was not provided with medical care in this period of time. Also, written consent of the pregnant woman for surgery and sterilization was not given".

As we can see, in this case the newborn's right to healthcare and the pregnant patient's rights to self-determination and procreation were violated. The physician took by himself the decision to sterilize the patient, arguing that "she comes from a vulnerable family, and he made a favor, making her free from future contraception". The physician did not even realize that he violated the patient's right to procreation, considering his actions oriented towards patient benefit. This particular case shows how important is for the modern physician to know the laws which regulate the health care area, the patient's rights and the duties of medical staff. From this perspective, the Medical law course becomes imperative and must be studied at university level. Medical universities must do efforts to raise the level of future doctors' knowledge in jurisprudence. Contemporary physician must know the patient's

rights and respect them during his professional activity. Only in this way the actions of medical staff can be specifically oriented towards the patient's benefit.

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SECTION 3. FORENSIC INVESTIGATION AND RESEARCH



FI-01

Optical methods of investigation in forensic practice

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Scientific progress opens up new technical possibilities in identifying different criteria and properties of lesions and altered body tissue, which allows development of new methods for objective diagnosis in forensic practice. We searched for, and developed new laser polarimetric criteria for the diagnosis of in vivo and postmortem changes of biological tissues and media, addressing important questions of forensic science and practice. In particular, we studied the establishment of the time of death at its various forms, the time of formation of hematomas, in vivo formation of bodily injuries and diagnosis of acute myocardial ischemia.

In our study, we investigated the optical properties of biological tissues (skin, skeletal muscle, cardiac muscle, brain tissue, lung, liver, kidney, spleen and small intestine) and hematoma in human organs (brain, liver, kidney, spleen) using laser polarimetric methods followed by statistical analysis of the results.

Taking into account the diversity of the methods and the materials used, we have studied and mastered a number of physical methods that have been successfully and effectively employed to achieve this goal: statistical laser polarimetry post-mortem images of native tissue sections of human corpses; polarization mapping of post-mortem images of native tissue sections of human corpses; Mueller matrix elements, Stokes polarimetry of post-mortem images of native

tissue sections of human corpses; polarization matrix methods; a number of methods using spectral phase meter measurements of laser images, statistical analysis of coordinate distributions of the degree of polarization and phase shifts, statistical, correlation and fractal approaches in the analysis of laser images of human skin in determining the occurrence of in vivo bodily injuries.

The high mortality rate of circulatory system diseases establishes their leading position among the major medical and social problems existing not only in Ukraine, but also in the world. Ischemic heart disease and one of its forms - acute coronary insufficiency, is one of the most frequent causes of mortalities of the circulatory system diseases. The peak of mortality is observed in the working age, that is, in the most socially active people.

Currently, methods for establishing lesions of acute ischemia used in forensic practice require a substantial upgrade, because they depend on a number of factors of internal environment, the circumstances of death and the subsequent changes in the environment. This is why researching, and improving methods of diagnosis and monitoring parameters of the myocardium to develop objective criteria for the forensic determination of acute ischemic myocardial injury is relevant.

In carrying out numerous studies, a number of features and patterns of changes of properties of laser radiation

as a result of propagation through biological tissue and body media were found. A set of objective forensic methods and criteria were established for determining the time of death at its various forms, the time of formation of hematomas, in vivo formation of bodily injuries and diagnosis of acute myocardial ischemia.

Based on these results, we came make conclusions about the advisability of continuing

studies of laser polarimetric images of biological tissues and media of the human body to increase the number of new specific, objective indicators and criteria for their further use in forensic practice. In the future a database of images of biological tissues and fluids of the human body can be created, as a theoretical framework to address issues of forensic practice.

FI-02

Structural-functional peculiarities of separate portions of the femoral bone

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An increased interest of experts in forensic medicine to structural-functional peculiarities of separate human bones is quite natural, as a reliable detection of the mechanism of bone fractures includes examination of all their morphological elements considering the composition of the bone, its internal structure, peculiarities of microscopic architectonics and distribution of the volume-mass parameters.

The principal volume-mass parameters characterizing morphological peculiarities of various femoral portions have been examined. The peculiarities of the volume parameters distribution of the hard matrix pores and water, organic and mineral parts, their density, general density of the bone and mineral part mass in the samples from various surfaces of the femur in its superior, middle and inferior thirds have been studied.

192 samples of various femoral portions removed from biological male and female mannequins at the age from 24 to 60.

First of all, circular (on all circumference) 0,8-1,0cm thick articles (disks) from the superior, middle and inferior thirds of the thoroughly cleaned long bones of the lower extremity (the femoral bone) were

prepared by means of transverse cutting. Then, by means of longitudinal and transverse cutting one sample from the anterior, posterior, medial and lateral surfaces of femur (per 12 samples from each bone) was made.

General volume of every sample V_1 was determined by means of rotary calibrated tubes, and by means of analytical balance their mass before and after filling them by orthoxylole, rotation, drying, baking of organic substance in the muffler was measured, thus getting the corresponding masses m and m^1 .

The data obtained were calculated by means of a complex of formulas, in this way receiving a number of volume-mass parameters: the volume of the hard matrix pores (V_p) and water (V_w), the volume of organic (V_o) and mineral portion (V_m) in every sample.

The parameters obtained will enable to examine their influence upon the regularities of formation of the morphological signs of the fracture surface of the tubular bone in the moment of its traumatic injury in forensic medicine, and present more reliable and substantiated results to investigatory powers while prosecuting inquiry in case of injuries of the long bones of the lower extremities.

FI-03

Protection of electronic medical records

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Abstract

Advanced technologies have not bypassed the medicine since the globalization and the demographic explosion of the last decades suggest specific tools offered to optimize and streamline processes regardless of their nature. They have determined secondarily exponential growth in information which in turn has necessitated specific management technologies. Technology, intervening as mediator between user and storage support, brings up for discussion problems of risk for the information

integrity and confidentiality, risks to which it is necessary specific legal framework. Benefits of information storage in electronic format are indisputable (quick access, easy sharing) but we should also be aware of the potential side effects and the risks associated with electronic databases. In the paper protective elements characteristic of electronic databases, in particular those containing medical records, are discussed.

Key words: databases, electronic information, medical records, medical confidentiality.

FI-04

Pattern of injury in motor vehicle accidents

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Motor vehicle accidents (MVAs) are a major cause of both internal and external wounds but also the main cause of death under 40 years. The modern day forensic pathologist, plays an important role in identifying injuries and mechanisms of death. Properly interpreting injury patterns can provide useful information for accident reconstruction.

In this article we discuss the importance of recognising the typical patterns of injury associated with motor vehicle accidents. This, coupled with a logical sequence for the initial assessment and management of trauma patients, has been shown to contribute to improved outcomes.

Key words: motor vehicle accidents, pattern wounds, mechanism of death, forensic expertise.

FI-05

Experience of research strangulation furrows in the Vladimir Regional Bureau of Forensic Medical Examination

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The establishment of health care IN "the Bureau of forensic medical examination", Vladimir

The main species sign for the hanging and suffocation by loop is a strangulation furrow – local trail from the pressure of the loop on the neck of the corpse, the peculiarities of which are discussed in numerous forensic medical literature (I. A. Kontsevich – 1968, E. C. Mishin – 1988, M.I.Fedorov – 1967, Y.A. Molin – 1996 and others).

The severity of furrows on the neck depends on the loop material, duration and force of pressure; the denser material (rope, cord, wire and so on), the deeper strangulation furrow will be.

Among the studies carried out by the MC - branches, are examinations of strangulation furrows sampled during autopsies, with their description, and the following reconstruction by the method of A.N.Ratnevsky. Our practice shows that even furrows of hard type after their processing in spirit and acetic solution often lost their signs, becoming not sufficiently informative in comparison with their initial views on the corpses. However, it is established that the study of large-scale photos of furrows on the victims' neck gives the necessary information about their morphology and size, and their conservation in a weak 2% formalin solution has no significant effect on their size.

Given this, there were analyzed the examination held in MC - branch of Vladimir Bureau concerning examination of strangulation furrows and loops, provided by criminal investigation, between 2011 and 2013, a total of 25 observations.

Moreover, it was established that the restoration of furrows by the method of A.N.Ratnevsky, in some cases (7) did not lead to significant changes in the furrows, in comparison with their original form. In other 18 cases their sizes deteriorated in comparison with their original form on the corpses (in such cases

the control were pictures of furrows on the corpses that came with experts at our request).

Revealing in this regard were the cases of killings by means of mechanical asphyxia from loop suffocation of M. and A. using a clothesline of a width of 4 mm, and thin lace from the sports pants of a width up to 5 mm. Fragments of strangulation furrows, taken from the necks of corpses, were seen in each case fuzzy, and their restoration in the solution of A.N.Ratnevsky was also ineffective. However, colour photos of injuries on the necks of the victims, reflected the morphology of furrows and their width much better, which allowed to come to positive conclusions about the use of the data loops in specific examinations.

In another observation the corpse of P. was discovered in the loop of plastic belt, width 35 mm. Along the belt were located oblique stripes with patterns of identical small squares. On the flap taken from the neck of the corpse, along its length a part of strangulation furrow was visible, in the form of a wide stripe of brown-red abrasion. However, large-scale photos, made at the autopsy of P. displayed on the neck of the corpse group and individual elements of the structure of the belt quite clearly – loops in the form of slanting bands consisting of equal squares, that was reflected in a comparative study of objects – belt, grooves and photos were shown in MC - conclusion.

With this in mind, experts of Vladimir Bureau suggested obligatory photography of furrows on the neck of the victims when mechanical strangulation asphyxia from suffocation by the loop or hanging is taking place, with their further saving for MC-research in weak 2% formalin solution. However, it is advisable in case of putrefactive changes of corpses to study the furrows taken and suspicious areas of the neck, using the method of A.N.Ratnevsky.

FI-06**The value of abnormalities of the thyroid cartilage for the practice of forensic examination with a blunt trauma to the neck***M.A.Furman**The establishment of health care IN "Bureau of forensic examination", Vladimir*

Features of fractures of the hyoid bone and thyroid cartilage at the various types of external violence – strangulation asphyxia, transport and blunt trauma to the neck, falling from a height are reflected in forensic medical literature in sufficient detail. Meanwhile, literature data indicate the possibility of their individual differences (malformations) and age peculiarities. These circumstances can cause atypical particularities, which complicate the evaluation of the mechanism of formation of fractures and faults.

There are cases when one-and two-sided small cartilaginous formations were located over the top horns of the thyroid cartilage, sometimes regarded by experts as fractures of the horns' loose ends. In practice, study in the medical-forensic Department allows to establish the true picture, as for the other abnormalities of the thyroid cartilage, regarded as traumatic injury, we haven't found such messages in the available literature.

In practice of medical forensic Department of the Vladimir regional Bureau we met 26 cases of blunt trauma to the neck, combined with abnormalities of the thyroid cartilage, and the following options were observed:

1. Sesamoid formations, one or two-sided, located above the upper horns (14 cases).
2. Absence of left or right upper horns (5 observations).
3. The loose, not accrete with the edge of the plate cartilage upper horn (3 cases).
4. The presence of two halves at the top of the horn, separated by a layer of soft tissues (4 observations).

Listed below are the 2 cases of blunt trauma to the neck, combined with anomalies of thyroid cartilage. In the first observation, according to the autopsy, death of Mr. C., 60 years, has come from the neck injury fracture of the right upper horn of

the thyroid cartilage, edema of the throat and larynx. The research showed that the upper left horn of the cartilage is high, and right upper cone is placed loosely, i.e. there was a suspected fracture of the horn at its base. After skeletonization of thyroid cartilage, it was revealed that the horn is separated from the upper edge of the plate cartilage with layer of soft tissues, of a width of up to 3 mm. The study also revealed extensor fracture between the plates of the cartilage that occurred by means of local traumatic effects on the front surface of the neck. Primary (during the autopsy) diagnosed the fracture of the upper horn to the right was cleared after the revealed malformation – the lack of fusion between the horn and plate of cartilage.

In another case in the study of rotten modified corpse of Mr. K., taken from the water, a fracture of the left big horn of hyoid bone, and of both upper horns of thyroid cartilage was diagnosed, causing mechanical asphyxia from suffocation by hands. After the study of organocomplex of the neck in MC - branch the fracture of hyoid bone was confirmed, while the thyroid cartilage injuries were not confirmed. His upper left horn is high, consists of cartilage tissue. Right horn was completely absent. The conclusions about the fracture of the hyoid bone, in the absence of traumatic lesions of the thyroid cartilage, were made. Absence of the right upper horn is explained not by its loss while the sectional removing of neck organocomplex, but by the malformation of the cartilage, which led to premature conclusions about the horns "fractures".

Thus, our observations suggest that abnormal thyroid cartilage may cause their deviations from the norm to be regarded as damage of traumatic nature. The study of neck's organocomplex in medical-forensic Department allows to reveal the expert errors incurred by the dissecting table.

FI-07**Forensic-medical characteristics of damage caused by scissors, a subject which combines the properties of piercing and piercing-cutting instrument***M.A. Furman**The establishment of health care IN "Bureau of forensic examination", Vladimir*

Among mechanical damage done to the man, frequent are the stab wounds, which can be caused by different acute instruments, in particular, scissors, widespread in everyday life. According to literary data there is no consensus about the nature and mechanism of action of the tools: some authors consider it piercing, others – piercing-cutting instrument (V.Y Karyakin – 1966, A.P. Zagreadskaya – 1968, T.A. Budak – 1969, M.A. Furman – 1973, Y.V. Kapitonov – 1984, and others).

Analyzing forensic documentation in which scissors are mentioned, one can note that the insufficient development of the issue of this type of damage explain few valid conclusions in the conclusions of experts characterizing scissors as the subject of violence.

To resolve these tasks set 928 experiments were carried out, and 43 cases were analyzed in which scissors have become the instrument of injuries. In the experiments economic, hairdressing, tailoring, manicure, surgical scissors were used, in total amount of 15 weapons. Wounds were applied in different areas of corpses through the models of clothes, total 1291 injuries were studied; 342 – on the skin of corpses, 298 – on internal organs, 80 – bone and cartilage, 571 – on clothing materials.

The analyzed practical material of damage caused by scissors consisted of 43 observations, in 15 cases injuries were fatal, 28 – not fatal.

Analyzing the experimental data and practical observations one can note that damage caused by scissors, depending on the position of the branches at the moment of impact can be observed in 5 main variants: damage with separate branches; damage with branches put together; damage with divergent branches; damage with branches going down to each other; piercing-cutting injuries and cuts with branches of scissors.

A separate branche of scissors causes piercing-cutting injuries in body tissues and textile materials,

resembling injuries caused by piercing-cutting instrument with one-side-sharp blade. Unsharpened edge of the branches (skid) participates in the damage in the form of corresponding beveled edge.

Folded scissors cause puncture damage, their edges can make bilateral or unilateral cuts (incisions) which demonstrates a limited cutting action of the branches. This is a significant diagnostic feature that distinguishes damage made by folded pair of scissors from injuries of other piercing instruments.

Scissors with divergent branches form two piercing-cutting injuries with sharp ends facing each other, divided by a small bridge of intact tissue which width depends on the divergence angle between the branches.

Branches going down to each other can be found in economic and hairdressing scissors, their mobility is not limited by special notch in the castle of scissors, like in other types of scissors. Branches may go down to each other in 4 different ways, which leads to different types of damage.

Finally, cutting-shearers action of scissors forms on the skin of the body incised wounds of an angular shape, which sides are meet at an acute angle.

We found that regarding the scissors it is useful to rely on laboratory methods used with typical sharp tools – detection of metallization on the edges of the damage, fill the wound channels in the internal organs – liver, kidney, lung, revealing traces of the microrelief of sharp branches on costal cartilages for their individual identification.

Experimental data and analysis of practical material showed that comprehensive study of damage caused by scissors can provide sufficient data not only for the judgment about their use as a weapon of damage, but can also reveal their detailed characteristics and determine the mechanism of action. When detecting traces of the microrelief of branches blade on the cartilage, scissors can be identified.

FI-08**The mechanism of damage to hyoid bones and cartilages of the larynx at the various types of external violence***M. A. Furman**The establishment of health care IN "Bureau of forensic examination", Vladimir*

Although the fractures of the hyoid bones and cartilages of the larynx in forensic practice mainly associated with strangulation asphyxiation, they also occur in other effects of the blunt and sharp objects, traffic injuries, drowning in the water (Y. Krater – 1926, V.A. Kodin – 1968, 1974, E.S. Mishin – 1992, Y.A. Molin – 1996, and others). We have analyzed the material of medical forensic Department of the Vladimir office from 2006 till 2013, during the reporting period 208 expertise were made in connection with research of bodies neck at the various types of external violence.

The distribution of the material was as follows :

1. Asphyxia caused by compression of the neck organs with loop when hanging - 7
2. Asphyxia from suffocation by hands - 43
3. Asphyxia from suffocation by loop - 29
4. Trauma to the neck of shock nature - 34
5. Combined injury - 8
6. Damage to the larynx under other kinds of external violence (falling from height, stab wounds, transport trauma, epilepsy) - 14
7. Damage to the larynx with other forms of asphyxia (drowning in the water, caused by compression of the chest and abdomen) - 8
8. Sectional damage - 15
9. Not specified mechanism (putrid corpse changes) - 9
10. No injuries of bones and cartilages of the larynx - 42

It is known that two types of strangulation asphyxia are murders – suffocation by loop and by hands (72 analyzed cases), while hanging is quite always an act of suicide. Along with this, mortality and damage to neck organs of impact nature has significantly increased (34 observations).

Sectional study of the corpse often fails to establish the damage to hyoid bones and cartilages of the larynx. With this in mind, an expert-tanatologist removes organocomplex of the neck, with its further

examination after cleaning the hyoid bones and cartilages of the larynx from soft tissues using stereomicroscopy of the damage.

In most cases, asphyxia from suffocation by hands shows unilateral or bilateral fractures of large horns of the hyoid bone and of the top horns of thyroid cartilage of flexion-structural nature. The cricoid cartilage damage was observed in single cases.

Mechanical asphyxia from suffocation by loop causes unilateral or bilateral fractures of horns of hyoid bone and of the top horns of thyroid cartilage of flexion-structural nature. The pressure of loop node causes extensor fracture of the thyroid cartilage between the plates and similar fractures of cricoid cartilage (with lower location of the loop).

The mechanism of blunt trauma to the neck is another one. Here, too, there was unilateral or bilateral fractures of large horns of hyoid bone and the top horns of thyroid cartilage here, too, but of unbending character, as well as the extensor fractures of thyroid, and sometimes cricoid cartilage at its middle line.

In any cases of the neck injury the location of external damage in the skin of the neck and border areas must be considered (chin, mouth area, above the collarbone), correlating them with the circumstances of the case.

The essential defect of the corpses expertise is sectional damage identified during the MC - research (15 cases). It was caused by gross technical errors during the extraction of organocomplex or after delegation of this procedure to corpsman.

The results of our observations allow to recommend research to establish the mechanism of fractures of the hyoid bones and cartilages of the larynx in MC-branch in all cases of such damages. Particularly important is the damage to the neck organocomplexes on rotten modified, charred, dismembered and skeletal corpses when there is no information on the localization of external injuries on the neck.

FI-09**Experimental approbation of dental identification methods proposed by Association of Forensic Dentistry of Ukraine in complex forensic examination**

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Forensic odontology is a separate medical and practical skill which would be engaged in addressing issues related to the definition and evaluation of dental status, both in terms of forensic expert, and from the side of the dentist specialization. Practical heritage of forensic odontology have evolved independently in different countries and were generally aimed at addressing domestic incidents of violations involving the study of dental status without inter-ethnic and inter-national variations in the structure of the teeth-jaw system, development and teething, differences of cranio-facial biometric indicators.

Association of Forensic Dentistry of Ukraine proposed algorithm of computer program for automated scanning dental identification adapted to panoramic X-ray photos of tooth-jaw system. This program solves problems of expert criteria for evidence base during changes of dental status caused by pathologies of tooth structure and jaw's bone architectonic, results of complex dental treatment, and possible intentional changes. Also by members of Association was proposed forensic systematization of dental status, which reduces the number of peer sample and provides primary categorization of initial dental identification facts. The computer program of dental identification consists of number of scanning methods which provide integrated approach for dental examination. The method of contrast contouring based on use of the effect of optical contrast and determined as ratio of the brightness differences of objects to the brightness

of background. This method provides effectiveness of $91,2 \pm 2,03\%$ in II and III groups of systematization (persons with partial changes of dental status). Method of relevance comparison of clustered objects of X-rays photos based on the analysis of the unique identification signs and coincidences using unique descriptors, algorithms and arrays of information is effective in all groups of systematization with ratio $97,4 \pm 2,56\%$. The method of anthropometric indices and dynamic registration of mandible recession is based on definition of constant ratio of distances between specific points on the X-ray photo and their subsequent mixing in the mathematical matrix, identifying individual interim and final comprehensive anthropometric indices. Those methods solve problem of person identification and registration of dental status during or after its changes, and provide positive results in $93,7 \pm 2,15\%$. Use of ultrasonic identification of dental materials based of use of piezoelectric effect in condition of water-immersion research method is justified in $99,1 \pm 3,3\%$, with ration of absolute error $0,03-0,14$ m/s.

Use of this identification system provides elements of individualization for expert evaluation of each clinical case during examination and expert valuation of injures and damages of oral-facial region. Categorization, classification and systematization of dental forensic achievements will be important goal for further development of forensic odontology and it's integration into a global computerized system of person identification by dental status.

FI-10**Age estimation of bloodstains based on aspartic acid racemization**

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In forensic practice regularly the question arises, whether bloodstains detected at a crime scene are rather fresh or old. To this date, no reliable and precise method suitable for this important task has been established in forensic practice. Arany & Ohtani in 2011 (1) published a preliminary report on the application of the aspartic acid racemization method to estimate the age of bloodstains. Their results hinted at a suitability of this method for age estimation of bloodstains in forensic practice. The theoretical background of this approach is interesting, as it can be assumed that proteins in a bloodstain degrade over time due to the influence of ambient temperature, humidity and UV exposition. However, due to the experimental setting of Arany & Ohtani's study, many questions remained unsolved.

Therefore, we performed further experiments. We drew blood from healthy volunteers, dripped it on glass slides and kept the samples for up to three months at various temperatures and under various conditions. Additionally, we investigated whether the amount of D-aspartic acid accumulated in naturally aged bloodstains was high enough for use in forensic practice: we examined bloodstains obtained during autopsies from 1994 through 2013 and since then kept in the archives of the Institute of Legal Medicine in Düsseldorf and of the Institute for Forensics in Lübeck, respectively.

In this lecture, we present the results of our study and give an outlook for further research in this field.

(1) Arany S, Ohtani S (2011) Age estimation of bloodstains: a preliminary report based on aspartic acid racemization rate. *Forensic Sci Int* 212(1-3):36-9.

FI-11**The torture phenomenon in the Republic of Moldova must be scientifically studied**

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The torture phenomenon is known since antiquity. Unfortunately, even nowadays people are tortured in countries all over the world. This fact is recognized by the United Nations, which proclaimed June, 26 as *International Day for the support of torture victims*. Torture is one of the most serious crimes committed against a human being. Physical and psychological effects of torture are huge. For these reasons, human right not to be subjected to torture and other ill-treatment was established by a series

of documents from international law. The Universal Declaration of Human Rights establishes in the 5th Article that "No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment. All detainees will be treated with respect for the inherent dignity of the human person. No one shall be subjected to torture or cruel treatment, and a, inhuman or offended dignity". A similar message is also sent by the UN Convention against Torture and Other Cruel Punishment and Treatment, the

European Convention on Human Rights and Fundamental Freedoms and the Convention of the European Council for the Prevention of Torture and Inhuman Treatment or Punishment or Degrading Treatment. It should be noted that, after independence, the Republic of Moldova adhered to these important international instruments for the protection of human rights and made clear commitments to eradicate this phenomenon. Thus, the 24th Article of the Constitution guarantees for all citizens the right to life and to physical and mental integrity and the prohibition of torture, punishment or cruel, inhuman or degrading treatment. Criminal Code was supplemented by Article 166¹, which penalizes public officials who use torture or other ill-treatment. The General Prosecutor's Office created a new direction *Combating torture*, responsible for criminal investigation of torture claimed. These are just some of actions taken by authorities to eradicate the phenomenon of torture in our society. Although, torture continues to be applied, especially by law enforcement officials, and

mass cases registered in April, 2009 serve as eloquent proof.

According to data of the Center of Legal Medicine, in recent years 771 cases of injuries caused by police officers were claimed. Thus, in 2011 there were 278 cases, in 2012 – 271 cases and in 2013 – 222 cases. Decrease of these cases is established, but in our view its frequency is still alarming.

We believe that for the prevention of torture could be taken many measures. Unfortunately, the phenomenon of torture has not been studied in the Republic of Moldova under scientific aspect, that's why trends, national peculiarities of torture, and its causes are not known. From this perspective, such scientific research is as necessary as appropriate, and it could be based on the study of forensic reports, survey of the forensic pathologists, police agents and victims of torture. We are confident that a scientific study will enrich our knowledge about the phenomenon of torture in the Republic of Moldova and will develop feasible recommendations based on research findings of national aspects.

FI-12

Analysis of forensic examinations on the fact of discovery of mistakes in health care

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Nowadays, Ukraine has seen a trend to increased mortality, which is higher than the birth rate, and leads to a significant decline in the population. Note that one of the factors for this phenomenon is inadequate quality of providing of medical care. The quality of health care is relevant, but is still an unsolved problem in Ukraine, and it's solution involves many components, including forensic experts estimate of commission expert forensic medical examination. The reason for the difficulty in determining a direct causal link between the actions (or inaction) of the doctor and negative consequences for the health of the patient is, above all, the lack of methodological approaches and common forensic evaluation criteria of quality of care.

Research materials were forensic examination of commission department of the regional bureau during 2009-2013 for cases, concerning quality of care. Total number of examinations was 323.

Dynamics of forensic examinations on "doctor cases" according to the commission department of a regional bureau of FME varied from $9,92 \pm 0,54\%$ in 2009 to $10,5 \pm 0,54\%$ in 2013 and had a undulating character, reaching the lowest figures in 2009 and 2011 and the highest - in 2010 and 2012. Dynamics of deficiencies, identified by the expertise of the quality of medical care, had an undulating character, while the number of deficiencies therapeutic and diagnostic character decreased from

18,8 ± 2,32% and 25 ± 2,72%, respectively, in 2009 to 8,7 ± 2,32% and 13 ± 2,72%, respectively, in 2013, meanwhile the number of organizational deficiencies during this period significantly increased from 21,9 ± 3,98% in 2009 to 32,6 ± 3,98% in 2013. The largest number of commission forensic examinations on the quality of medical care during the period 2009- 2013 took place for obstetric and gynecological and surgical specialty compared with

other areas. Among surgeons and anesthesiologists often manifest mistakes in treatment, namely, the failure to provide medical care standards, clinical protocols to provide treatment and other, among obstetrician-gynecologists and dentists, concerning arrangements, i.e. incorrect organization of the workplace and the treatment process and among obstetrician- gynecologists and dentists-organizational mistakes.

FI-13

The medicolegal characteristic of thoracic and abdominal gunshot injuries caused by “Flaubert” 4mm cartridges

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The results of experimental study of 960 thoracic and abdominal gunshot injuries caused by the Dynamit Nobel (Germany) and Sellier&Bellot (the Czech Republic) “Flaubert” 4mm cartridge types are summarized. 48 corpses served the source for the medicolegal data.

When firing at unprotected corporal areas at point-blank range (50 cm) the bullet penetrated mainly into all layers of the thoracic wall, pleura membrane, pericardium and epicardium inflicting a perforating wound sized 0,3-by-0,4 mm when reaching the myocardium of the pulmonary atrium in the form of an incorrectly round wound with clear-cut, smooth edges. When firing at abdominal areas the gunshot injury also penetrated into all layers of skin, muscles, abdominal membrane, omentum, causing the stomach damage in the form of a slit-like or oval wound, deformity of small intestine and liver. When shooting Sellier&Bellot cartridge type at long range (1 m) the bullet penetrated through skin in the form of an oval wound sized 0,4-by-0,45 cm with ragged edges, which got into thoracic and abdominal cavities through all layers of skin and adipose tissue, muscles,

deforming parietal and (or) visceral pleura, omentum and small intestine. When firing at 2 m distance, the bullet stopped in intercostal muscles and muscles of the anterior abdominal wall. In addition, the piercing performance of Dynamit Nobel cartridge type turned out higher than Sellier&Bellot cartridge type.

When shooting at corporal areas protected with clothing at distance, ranging from 10 cm to 50 cm the bullet caused penetrating wounds in thoracic and abdominal cavities while inflicting no visceral injury. Cases of bullet penetration into intercostal muscles and muscles of the anterior abdominal wall were also registered. When firing at thoracic and abdominal areas protected with denim fabric at 1 m distance, the bullet caused a piercing oval fabric deforming and minor skin bruising. When shooting Dynamit Nobel cartridge type at thoracic and abdominal areas protected with stockinet (a T-shirt) at 1 m distance the bullet caused a non-piercing bulging-out fabric deforming and a skin lesion from 0,3 to 0,5 cm deep. When firing at corporal areas protected with clothing at distance, ranging from 2 m to 3 m the bullet caused only minor skin bruising.

FI-14**Complex causes of discrepancies between clinical and medico-legal diagnosis***Anatol Bondarev**Department of Legal medicine, SUMPh "Nicolae Testemițanu",
Chișinău, Republic of Moldova**Introduction*

Determination of deficiencies in the process of diagnosis and treatment, finding cases of discrepancies between clinical and medico-legal diagnosis, discussing with physicians autopsy results are among the important tasks of medical legal service. In this way we can exercise scientific control over the diagnostic and curative processes, correct committed deficiencies, which will improve theoretical knowledge and practical skills of clinicians. Different authors understand the discrepancy as a partial or total mismatch of the disease (trauma) identified in hospital with that found during the autopsy by location, etiology or nature of pathological process [1, 2].

Relevance of the topic

According to the data presented by various authors, the largest share from all discrepancies in cases of violent death belongs to different forms of trauma, predominantly cranio-cerebral. Thus, A.S. Kupriushin (2005) points out that most of diagnostic mistakes are related to cranio-cerebral trauma (39,1%), of which 18,8% were hyperdiagnosed, 11,7% – undiagnosed, in 4,7% cases diagnosis was incomplete and 3,9% – with undiagnosed fatal complications [7]. These results coincide with the data obtained by E.V. Kurilina (2007), who established a rate of hypodiagnosed cranio-cerebral trauma about 11,1%. It was confused with alcohol intoxication in 31,7% of cases, with cerebrovascular disease – in 13%, with meningitis and encephalitis – in 3% etc. [8]. The author underlines that in 18% of cases lethal injuries were not diagnosed even 2 weeks after patient's hospitalization. Mistakes mentioned by the authors were due to underestimation of anamnesis or clinical examination. Epi- and subdural hematoma were not included in clinical diagnosis of cranio-cerebral trauma (23,1%) in cases of insufficient examination of patients and their short stay in hospital. Information presented by previous authors correlate with data of

R.P. Matveev (2011), who mentions that most undiagnosed injuries in cranio-cerebral trauma are intracranial hematomas (18±5,4%) and skull fractures (10,8%), rarely – cerebral contusion (4,4%) [9]. D. Dermengiu (1996) believes that hypodiagnosed trauma is often conditioned by omission of radiological studies including computed tomography or misinterpretation of their results [3].

In opinion of E.V. Kurilina (2007), spinal cord injury was not diagnosed in 0,4% of cases being confused with head trauma (36,3%) and alcoholic coma (27,3%) [8]. According to various authors (1972), among chest injuries were not diagnosed lung lesions (16,7%), heart contusion (7,1%), more rare rib fractures (4,1%) and hemothorax (1,6%) [6, 9, 10]. A. Padure (2008) established that deficiencies in surgical practice are recorded in 21% of observations and determined the delayed, incomplete and incorrect diagnosis making [4]. In this context, R.P. Matveev (2011) establishes that in cases of abdominal trauma in 33,3% retroperitoneal hematomas were not detected. In case of musculoskeletal trauma he showed that undiagnosed injuries did not affect the consequences of trauma: in most cases only single marginal fractures were not detected [9].

Results and discussion

Based on the information presented above, we consider appropriate to present fully two illustrative cases from our practice in order to confirm the hypothesis of multilateral origin of discrepancies between clinical and medico-legal diagnosis.

Case 1. Patient P, 24 years old, was urgently hospitalized on June, 15 in the intensive care department of the republican hospital with the diagnosis "Associated injury. Serious spinal cord injury. Severe spinal contusion. Compressed fracture of Th III-IV body. Inferior paraplegia. Cranio-cerebral injury. Cerebral contusion. Fracture of the

I-st left rib and II-nd, III-rd right ones. Massive laceration in the frontal-temporal region on the right". Primary examination: General state – severe. Consciousness – obtunded. Skin – pale pink colored. Breathing was rough. Heart sounds were rhythmic, clear. Pulse – 100 BPM, blood pressure 100/70mmHg. Abdomen was soft, supple, participated in breathing, painless on palpation. Peritoneal signs were negative. Neurological examination: eyes were symmetrical, pupils OD = OS, react to the light, horizontal nystagmus was present; anesthesia was present at the right lower limb, disorders of conductive type, paralysis in both lower limbs, deep tendon reflexes were absent, pathological signs were missing, meningeal signs were negative. After an appropriate surgical debridement the wound was sutured. In the same day the computed tomography detected diffuse cerebral edema, fracture of vertebral body C II, compressed fractures of Th III and Th IV, fracture of the I-st left rib and II-nd, III-rd right ones. Two days later ultrasound investigation of internal organs detected free fluid in the left pleural cavity, the lung was collapsed. Free fluid in the abdominal cavity was not detected, any lesions of abdominal organs were not found. Clinical diagnosis of "Associated injury. Cranio-cerebral injury. Minor cerebral contusion. Severe spinal cord injury. Severe spinal contusion. Compressed fracture of Th III-IV body. Inferior paraplegia. Fracture of the I-st left rib and II-nd, III-rd right ones. Left clavicle fracture. Blunt wound in the frontal-temporal region on the right. Ascending medullary edema. Pulmonary contusion. Cardiac contusion. Left hemothorax. Left lung atelectasis". An appropriate for such diagnosis treatment was given. The clinical state of the patient during the stay in hospital was severe with negative dynamics. The patient died after 13 days.

At the autopsy there were found: incomplete fracture of the left clavicle in the middle third and incomplete fractures of the ribs 3, 4, 5 at right paravertebral line. At the middle axillary line an incomplete fracture of the left rib was determined. Compressed fractures of the vertebral bodies Th 3 and 4 were determined during spine examining. Epi- and subdural, insignificant subarachnoid hemorrhages were found on opening of the spinal canal. Spinal

medulla was flaccid-soft, with low elasticity, without macroscopical visible hemorrhages. Pleural cavities were without liquid, with unique easily removable adhesions. Airways were permeable, with insignificant mucous-purulent containing; its mucous membrane was moist, glossy, purplish-gray colored, without any inflammatory changes. Lungs on palpation had soft-elastic consistency, without any zones of induration, visceral pleura was transparent, wet, glossy; on section lungs were red-purple, moderate bloodshot, with homogeneous appearance of the surface of section; spontaneous and on pressure dark red liquid, messy blood eliminated in moderate quantity. Abdominal cavity was with multiple easily removable adhesions, containing about 1,5 liters of brown-green, muddy, dirty, foul-smelling liquid. The peritoneum was matte, gray-purple colored, with depositions of fibrin; the intestines were moderately distended, with yellow-green fibrin deposition, locally abundant. In the upper duodenum flexion was observed a perforated duodenal ulcer, round shaped, 4x4cm, its edges were slightly thickened, smooth, without hemorrhages. The ulcer was opened towards the duodenum, partially eroding pancreatic parenchyma, with multiple adhesions which formed a conglomerate. Medico-legal diagnosis "Chronic duodenal ulcer perforation. Purulent-fibrinous generalized peritonitis. Fibro-purulent contents into the abdominal cavity (1,5 liters). Adhesions in the abdominal cavity. Closed spine injury: compressed fractures of the thoracic vertebrae 3, 4, epi-, subdural and subarachnoid hemorrhages, pronounced medullary edema. Closed chest injury: bilateral rib fractures, left clavicle and sternum fractures. Blunt wound in the fronto-parietal region on the right. Excoriations on upper limbs. Bruise on left shoulder. Bilateral purulent bronchopneumonia. Cerebral and pulmonary moderate edema. Medical care signs".

Case 2. Patient C., 41 years old, was hospitalized on April, 27 into a regional hospital intensive care department immediately after falling down at home, hitting his head. After two days he was transferred to the republican hospital with diagnosis: "Cranio-cerebral injury. Cerebral contusion". Primary examination: General state – severe. Consciousness at 8 points GPS. Skin – pale pink colored. Breathing

was vesicular. Heart sounds were rhythmic, clear. Pulse – 103 BPM, blood pressure 140/90mmHg. Abdomen was soft, supple, participated in breathing, painless on palpation. Peritoneal signs were negative. The liver and the spleen were not palpable. Peristalsis was present. Jordano sign was negative bilaterally. Urination was free, painless. Neurological examination: pupils S = D, deep tendon reflexes D > S, Babinski sign was positive bilateral. After the CT scan of the head was diagnosed “Associated cranio-cerebral injury. Severe cerebral contusion with multiple foci of dilaceration: bifrontal, biparietal, mostly on the left. Intraventricular hematoma – lateral ventricles. Temporo-frontal intracerebral hematoma on the left side”. In the same day a 30ml intracerebral hematoma was evacuated. On April, 30, after repeated CT an intracerebral hematoma with the same location was found and evacuated repeatedly. An appropriate for such diagnosis treatment was given. The clinical state of the patient during the stay in hospital was severe, consciousness at coma level. On May, 3, chest radiography was performed and right basal pneumonia was diagnosed. Radiographic negative dynamics was established: lower lobe atelectasis on the right and pleuro-pericardial adhesions on the right appeared. The patient died after 12 days. The final diagnosis was “Cranio-cerebral injury. Severe cerebral contusion. Left fronto-temporal and intraventricular hematoma. State after surgical intervention. Soft tissue contusion of the head. Cerebral edema. Bilateral pneumonia”.

At the autopsy there were found: subarachnoid hemorrhage at convex surfaces of the left frontal and temporal lobes; hemorrhagic cerebral spinal fluid in the ventricles; dilaceration of the left frontal lobe brain tissue with surrounding softening. Pleural cavities were without liquid and any adhesions. Airways were permeable, with moderate yellowish-gray purulent containing; its mucous membrane was moist, matte, edematiated, gray-violet colored.

Lungs on palpation had no uniform hardened consistency, visceral pleura was transparent, wet, glossy; on section lungs were red-gray, bloodshot, with homogeneous appearance of the surface of section; spontaneous and on pressure increased amount of dark red liquid blood eliminated. Drops of

pus were determined into the lumen of sectioned bronchi. The abdominal cavity contained about 2 liters of brown colored liquid. Parietal peritoneum was matte, with depositions of white-purple colored fibrin; the vessels were congested; the intestines were moderately distended, with yellow-green fibrin deposition. Duodenum was horseshoe shaped, its bulb wasn't deformed, its mucosa was purple-gray colored. On its upper wall penetrating in the gall bladder ulcer was determined. It was round shaped, had diameter of 3 cm, with gray colored edges of semi-hard consistency. Medico-legal diagnosis “Duodenal ulcer penetrating into the gall bladder; bile peritonitis, purulent contents into the abdominal cavity (2 liters). Closed cranio-cerebral injury: bruise in the left parietal region, hemorrhages in head soft tissue, subdural, subarachnoid, cerebral hemorrhages with subsequent dilacerations of brain substance. Pronounced cerebral edema. Bilateral purulent bronchopneumonia. Pulmonary edema. Chronic ischemic cardiomyopathy. Sutured wound in the left parietal region”.

It is clear that in presented cases on the background of severe associated injury, lethal complications of duodenal ulcer as perforation and penetration were not diagnosed. Analyzing data from medical records, we underline that the occurrence of discrepancy was due to many factors. From the objective causes group we can mention extremely grave state of the patient in both cases. In the first case it was due to the trauma associated with spinal cord injury. Clinically spine injury at the upper level (Th III-IV) can be interpreted as a masking condition that complicates perforated ulcer diagnosing because of denervation of peritoneum and anterior abdominal wall. So, the assessment of clinical peritoneal signs became difficult in such condition, if not impossible. The second case is characterized by a severe disturbance of the patient's consciousness, which created difficulties for emergency surgical pathology diagnosing. However, the severity of the patient's state has a particular value when it does not allow making quickly some diagnostic procedures. In the analyzed cases the patients had been in hospital more than 10 days, which is enough time not only to perform different investigations, but to monitor their dynamics

too. It should be mentioned that both cases occurred in republican hospitals, which are equipped with the most modern methods of investigation, both laboratory and instrumental. From subjective reasons we mention overestimation of trauma anamnesis; respectively physician's focusing on diagnosis of injuries. Perhaps, this explains the underestimation of the value of internal organs ultrasound data: in both cases abdominal ultrasonography was performed more than a week before patient's death and was not repeated in dynamics. In our opinion, when the clinical examination is not informative for occurred complications diagnosing, ultrasound would be an appropriate approach, being informative for determination of free fluid in the abdominal cavity.

Based on the presented cases, we note another problem which exists in medical activity: doctors-specialists are focused on the investigation and treatment of pathologies according to their profile. In both cases, the neurosurgeon was the responsible clinician, who focused his actions towards diagnosing or exclusion of cranio-cerebral or spinal cord injury, respectively, didn't pay an appropriate attention to possible complications of other profile. In this context our opinion coincides with those presented by A. Padure (2011), who affirms that being based only on own profile and omitting information from another specialty limits the doctor to obtain all the required data for full diagnosis making [5]. Without a thorough examination at hospitalization, the physician may unintentionally omit consultations of other profile specialists, making an incomplete diagnosis. The presented cases demonstrate that fatal one is the moment when undiagnosed complications appear, which could be prevented in case of full examination.

Conclusions

Most cases of discrepancies between clinical diagnosis and medico-legal one from our practice were

due to combining of several different causes. In this sense, we cannot deduce which of the categories of causes prevailed in the presented cases. However, we can say that just complex of different factors and unfavorable circumstances leads to fatal hypodiagnosis. Major discrepancies, which are consequences of a mistake with a decisive role in death occurrence, appear in case of association of several objective and subjective causes.

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CP-25

Dissimilarity between determining the age of gestation by anamnesis and ultrasound methods – implications in perinatal pathology in infants delivered by caesarean section (case report)

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Discrepancies between establishment the age of gestation by ultrasound methods and anamnesis followed by delivery by cesarean section leads to specific neonatal pathology related to its lack of maturation. Neonatologist is confronting with a newborn – which has normal anthropometric indices: length, weight, normal Apgar score, but has a lack of maturation of the lungs and therefore difficulty in adaptation to extrauterine life, not often followed by an unfavorable outcome. This study presents the case of a male newborn with birth weight 3700 g, gestational age 35 weeks born by Caesarean section, in cranial presentation with Apgar score 9/10. Post natal infant shows malaise, agitation, grunting, polipnee.

Two hours after birth shows worsening respiratory symptoms so that a pneumothorax is suspected diagnosis confirmed by transillumination and X-ray. The treatment was pleural puncture to evacuate the air, provide oxygen, sedatives, antibiotics and parenteral nutrition. The baby was discharged after 18 days of spitalisation. So these complications increase the number of hospitalization days, the treatment is long and complex and in some cases there is a possibility of serious neurological sequelae after hypoxia – revealed unfortunately late.

Keywords: determining age of gestation, ultrasound, cesarean section, pneumothorax.

CP-26

Forensic issues in differentiating self injuries from heteroproduced injuries (case report)

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Injuries made by weapons can sometimes cause problems to justice in determining the correct intention and the mechanism of production. There are many variants: heteroagression, self harm or accident mechanism, which are confirmed or not by the investigation data. The role of the forensic is essential in establishing these mechanisms by analysing the lesions (morphology, topography, gravity). This case report presents the death of a middle-aged, who lived alone, chronically consuming alcohol without any historical data to support mental pathology. The victim is found dead presenting multiple wounds pierced-

cut with thoraco-abdominal location. Inheritance problems of the deceased's land caused some suspicions Forensic autopsy establishes the cause of death as multiple internal and external bleeding wounds with visceral involvement. Complementary exams – highlight alcohol intake prior to death. In the differential diagnosis – the absence of other traumatic injuries specific to heteroagression support the self-inflicted mechanism. Reviewed investigation data confirms the previously presented mechanism.

Keywords: auto injuries or heteroproduce weapons, forensic autopsy.

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