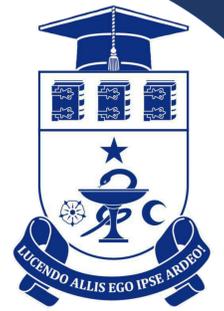




Centre of Forensic Medicine

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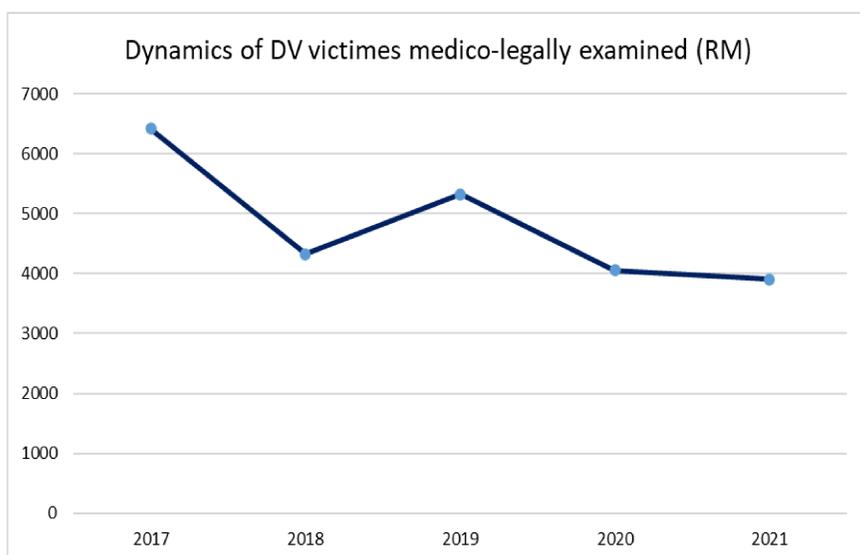
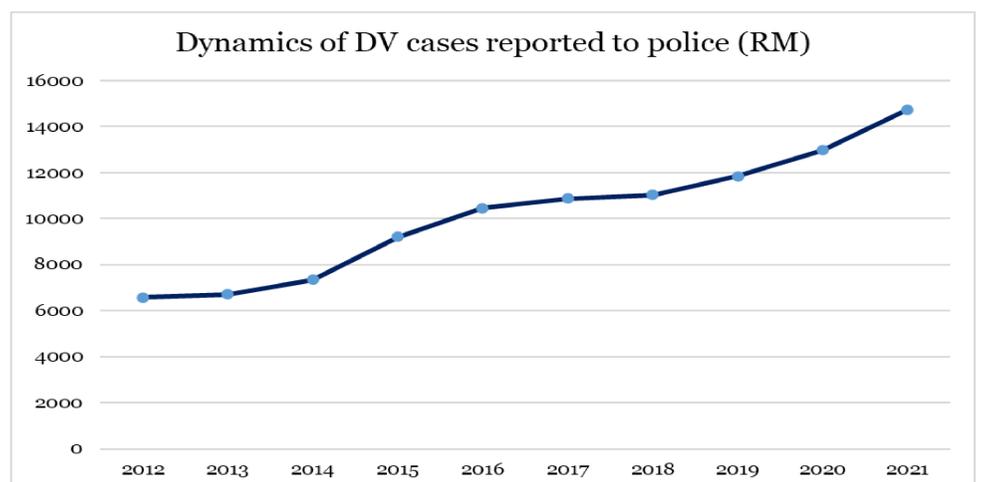


EXTENT OF DOMESTIC VIOLENCE IN THE REPUBLIC OF MOLDOVA

Andrei Pădure, Anatolii Bondarev, Vasile Șarpe, Eduard Lungu

Background and aims: Nowadays, domestic violence is one of the most common human rights violations and crimes worldwide. According to WHO (2013) 35% of women in a relationship or who used to be, have been subjected to physical or sexual violence perpetrated by their intimate partner during their lifetime. The Council of Europe reflects that about 45% of women have experienced some form of violence during their lifetime. The present study aims to show the current situation concerning domestic violence in the Republic of Moldova compared to the European Union countries.

Methods: EU and national information concerning domestic violence have been analyzed. Statistical data provided by the Ministry of Internal Affairs (MIA) and Centre of Forensic Medicine (CFM) for the last 5 years (2017-2021) have been considered.



Results: A recent survey conducted by the OSCE shows that 73% of women in the Republic of Moldova have experienced at least one form of violence perpetrated by intimate partners, the most common form of violence being psychological (71%), followed by physical one (33%). Based on the MIA data, there is a steady increase of reported cases from 10871 in 2017 to 14728 cases in 2021. According to the CFM, the number of physical domestic violence victims subjected to forensic medical investigations is 6425 cases in 2017, 4331 in 2018, 5328 in 2019, 4053 in 2020, and 3904 in 2021.

Discussion - Conclusions: The rate of domestic violence victims in the Republic of Moldova is much higher than the EU average. The number of medico-legally examined victims is lower than that of reported cases due to the professional competence of forensic medical investigations being limited to the examination of only physically abused victims. Despite the increased number of reported domestic violence cases, this social phenomenon is still underreported in the Republic of Moldova.

Congenital Injuries Amniotic Band Syndrome (ABS)

Abstract

Introduction

Focal ring constrictions of the extremities and actual loss a digit or limb are rare complication. Their gebesis is debated. Strecker (1930) and others since, maintain that localized failure of germ plasm usually is responsible for the abnormalities. Torpin (1968) and others contend that the lesions are the consequence of early rupture of the amnion which then forms adherent tochs bands that constrict and at times actually amputate an extremity of the fetus. Occasionally the amputated part may be found within the uterus. Congenital POSTURAL DEFORMITIS: Mechanical factors arising from chronically low volumes of amniotic fluid imposed by the small size and inappropriate of deformity, including talipes or clubfoot, scoliosis and hip dislocation (Miller and coworkers, 1981) Hipoplastic lung also can results from oligohydramnios (Chap. 31.p,822).

According to the literature two theories explain why it happens. First is the **intrinsic** or internal theory according to which the cause of amputations and deformities is the vascular endothelium (the inner layer of blood vessels) which disrupts blood circulation in the extremities or in the affected organs. The other theory is the **extrinsic** or external theory which is based on the mechanical blockage of blood circulation in the extremities due to being caught by the amniotic bands or the rings formed by the rupture of the membrane when the part of the body slides into the cavity between the two layers of membranes.

Diagnosis: The exact determination of the morphological parameters of the fetus and especially the presence or absence of defects can be determined in the morphological ultrasound examination (ECHO) in the 18-22nd week of pregnancy and can be confirmed by histological examination.

Discussion-Conclusion: Both presented cases are with extrinsic mechanism and confirmed with histopathology examination

Key words: ampute, amniotic band



First Case



Second Case

Authors: Elmas Shaqiri, Arben Lloja, Anton Samarxhiu

INTRODUCTION

Fingerprint, which dates back to 200 BC, is one of the indispensable methods of forensic scientists in identification. Fingerprints were initially used as a signature, but its characteristic was noticed over time and began to be used in identification. Fingerprint analysis is the most preferred identification method because it is less costly than other methods, short analysis time and most importantly reliability.

After death, there are changes in the skin that make fingerprinting difficult. Taking fingerprints from mummies as a result of dehydration of tissues and organs also has a unique protocol. Mummified tissue becomes rigid and shrinks. Rehydration of the rigid and shriveled tissue is required before fingerprinting. Various methods are used to take fingerprints from a mummified body. The most common method is rehydration of the fingers with sodium carbonate solution followed by dusting and taking of fingerprints with lifting tape. This study aimed to explain "fingerprinting from mummified bodies and current methods".

LITERATURE REVIEW

Reference: Year and method	Solution composition
1921: Ruffer	Distilled water (5 parts); absolute ethanol (3 parts); aqueous sodium carbonate 5% (2 parts)
1949: Graf	Glycerin (5 parts); acetic acid 10% (5 parts)
1955: Sandison	Aqueous formaldehyde 1% (5 parts); ethanol 96% (3 parts); aqueous sodium carbonate 5% (2 parts)
1968: Giacometti	Sodium chloride 0.9% (saline)
1972: Richardson	Saturated sodium chloride solution; sulfuric acid 50% (2 drops)
1977: Ishibashi	Aqueous sodium hydroxide 5% (100 mL); glycerin (3 mL)
1977: Gordon	Ethanol 70% (70 mL); glycerine (30 mL); sodium dithionite (1 g)
1981: Turner	Saline; Comfort [®] fabric softener 0.2%
1984: Kleiss	Aqueous sodium carbonate 5%
1985: Fulcheri	Undiluted, inactivated human blood serum at 48°C
1986: Zugibe	Acetic acid 1%; Coleo [®] detergent; disodium ethylenediamine tetraacetic acid (EDTA pH 7.5 adjusted with 0.1 N hydrochloric acid)
1987: Walker	Distilled water (684 mL); 95% ethanol (316 mL); sodium carbonate (10 g)
1988: Piepenbrink	Glucose solution 15%
1988: Haglund	Metaflow [®] and Restorative [®] mixed 1:1 (Dodge Chemical Company)
1994: Wiest	Formaldehyde 2% (9.5 parts); Brij [®] solution (0.5 parts); aqueous caustic potash 1% (potassium hydroxide solution)
1995: Watanabe	FLESHSTONE [®] (formalin 28%, glutaraldehyde 14%) (IMS Co.) TIOAR-330 [®] (formalin 30%, methanol 15%) (IMS Co.)
1997: Grupe	DMSO 5% in Tris buffer (pH 7.6)
2001: Kahana	Ammonium hydroxide 25%–50% (after fixation in ethanol 96%)
2007: Uhle	Boiling water (sequential dipping)
2008: Fields	Warm running water (with physical manipulation)
2011: Iwakami	Sofner [®] (methanol 5.5%, ethylene glycol 11%, EDTA 16%) (ESCO Co.) LITHOL Index32 [®] (formaldehyde 32%, methanol 5.7%, ethylene glycol 5.5%) (ESCO Co.)
2017: Hernandez	Aqueous sodium hydroxide 3%

Table 1: Summary of rehydrating solutions from literature (2)

Recent articles on fingerprinting from mummies were searched. International journals were reviewed, and a detailed literature review was made.

In the study of Fernandez et al., unlike classical methods, successful results have been obtained with pineapple and papaya juice which they inspired from meat marination for finger rehydration.

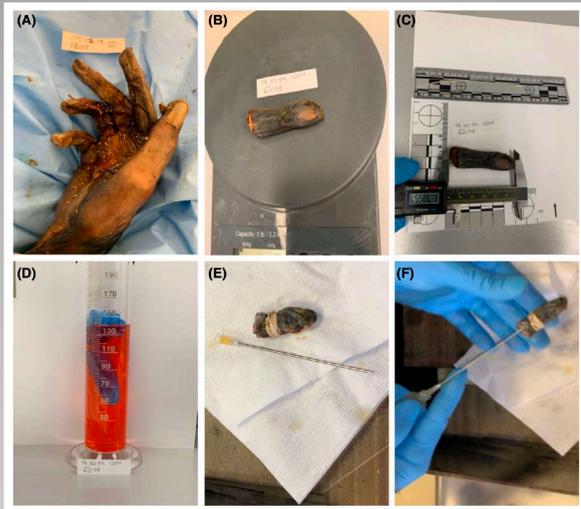


Figure 1: Procedures applied to the hand taken from the corpse (3)

The mummified remains were collected from Los Angeles County. Fingers were immersed in fruit juice and volume distention was facilitated with a syringe after amputation, tenderization, and volume distention. The length and width of the fingers were measured with a digital caliper to obtain surface area estimates before and after the procedure. Fingers were massaged to ensure even expansion of the fingerprint area. After collecting finger dimensions again, biometric features were captured with ink-based fingerprint techniques.

During the experiment, Fisher Scientific's 3% NaOH solution was also used for rehydration, but the process failed because the solution was too corrosive. In addition, better rehydration results were obtained from pineapple juice than papaya juice.

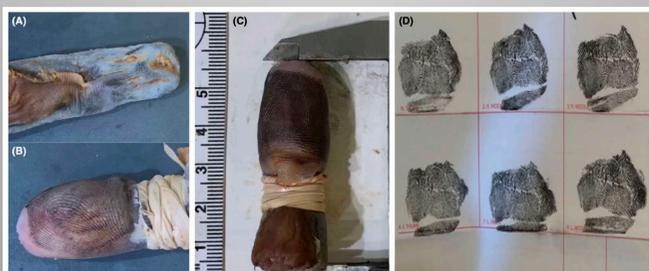


Figure 2: Fingerprinting steps (3)

Fernandez et al. recommend this method because it is economic and materials are accessible, while also minimum risk of epidermal tissue damage.

In the study of Iwakami et al., hands were cleaned with physiological saline and then three restoration reagents were used for rehydration: A (sodium hydroxide-glycerin); solution B (sodium carbonate); and solution C (TIOAR-330[®]: formalin 30%, methanol 15%). Another two commercially available embalming agents; Sofner[®] (methanol 5.5%, ethylene glycol 11%, ethylene diamine tetraacetic acid 16%; ESCO Co.) and Special Arterial Chemical- LITHOL Index32[®] (formaldehyde 32%, methanol 5.7%, ethylene glycol 5.5%; ESCO Co.), were also used to recreate the fingerprints. Fingers were left in different dilutions of solutions and for different durations. When all the specimens were well restored, fingerprints were taken by the inked impression method and by an indirect method using silicone rubber.



Figure 3: The finger treated with solution B for two days (1)

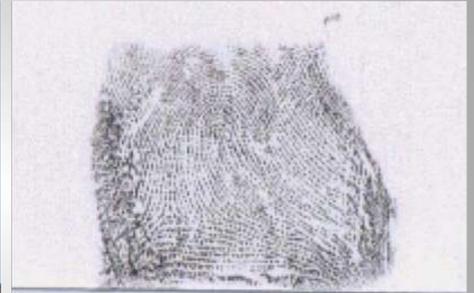


Figure 4: A fingerprint of the finger treated with solution B for two days, taken by inked impression method (1)

- Although the fingers using Solution A were adequately rehydrated, the marks from these fingers were not clear. Two days later, clear traces were obtained from the fingers using Solution B.
- The solution didn't affect the dermis during the procedure, because its corrosive action on the skin was not strong.
- In fingers using solution C, softening and swelling remained insufficient, and the dermal ridges were ill-defined.
- Well-defined fingerprints were obtained from fingers using Sofner[®] and LITHOL Index32[®] (excluding 6% diluted) solutions.

The best results were obtained from B and Sofner and thus the police successfully identified the cadaver.



Figure 5: Fingerprinting steps (4)

According to Morgan et al., the baby powder method is the most efficient method in cases where there is less wrinkling. However, the transillumination method should be used in cases where wrinkling is excessive. In this method, when rehydration is required, the procedure was performed as previously reported in the literature, and baby powder is applied to the finger pad. The fingerprint brush should then be used to lightly brush away any excess powder.

Adrian et al. obtained efficient fingerprints with the solution they prepared in their study in South Africa. After the fingers were left in the solution at room temperature for 24–72 h, they were dried and fingerprints were taken. In instances where print quality was still problematic, the fingerpads were removed with a scalpel and placed in fresh solution for 4–24 h. The rehydrated fingerpads were then printed using either powder and tape or the ink and roll method.

In Adrian's study, more efficient results were obtained with the D_{sol} (5g sodium carbonate in 100 mL dH_2O , 5 mL acetic acid in 100 mL dH_2O) solution than the W_{sol} (684 mL dH_2O , 315 mL ethanol, 10 g sodium carbonate) solution was prepared as per Walker et al. Although the finger used in W_{sol} was sufficiently rehydrated, deep wrinkling caused the fingerprint to not be obtained efficiently. On the other hand, D_{sol} reduced deep wrinkling and thus detailed fingerprints were obtained.

According to Adrian, sodium carbonate softens the mummified tissue, but it couldn't sufficiently plump the shrinking tissue. Acetic acid caused excessive swelling of the tissue, and the ridge detail was detrimentally affected by this.

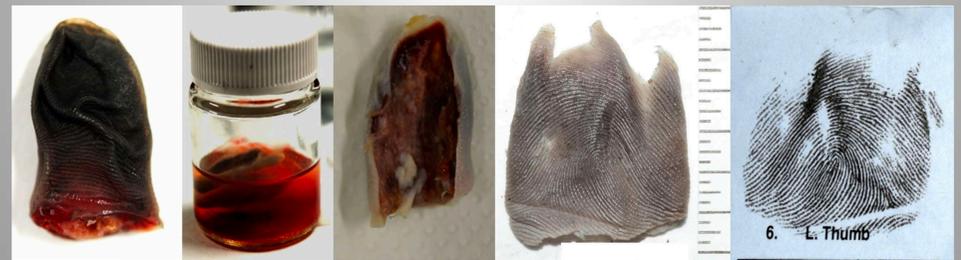


Figure 6: Fingerprinting steps (2)

The body was identified within a month through an AFIS match.

DISCUSSION-CONCLUSIONS

Identification of mummies is very difficult. Fingerprint identification is a preferred method as it is a fast, cheap and effective method. In this study, fingerprinting techniques from mummies that provide great convenience for forensic scientists, are explained and recent developments are discussed.

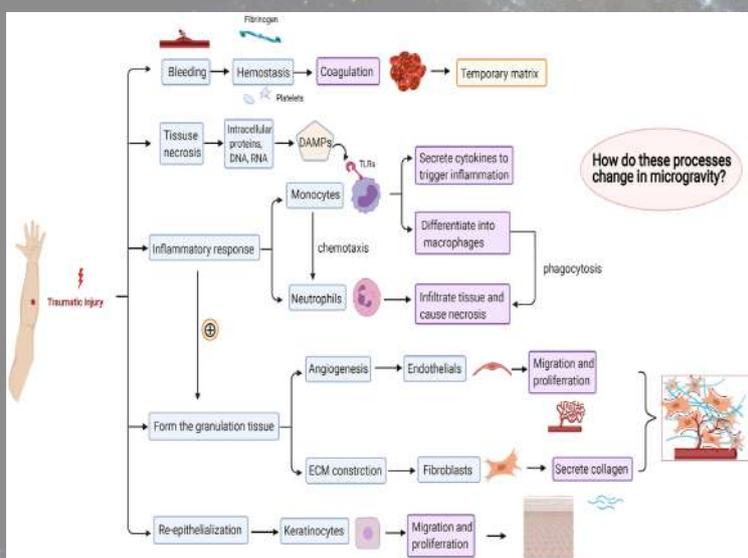
Forensic Approach to Wound Healing in Space (Microgravity)

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2. Tokat Forensic Medicine Branch Directorate, Ministry of Justice
3. Bg. Investigation Services
4. Kırklareli University, Department of Forensic Medicine

Introduction

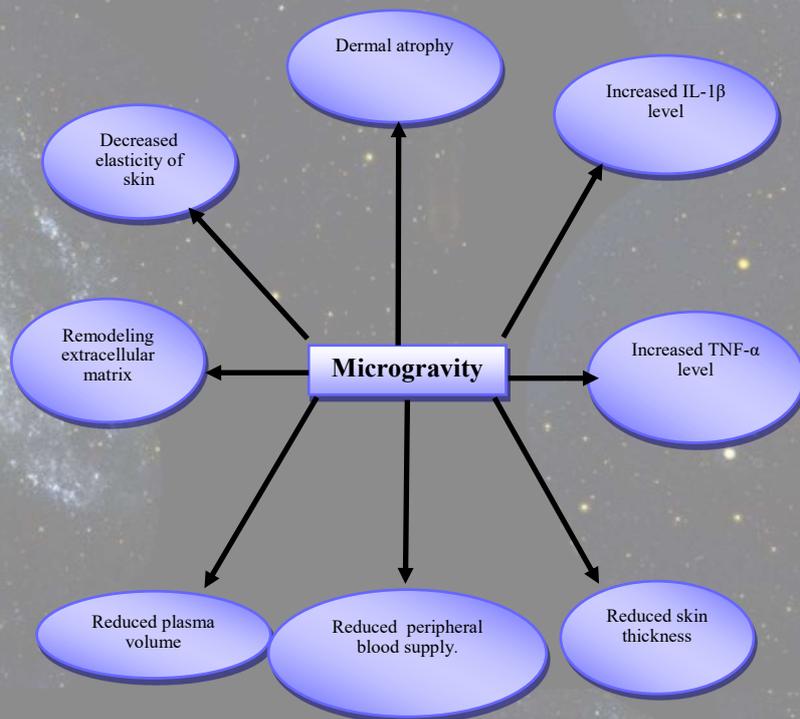
Wound examination is one of the most important matters in forensic medicine. There are several pieces of research discussing how it is affected the organs and systems of the human under microgravity conditions in various branches of medicine. We think that it is time to discuss forensic medicine applications in new settings in the space age we live in. One of the most common complaints of astronauts in the NASA-Mir Orbital Space Program is skin related.



Method and Material

We reviewed the changes in the microgravity conditions of the factors that may affect the formation of wound healing with the literature.

Results



Discussion and Conclusion

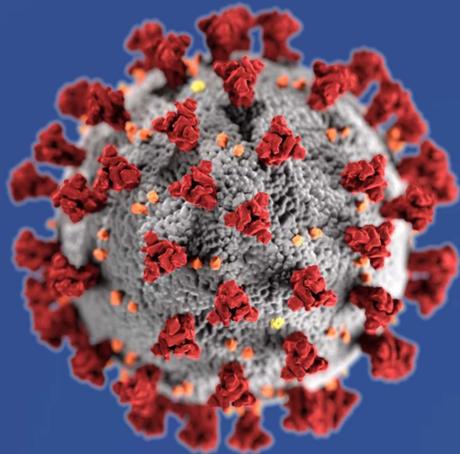
Reduced peripheral blood supply, reduced plasma volume, reduced skin thickness and dermal atrophy can lead to slowing the rate of healing of skin wounds. And this will change wound age estimation along with answers of whether it was caused before, at the time of, or after death; what amount of force was required or produce it; what degree of injury has resulted from it and whether it has influenced death or caused disability. Decreased elasticity of skin and remodeling extracellular matrix will require a different perspective from conventional approaches in estimating the type of crime weapon and the location of entry and exit of gunshot wounds. Under normal gravity, TNF- α and IL-1 β are available markers for wound age determination. TNF- α and IL-1 β began to rapidly elevate and reached a peak at 3 h after wounding. However, the peaking time and peak level will change under microgravity conditions. Some of the studies carried out were obtained from simulated studies, using experimental animals and short-term exposure to microgravity. And these factors are among the factors that make it difficult to reach the result. In addition to all these, it is a matter of curiosity in terms of forensic medicine whether livor mortis, which occurs due to gravity, will occur under microgravity conditions. Forensic medicine looks like black holes in space and more research needs to be done to elucidate it.

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COMPARISON OF SUICIDE RATES DURING THE COVID-19 PANDEMIC AND THE 10 YEARS PRIOR IN SPLIT-DALMATIA COUNTY

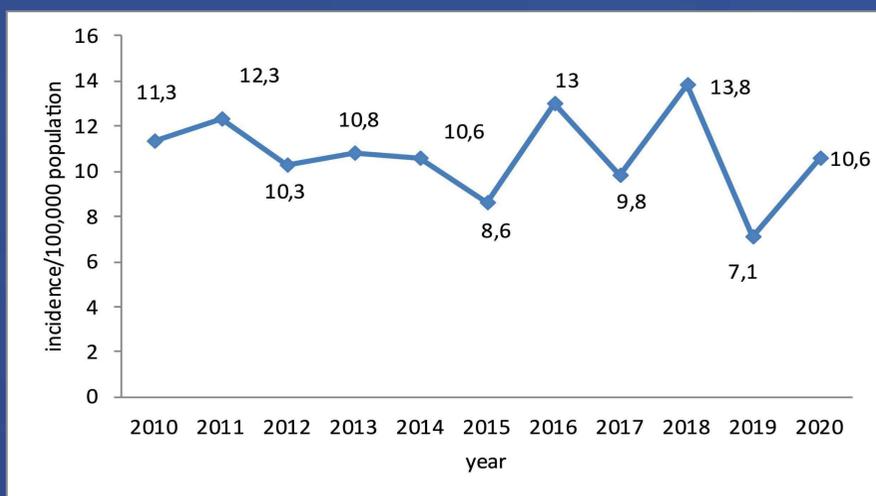
Gabriela Chatzigeorgiou, Marija Definis, Kristijan Bečić



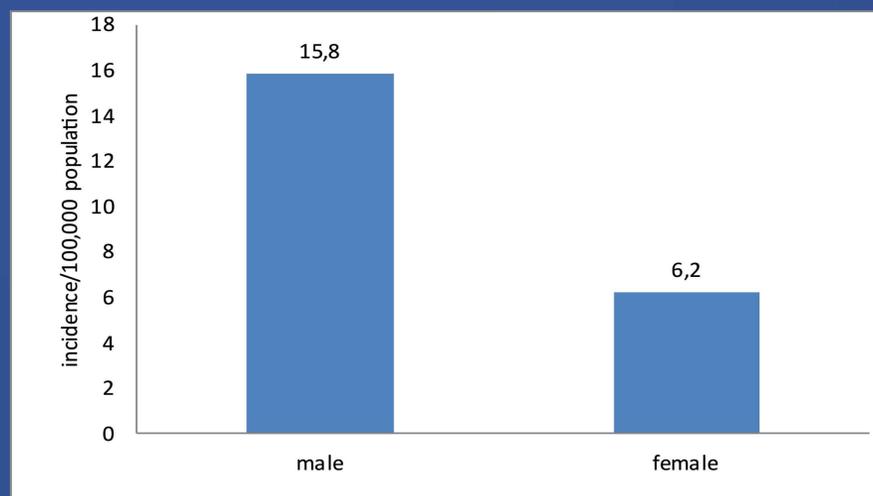
Objectives: The aim of this study was to investigate and compare suicide rates during the COVID-19 pandemic and the 10 years prior in Split-Dalmatia County, Croatia by parameters like age groups, gender, place, cause of death and type of suicide.

Subjects and methods: Total of 482 cases of suicides in Split-Dalmatia county from January 1 st 2010 to December 31 st 2020.were analyzed and categorized by age groups, gender, place and cause of death.

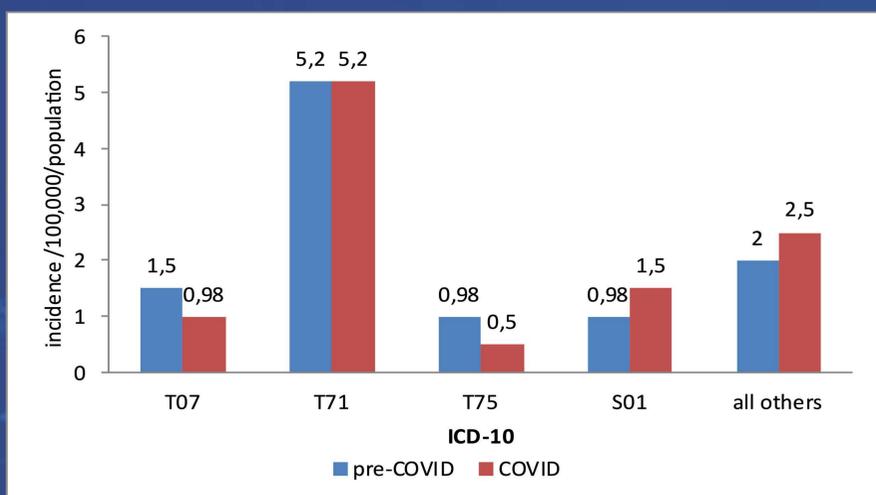
Results: In Split Dalmatia County 482 suicides were reported from 2010 to 2020. The youngest person committing suicide was in the group from 10-14 years of age, the oldest person committing suicides was older than 85 years. There was no statistically significant difference in suicidal rates / 100,000 persons / per year between pre-COVID period and COVID-year. The incidence of suicides in males was 2,5 times higher than in females. There was no statistically significant difference in incidence of suicides in men between pre-COVID and COVID period as well as in women. There was no statistically significant difference of suicidal rates according to age groups between pre-COVID and COVID period, except for 25-29 age group (suicidal rate during the COVID period was 3,4 times higher than during pre-COVID period). Deaths caused by hanging and jumps from height were most often mechanisms of committing suicide. The suicidal rate caused by hanging and suffocation was 2,9 times higher in males than in females, equally represented in pre-COVID and COVID period.



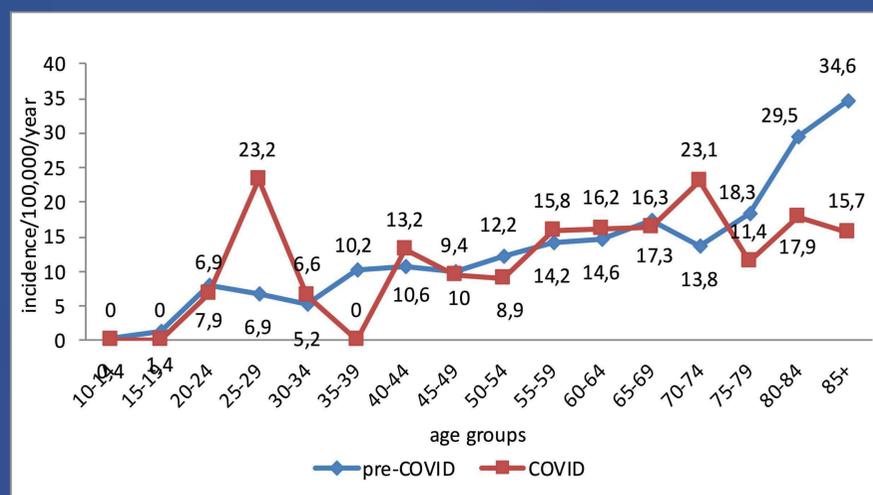
Incidence per 100,000 population / year from 2010-2020 in Split- Dalmatia County



Incidence of suicidal rates compared in male and female population from 2010-2020 in Split-Dalmatia County



Causes of death compared Pre-COVID and during the COVID pandemic in Split-Dalmatia-County



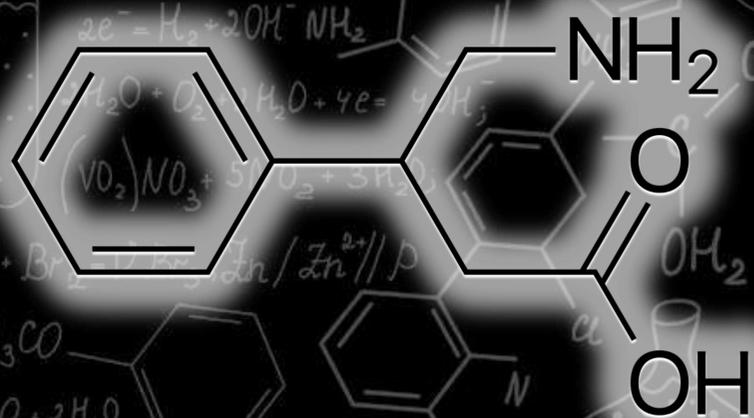
Incidence of suicidal rate in different age groups before the Covid pandemic and during the COVID pandemic in Split-Dalmatia County

Conclusion: The main difference in pre-COVID and COVID period in suicide incidence was in the age group 25-29, probably due to the fact that people in that age group are considered young enough to still go out as well as mature enough to start a family, both of which were impossible due to the lockdowns. We also shouldn't neglect the possibility of psychic diseases onset at that age group.

FATAL PHENIBUT INTOXICATION: A CASE REPORT

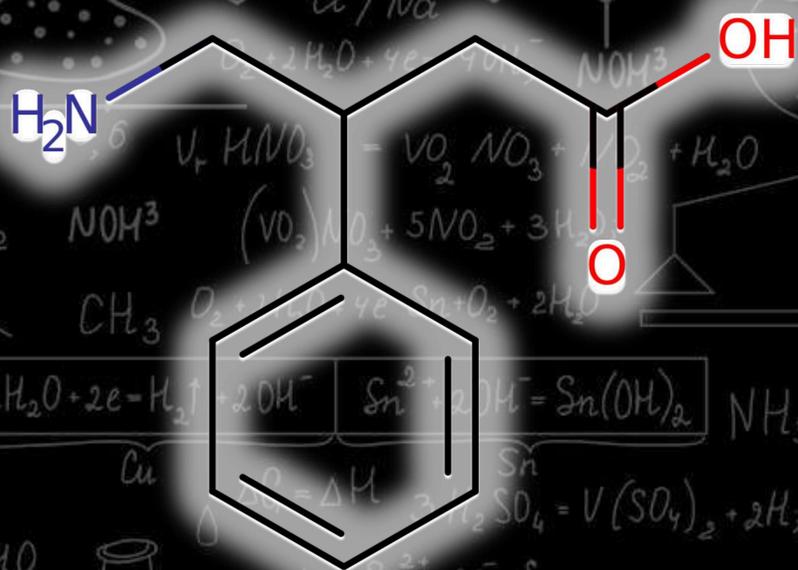
Marija Definis, Kristijan Bečić, Davorka Sutlović

Phenibut (β -phenyl- γ -aminobutyric acid) is a psychoactive GABA analogue, advertised as a supplement that could be easily found on the internet. Its use can cause a variety of side effects, potentially very serious, including coma and even, although rarely, death.



We present the case of a 17-year-old man who was brought to the Emergency Department under the suspicion of intoxication with unknown psychoactive substance. He was in altered mental status: severe agitated, disoriented, aggressive, with tachypnea, tachycardia and hyperthermia. In addition, the PCR test was positive on SARS-CoV-2 and he was admitted to the pediatric intensive care Covid unit. Multiple sedative medication, including haloperidol, was given, and, as he remained agitated, the physical restraint was required.

He died one day later under the clinical picture of multiorgan failure and assuming malignant neuroleptic syndrome as a cause of death. It was later discovered that he had consumed phenibut which he had illegally purchased in the local gym and used from time to time with other exercisers. Gas chromatography and mass spectrometry analysis confirmed the presence of phenibut in serum and urine. The histological findings demonstrated acute cerebral and pulmonary oedema with pulmonary hemorrhage, typical for drug intoxication.



This was the first case of fatal phenibut intoxication in Croatia and highlights the need for clinicians to be aware of new psychoactive substances (NPS) toxicity. It is worth mentioning that taking accurate histories are essential in making the correct diagnosis and proper treatment of patients in such cases. Although phenibut was prohibited in Croatia in 2019, this case confirms again the necessity of better legal control of such NPS that could be freely and easily bought through online retailers and distributed further. Moreover, educational efforts should be put to increased awareness especially among young population regarding harmful health effects and potentially fatal outcome in phenibut exposures.

THE ROLE OF MEDICO-LEGAL INVESTIGATION IN ESTABLISHING THE CIRCUMSTANCES OF PHYSICAL TORTURE

Toporet Natalia

Introduction.

The security and well-being of people are of the concerns of modern society and the entire international community is involved in promoting them. Specialists from various scientific fields such as social, medico-legal, and legal have as their permanent objective the assurance of human rights and, in particular, the right to physical integrity. One of these fundamental rights is the right not to be subjected to inhuman or degrading torture.

Torture is one of the most serious violations of human rights, prohibited under any circumstances. Its prohibition has been stipulated in various international human rights treaties which protect people from violations of their physical and mental integrity. According to the General Prosecutor's Office from the Republic of Moldova, 12 criminal cases of torture were opened in 2021 out of 217 investigations carried out by the Centre of Forensic Medicine concerning people who claimed to be physically assaulted by public officials. Unfortunately, cases when people are physically abused by the state representatives, such as policemen, still exist. The following case can serve as an example of the above-mentioned.

Methods:

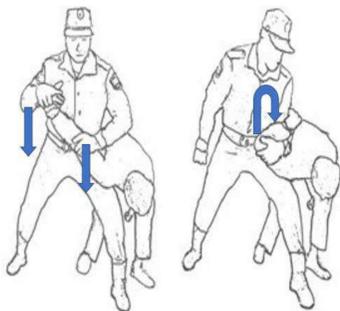
a case from the author's practice that shows the role of medico-legal investigation in establishing the mechanism of injury and proving the circumstances of physical torture is presented.

Results.

The criminal case was started based on the art. 166¹ of the Criminal Code for torture. According to the prosecutor's order at the moment of the arrest of a young man he suffered bodily injuries. During the interview, the 37-year-old man said that the day before, he had fallen with support on his right arm. Although the victim stated he fell on his right arm, doubts regarding this circumstance arose during the criminal investigation and a medico-legal examination was ordered.

During medico-legal examination following injuries were noticed: Ecchymosis and post-traumatic edema at the level of the right cubital fossa and oblique intra-articular fracture of the coronoid apophysis of the right ulnar bone (Img.3). In accordance with the scientific literature, such fractures are caused as a result of forced extension and excessive twisting of the limb in the elbow articulation. The injury infliction due to the victim's fall was excluded. Fractures of the tip of the coronoid process result from (sub-)luxation of the elbow or a posterolateral rotatory force whereas fractures to the anteromedial facet are attributable to excessive rotational. The injury infliction due to the victim's fall was excluded.

Fractures of the tip of the coronoid process (Img.2.,4) result from (sub-)luxation of the elbow or a posterolateral rotatory force whereas fractures to the anteromedial facet are attributable to excessive rotational (Img. 1).



Img. 1. Hand, forearm, and elbow immobilization techniques



Img. 3. X-ray of the elbow joint of patient P. showing fractures of the coronoid apophysis of the right ulnar bone.

Img. 2., 4. Fracture line of the coronoid apophysis

Discussion - Conclusions:

The injuries reflected the training mechanism, confirming the prosecutor's doubts. In this case, the medico-legal investigation allowed the establishment of the injury infliction mechanism and excluded one of the investigation versions. Thus, it became possible to establish the circumstances of the criminal event and demonstrate the excessive application of force by the police and the act of torture.

KEYWORDS

medical malpractice, forensic medicine, Caesarean Section, foreign body, reproductive disability

ABSTRACT

Retained surgical bodies are any foreign bodies left inside the patient after the operation and in general, a further procedure is necessary. The consequence of foreign bodies after surgery may manifest in different forms immediately after the operation, months, or even years after the surgical procedure. The discovery of foreign bodies after surgery commonly occurs due to non-specific complaints. The retained bodies can present as a mass usually in the abdominal cavity and are diagnosed during a routine radiological examination. If patients complain in the period after the operation of pain, frequent infections, and a palpable mass, this suggests the presence of retained surgical bodies. Regarding the type of retained surgical bodies, gauzes are the most many foreign bodies retained in the human body after surgery, being in body cavities such as the abdomen, pelvis, and retroperitoneal space. These gauzes may remain in the body for days, months, or even years before manifesting as inflammatory reactions.

Good communication within the surgical team is a major factor to minimize the number of surgical bodies left after operations in the body cavity. Therefore, to eliminate the occurrence of retained bodies, the surgical team must work together to ensure a safe operation and good post-operative outcomes.

INTRODUCTION

A convenient example of medical malpractice is forgetting a foreign object inside the patient's abdominal cavity. Retained foreign object could be a surgical tool, instrument, or material which is unintentionally left inside the body cavity after an operation. This could cause serious post-operative health complications which can be life-threatening, therefore, follow-up surgeries are generally necessary to remedy retained foreign bodies.

METHODS

Computed tomography, magnetic resonance tomography, histological examination, clinical examination.

CASE REPORT

In 2012, a 14-year-old woman underwent an emergency low cervical caesarean section with no intraoperative complications established. Revision of the uterine cavity was performed manually and with a gauze. The uterus and abdominal wall were closed layer by layer. After a few days the patient and the newborn were dehospitalized in good clinical condition.

Months later, pain in the lower abdomen occurred so the patient repeatedly visited different specialists, who diagnosed her with acute salpingitis and oophoritis, and conservative treatment was undertaken.

Over the years, the infection has developed more and more. In 2018, in connection with prolonged menstrual bleeding and irregular menstruations, the patient was examined by an obstetrician-gynecologist, who palpated a tumor formation above the symphysis, assessed as a cyst.

In 2019, an operation was performed, and the presence of a foreign body was found – a gauze compress. Multiple adhesions obliterating the pelvis, bilateral purulent salpingitis, abdominal abscess and bladder fistula were established. Due to the severe inflammatory process from the foreign body in the pelvis, pyosalpinx was developed and the fallopian tubes were removed. A reproductive disability was caused.

RESULTS

During the surgical delivery, a gauze compress without a signal metal fiber was left by mistake in the operative field. Severe life-threatening complications have developed as a result of this forgotten foreign body in the abdominal cavity. The only treatment for a forgotten foreign body in the operative field is a follow-up operation. It was performed years later after developing a severe inflammatory process which caused the fallopian tubes to be removed. Because no gauzes with a metal fiber were used during the caesarean section, this may explain the misdiagnosis of the foreign body on the imaging examinations. Magnetic resonance imaging could only confirm the presence of forgotten foreign body, but it was not performed.

DISCUSSION

A gross violation of good surgical and midwifery practice was committed by the medical crew engaged with the Caesarean section performed in 2012. It is absolutely mandatory to count all the gauzes used before the procedure and before layered closure of the abdominal cavity. In this particular case the forgotten gauze compress in the operative field led to development of severe inflammatory processes with the removal of patient's fallopian tubes causing reproductive disability.

CONCLUSIONS

To ensure reliability in the absence of medical malpractice, and to minimize the number of surgical bodies left after operations in the body cavity, good communication within the surgical team is needed to ensure a favorable outcome for the patients. It is a mandatory condition for implementing good clinical practice.

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KEYWORDS

medical malpractice, autopsy, gunshot injury, acute abdomen, emergency medicine, forensic medicine, peritonitis, laparotomy

ABSTRACT

Gunshot wounds are common in forensic practice. The specific features of gunshot wounds usually make it easy to determine the entrance and exit wound. But what is more important, when recognized, the proper actions must be undertaken in order to ensure the most favorable outcome for the patients.

This is a dangerous, life-threatening condition, and immediate medical attention is required by a team of multidisciplinary specialists including a surgeon, a nurse, an anesthesiologist, a radiologist, etc. The reaction of the emergency team at the crime scene plays an important role in the rapidity of transportation of the patient into the hospital.

INTRODUCTION

Every gunshot wound by itself represents a dangerous life-threatening condition and possible traumatic injuries to the internal organs should be taken into consideration. Good medical practice is providing medical assistance to ensure a favorable outcome for the patients. From a forensic medical perspective, we present a case that is an example of a series of improper actions and wrongful behaviors by the medical staff, engaged in the diagnosis and treatment of the patient.

METHODS

Computed tomography, histological examination, clinical examination, surgical procedure.

CASE REPORT

A 60-year-old man following alcohol abuse finds a rifle on the street and by accident, self-shot himself in the abdomen and right hand. He goes back home, and his sister calls the emergency services immediately. The emergency crew arrives without a doctor but consisting only of a nurse and a driver. Because it concerns a gunshot injury, the police authorities were also notified. The medical examination was carried out by the nurse. After a telephone consultation with a doctor on duty, she probes the gunshot wound and determines that the wound is superficial. The wound was treated, and the emergency crew left the patient's home.

Due to non-response to the applied treatment, a second call for emergency followed, but it was rejected because of a lack of available emergency crew. In a document we received later in the preparation of the forensic expertise, it was confirmed that at the same time, the emergency crew was engaged in fact with another emergency patient. A couple of hours later, the patient's condition was getting worse, so the police authorities arranged transportation to a hospital. An urgent surgical treatment was undertaken. A laparotomy was performed, which revealed a blind gunshot wound from a small-caliber firearm weapon, penetrating the abdominal cavity and affecting the liver and the small intestine in three areas, with a development of total feculent peritonitis. A single lavage was performed, and the abdominal cavity was closed.

The next day after hospitalization, a fatal outcome for the patient occurred from multiple organ failure as a result of total feculent peritonitis.

RESULTS

With an autopsy performed the forensic medical specialists made the conclusion that the cause of death was acute cardiovascular and respiratory failure developed as a result of total peritonitis, leading to multiple organ failure and intoxication. Peritonitis is a direct complication of a gunshot injury penetrating the small intestine in the areas and the liver. There is a causation between the accident and the cause of death.

DISCUSSION AND CONCLUSIONS

Every blind gunshot wound in the abdomen area is a life-threatening condition that requires emergency medical attention until it is established if internal organs and blood vessels are affected or not. It is a significant mistake to probe a gunshot wound especially in non-hospital settings. A nurse was performed the examination but not a doctor. A patient with an emergency condition was not hospitalized for an active treatment on time. The medical standard for emergency medicine was violated. The problem with lack of medical specialists was issued. Omissions in relation to the surgical treatment performed were also established. Layered closure of the abdominal cavity should not be carried out in case of total feculent peritonitis, but the abdominal cavity should be left open for continued treatment.

CONCLUSIONS

Good clinical practice requires applying for accessible, adequate, and highly qualified medical help. The lack of specialists in emergency medicine is increasing and reflecting on the quality of the medical attention. In order to ensure a favorable outcome for the patients, every case should be managed particularly and in considering to the patient's specific health conditions

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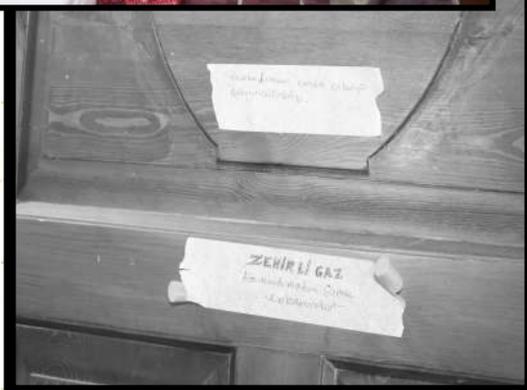
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A DECISIVE FINAL STEP BY CHARCOAL-BURNING- A CASE REPORT

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Introduction

Carbon monoxide is called the silent killer because it is an odourless, colorless and non-irritating gas. Charcoal burning suicide is one of the methods created with this gas and widely used in many countries (1). Suicide notes are one of the forensic arguments that provide information about the victim and contribute the determination of the cause and manner of death.



Case Report

A 44-years old man was found dead on 28th June in his home lying on the bathroom floor.

At the scene:

- There was a warning note on the door that said "POISON GAS!-Don't enter without ventilation"
- Bathroom door closed and door edge sealed with duct tape
- There was a hair dryer plugged into the outlet, which is thought to have been used probably to ignite the charcoal.
- The ventilation in the bathroom was also covered with duct tape.

The content of the letter:

- He mentioned it as a painful and repeating process for the occlusion in the person's vein.
- He wrote that he had been thinking about suicide for one year, but postponed it so as not to upset his loved ones, that he was happy to be dying.
- There was guidance on official actions to be taken so that their relatives would not be held responsible for their current debts.
- There was a request for forgiveness from Allah.

Medical records show that the person was diagnosed with deep vein thrombosis about two years ago.

At the autopsy:

- Cherry red livor mortis on posterior and head
- Pink-colored appearance in the lungs, heart and brain surfaces
- Anthracosis on the lung surface and sections
- No injuries were found

Discussion and Conclusion

The contribution of suicide letters for illuminating judicial events is still a controversial issue (2). However, the suicide notes, which should be interpreted together with the suicide mechanisms found at the crime scene, can make significant contributions to the psychological autopsy process (3)

It is not always easy to clear the doubts that arise about the cases that have decided to keep silent through death. In these cases, notes left at the scene may reveal important findings that make it easier for us to understand the underlying causes of suicide, as well as give information about the determination and current mood of the person. (4)

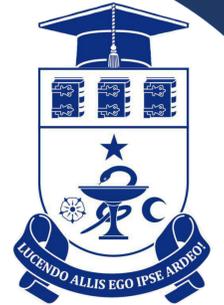
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Centre of Forensic Medicine

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Background and aims:

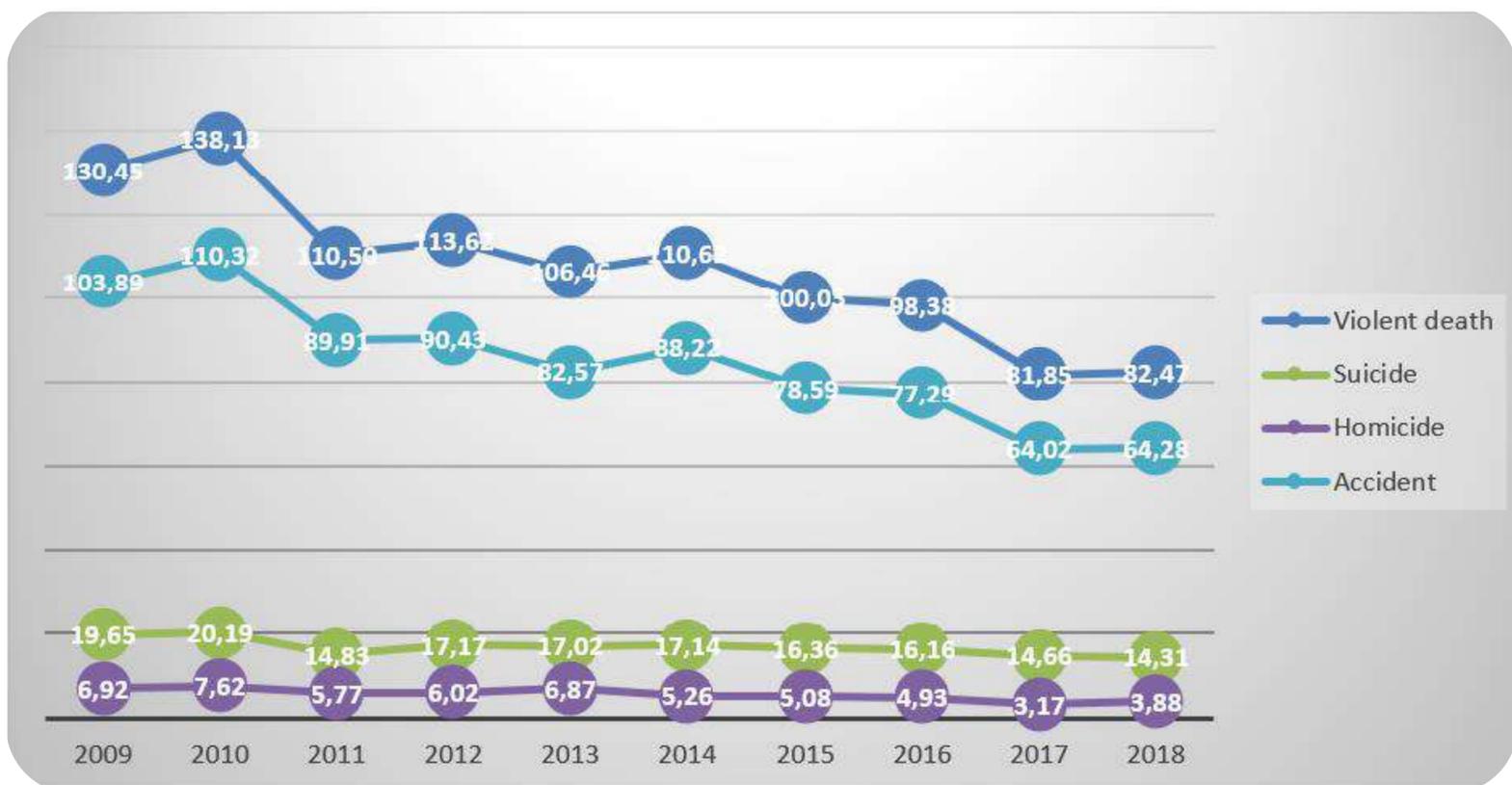
Public health surveillance is one of the main strategies of WHO, which is focused on monitoring, evaluation, prevention of all social phenomena, including suicide. Even if the suicidal phenomenon is researched for more than 100 years it remains a major public health problem, which requires systematic studies. Legal medicine remains one of the main data providers regarding suicidal death.

Methods:

The study is based on the descriptive, analytical, and statistical research of 36173 cases of violent death, including 5654 suicides from 2009-2018 years, examined in the Center of Forensic Medicine from the Republic of Moldova.

Results:

According to the analyzed data, violent death represents an average of 106.92 cases per 100 000 population aged 5 and above, which decreased in the investigated period from 130-138/100 000 to 81-84/100 000.



This decrease was mostly due to accidents rate, but the suicide one kept the same level. The average rate of suicide was 16.63% of the total number of violent deaths. The lowest suicide rate was noticed in children and minors aged between 5 and 19 years (4,15%) and in the elderly aged over 65 years (11,82%). The highest rate of suicide was marked in adults aged 50-64 (34,38%). The suicide rate in middle-aged people is lower (20-34 years old – 20,36%; 35-49 years old – 29,29%). The suicide rate in males from rural areas was higher.

Conclusions:

Despite the decreasing trend of suicide in the Republic of Moldova during the last 10 years, its rate is still higher than the global one. The suicide rate increases together with the person's age. Most vulnerable to commit suicide are 50-64 years old males from the rural area.

POST-MORTEM INVESTIGATION OF VISIBLE FACIAL TRAITS AS A PREDICTOR OF CARDIOVASCULAR DISEASES

Introduction

Cardiovascular disease is still one of the biggest single cause of death worldwide. To this date, many studies have explored new potential risk factors which could support the early detection and the management of this disease.

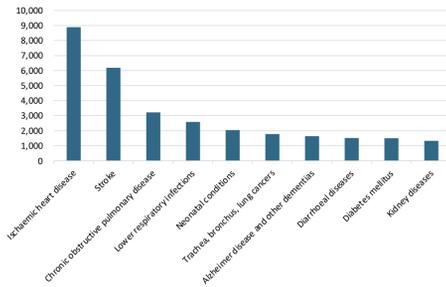


Chart 1: Global top 10 cause of deaths (000s) (WHO, Global Health Observatory).

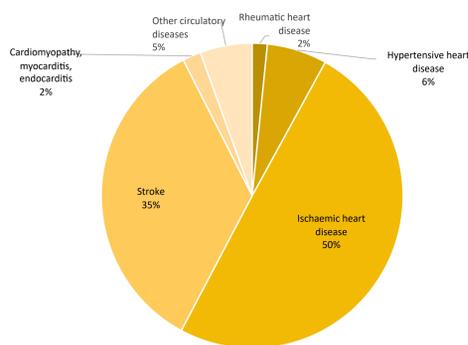


Chart 2: Type of cardiovascular diseases seen in 2019 globally (WHO, Global Health Observatory).

Arcus cornea is also known as arcus senilis is a grey-white or yellowish opacity, located near the periphery of the cornea but separated from the limbic margin by a clear corneal zone.



Figure 1: Typical full circle of arcus formation (Source : Vislisel, 2016)

Xanthelasma is a sharply detached lesion with yellowish flat plaque feature on the upper or lower eyelids. They are mainly located in the epidermis and frequently symmetrical.



Figure 2: Typical representation of Xanthelasma (Source: White 2010)

Diagonal earlobe crease (DEL) is a deep wrinkle or diagonal fold in the earlobe skin which starts from tragus and extends to the auricle.



Figure 3: Typical representation of earlobe crease (Source: Perez 2010)

Aims

This study aimed to explore,

- The prevalence of arcus cornea, xanthelasma and earlobe crease in an age independent post-mortem setting,
- The association between these parameters (individually or combined) with cardiovascular risk factors including age, gender, obesity, diabetes mellitus.

Methods

An audit study was designed to investigate post-mortem cases covering a coroner's area in London. Previous medical history and background data was collected from both hospital records and coroners' reports, when available. Cause of death was gathered from post-mortem reports and divided into cardiovascular disease related deaths/ non-cardiovascular disease related deaths.

Arcus cornea, xanthelasma and earlobe creases were determined by visual inspection during post-mortem external examination. For arcus cornea, grading system was used on the basis of its circumferential extension in cornea and graded 0 for no formation, 1 for full formation. Xanthelasma and earlobe crease graded as absent (0) and present (1) whether it is symmetrical or asymmetrical and visible on single or both eyelids.

Following data collection, a binary logistic regression model was used to analyse correlation between arcus cornea, xanthelasma, earlobe creases and cardiovascular disease. Using the same regression analysis, each potential risk factor was then evaluated against BMI, age, smoking and gender, in cardiovascular disease related cause of death cases.

For all analyses, p-value <0.005 were considered statistically significant.

Results

239 post-mortem cases were investigated during a 2- year period. Initial analysis of data of 239 post-mortem cases showed an age range between 16 to 97 years (mean: 66.7yrs). Among these, 97 were females and 142 males. Mean BMI was 27.1kg/m². The highest mortality was seen in the age group of 71-97yrs (113 deaths) of which, 56 were female and 57 were male.

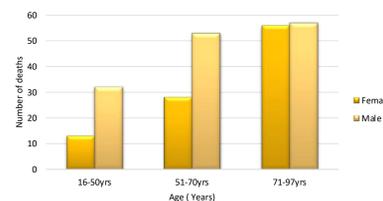


Chart 3: Overall mortality rate

Cardiovascular disease was found to be the most common single cause of death accounting for 39% of overall deaths and followed by respiratory disease related deaths with 25%.

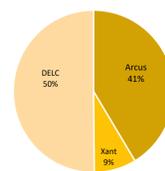


Chart 4: Incidence of Arcus cornea, Xanthelasma and Diagonal Earlobe crease

Results (cont)

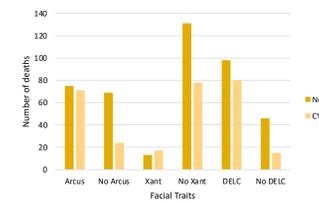


Chart 5: Prevalence of Arcus cornea, Xanthelasma and Earlobe crease among Cardiovascular and Non-cardiovascular disease related deaths

Potential factors	p- value	Odds Ratio	95% CI
Arcus cornea	0.001	2.7217	(1.5444, 4.7964)
Xanthelasma	0.047	2.1963	(1.0122, 4.7654)
DEL	0.006	2.5034	(1.3026, 4.8113)

Table 1: Logistic regression analysis of arcus cornea, xanthelasma and earlobe crease in cardiovascular disease related mortalities

Regression	Chi-Sq	P-value	Regression	Chi-Sq	P-value	Regression	Chi-Sq	P-value
Age	8.15	0.004	Age	9.94	0.002	Age	9.96	0.002
BMI (kg/m ²)	8.8	0.003	BMI (kg/m ²)	8.48	0.004	BMI (kg/m ²)	8.53	0.003
Sex	5.51	0.019	Sex	5.26	0.022	Sex	5.93	0.015
Smoking	0.53	0.466	Smoking	0.52	0.471	Smoking	0.5	0.48
Alcohol	3.36	0.067	Alcohol	3.6	0.058	Alcohol	3.72	0.054
Arcus	0.38	0.54	Xanthelasma	0.72	0.397	DEL	0.13	0.717
	Odds Ratio	95% CI		Odds Ratio	95% CI		Odds Ratio	95% CI
Sex	0.466	(0.2464, 0.8814)	Sex	0.4732	(0.2497, 0.8967)	Sex	0.4507	(0.2373, 0.8566)
Smoking	1.5783	(0.4633, 5.3761)	Smoking	1.5677	(0.4619, 5.3210)	Smoking	1.5526	(0.4575, 5.2695)
Alcohol	0.3849	(0.1387, 1.0678)	Alcohol	0.3739	(0.1352, 1.0337)	Alcohol	0.3687	(0.1338, 1.0163)
Arcus	1.2628	(0.5984, 2.6647)	Xanthelasma	1.4543	(0.6108, 3.4627)	DEL	1.1645	(0.5116, 2.6504)

Regression	Chi-Sq	P-value
Arcus	7.05	0.008
Xanthelasma	2.82	0.093
Earlobe Crease	3.32	0.068
	Odds Ratio	95% CI
Arcus	2.2377	(1.2345, 4.0558)
Xanthelasma	1.9814	(0.8914, 4.4046)
Earlobe Crease	1.901	(0.9528, 3.7929)

Table 2: Regression analysis of Arcus cornea, Xanthelasma and Earlobe crease combined with known cardiovascular risk factors

Discussion and Conclusion

- Logistic regression analysis results showed that all three traits have potentials to be markers in response to cardiovascular diseases (Table 1). However, CVD related deaths showed much higher Arcus corneal signs compared to other groups, therefore it has better potential of becoming a predictor for determining cardiovascular diseases. Combination of Arcus cornea together with age, sex, BMI, cigarette smoking, also revealed a significant association with cardiovascular diseases indicating its value of becoming better predictor than other risk factors.
- This study gave an insight of how arcus cornea, xanthelasma and earlobe crease can become potential predictors of cardiovascular disease.
- Limited number of cardiovascular caused deaths (95 in 239 cases) hindered the further investigation of arcus cornea in different age groups.
- It can be argued that since earlobe crease occurs more frequently than arcus cornea and xanthelasma with an increasing age, therefore its presence and relationship with cardiovascular disease can be overestimated. Therefore, investigation of all these three traits thoroughly in larger study population would be beneficial.

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ETHICAL DILEMMAS OF FORENSIC EXAMINATIONS OF PERSONALITY DISORDER

Izabela Filov



Background and aims

The implementation of the four main ethical principles (respect for autonomy, beneficence (benefit to patients), non-maleficence (not to harm) and justice, in the field of forensic psychiatry becomes complex especially when it has to be applied in the analysis of persons with personality disorder who commit a crime. The dilemmas arise because these individuals manifest problematic and unacceptable behavior on the one hand, and on the other hand, in terms of criminal responsibility, they are usually criminally responsible. Sometimes this leads to conflicting forensic assessments by two psychiatrists, a situation that is confusing for the court. This paper attempts to analyze some of these dilemmas.



Methods

Two forensic cases were processed, of persons who committed two different crimes- robbery and domestic violence.

CASE 2

A 33-year-old man with a history of drug addiction and pathological gambling. He entered the court proceedings for endangering the security of his wife.

The analysis shows that threats to the security of his wife, to whom he shows an obsessive attachment, consist only in verbal outbursts, but that he was never been physically violent.

His mental status reveals that he is a psychopathically structured person, with much more self-destructive symptoms, impulsivity and emotional immaturity.

In the first psychiatric examination, it was estimated that he committed the crime of "endangering security" fully capable of guilt and a measure of imprisonment was recommended, with the use of sedatives and psychotherapy to cope impulsivity.

In the second expertise, he was deprived of the capacity to commit crimes and was recommended to be treated in a hospital.

While the court proceedings are ongoing, "lucrative" attempts have been made to treat him, but it is evident that all this is manipulative and without respect for hospital procedures. Despite the treatment, the problematic behavior and constant criminal charges from his wife continue.

CASE 1

41-year-old woman against whom criminal charges have been filed for endangering the safety of a gynecologist from the local hospital. The woman is emotionally obsessed with the young doctor, so he loses his own composure trying to cope with her at first innocuous approaches, phone calls, texts. Over time, she becomes aggressive, meets him on the street with high-pitched speeches, enters his office, addresses his friends and partners. At the culmination of his refusals, she goes to his home and screams and threatens to kill him. He realized the threats by completely damaging his vehicle. During the judicial proceedings of the case, she violated her probation on two occasions, and after that she was sent for a psychiatric examination. In a psychiatric expertise, it was assessed that it is a personality disorder, with psychotic decompensation, and treatment in a psychiatric hospital was recommended. In another psychiatric examination, she was assessed as fully responsible and a prison sentence was recommended on the grounds that personality disorders are basically always capable of criminal liability. The third opinion confirms full capacity for guilt. After a short period, the doctor and his fiancée end up in the hospital injured in head blows with a stone. A new court procedure was conducted and the woman ended up in the hospital.

Conclusions

Psychiatric discrepancies when it comes to assessments of personality disorders are often the basis for creating confusion and difficulties in processing procedures.

The complexity of the personality disorder and their propensity for antisocial acts is clear, but the way of their medical and legal management is delicate and often questions ethical approaches in forensic expertise, because as in no other psychiatric condition, psychiatric assessments diverge radically.

The individual approach to each individual case and the acceptance of the influence of personality changes as crucial are the two main conclusions of this analysis.

The main question is what is the most effective response to antisocial behavior: is punishment or medical treatment the most effective way of preventing future crimes and protecting society?

Ethical aspects: the situation could be improved by including assessments and measures that will bring professionals closer to the most favorable outcome