

# Forensic Science Science International

An international journal dedicated to the applications of medicine and science in the administration of justice

## **Editor-in-Chief**

P. Saukko

## **Associate Editors**

A. Carracedo

M.Y. işcan

H.H. Laaksonen

P. Margot

C.H. Wecht

D.K. Whittaker

C.L. Winek

# **Consulting Associate Editor**

P.J. Lincoln

**ELSEVIER** 



# Forensic Science International

**VOLUME 136/SUPPL. 1 (2003)** 

# **Proceedings of the 3rd European Academy of Forensic Science Meeting**

September 22–27, 2003 Istanbul, Turkey



AMSTERDAM — LONDON — NEW YORK-OXFORD — PARIS — SHANNON — TOKYO

large and heavy in proportion to his or her body. For this reason, when a baby is dropped or thrown, he or she will tend to land on his head. 2. There is space between the brain and skull to allow for growth and development. 3. Babies' neck muscles and ligaments are weak and not fully developed. The problem is the many cases of SBS go unidentified because of the absence of external injuries, no witnesses to the event, and the failure of the abuser to admit his or her actions. In our paper we would like to present our experience in cases of SBS. We would describe tree cases with bleeding and contusion of brain and nervus opticus. In all tree cases children were injured by mothers.

Keywords: Child Abuse, Baby Shaken Syndrome, CNS

#### MED-WP-35 Forensic Medicine Evaluation of Early Pubescence

Alvydas Pauliukevicius and \*Romas Raudys, Institute of Forensic Medicine, Verkiu 7-110, Vilnius, 2024, Lithuania.

The laws of the Republic of Lithuania foresee criminal responsibility for having sexual relations with an immature person. In our country the pubescence begins approximately at 14 years of age and finishes at 18 years of age. The prosecution applied to the Institute of Forensic Medicine of Lithuania. They brought a 12 year old girl. The main problem that forensic medicine experts had to solve was to decide if the girl was pubescent. Usually experts of the Institute of Forensic Medicine define the pubescence of 14 - 18 year old persons and the persons under 14 are considered to be juvenile and not pubescent. But this case was exceptional - the girl had already borne and was raising a healthy child. During the investigation all the necessary medical information about the girl's state of health since her birth was gathered. It turned out that at the time when the girl was 1.5 years old her breasts began to grow and menstrual bleeding started. Since that time the girl had been examined and treated in the best hospitals of Lithuania and the former Soviet Union, she had undergone all the advanced medical testing as the doctors were trying to find an explanation to the signs of such an early pubescence. After having performed all the testing no tumors of pituitary gland or other pathology was discovered. The results of testing of her endocrine system and X-ray of bones reminded of those characteristic to elderly people. At last a rare diagnosis was made - idiopathic premature pubescence (pubertas praecox idiopatica). At present she is successfully raising her child, none troubles of the young mother and child's health has been observed. But at that time the issue under discussion was if the child's father had to be accused (at present he takes care and keeps the family). Forensic medicine experts had to solve a difficult problem - how to behave in such a situation.

Keywords: Child abuse, Premature Pubescence, Young mother

#### MED-WP-36

# Neonaticidium In Republic Of Macedonia Forensicomedical Aspects

\*Zdravko Cakar, Aleksandar Stankov, Aleksandra Gutevska and Goran Pavlovski, Institute of Forensic Medicine and Criminology. Medical faculty, University "St Cyril and Methodius" - Skopje, Republic Macedonia str. Vodnjanska no 19 1000 Skopje Republic of Macedonia.

Neonaticidium have existed in all epochs. It is always accompaniment with many different' social reactions and different ways of sanctions, as of historical also of geographical dimensions and so leading down to unsanctioned common low even to corporal punishment. Neonalicidium in Republic of Macedonia is sanctioned and it's noted in the 127 article of the Criminal low with the following contents: the mother with will deprive from life her child during the birth or immediately after, in the situation of derangement provoked

with the birth will be punish... In this study ore processed solely the medico forensic aspects of neonaticidium in the Republic of Macedonia. We analyzed 326 autopsies of neonates cases at the Institute of forensic medicine at the Medical Faculty of Skopje in the period of 1964-2000 year, which present average 8,81 case for one year. The most frequent way of carrying out of action is different ways of violent asphyxia, mechanical injuries which means active action. The passive neonaticidium is present with little percentage. The village regions because of old fashioned relations ant the level of civilization, is the most frequent place for neonaticidium. At the most number of cases the act is covered up with burring in the ground or with throwing in the water, septic tanks, trash cans and etc. It is to emphasize the fact that in recent ten years the number of the cases is significant reduced. This occurrence can be explained exclusive with forensic medical expert-opinion. Although neonaticidium with it's number doesn't represent deadly occurrence with own dimension of destroying the weak and dependent beings it will be always of interest not only for the court but also for the wide

Keywords: Neonaticidium active, Passive crimes scene



#### MED-WP-37

#### Urea and Creatinine as a Possible Drowning Indicator

\*Ani Dika, Ana Trifunova, Natasa Davceva, Biljana Janeska and Suzana Petrovska, Institute for Forensic Medicine and Criminology, Vodnjanska 19, 1000 Skopje, R. Macedonia.

Forensic determination of drowning as causal mortis on the basis of specific and unspecific signs of drowning can represent a problem especially at cases of drowning took out of water after specific period.

Besides of the method for determination of diatoms presence, which is used at the Institute for Forensic Medicine and Criminalistics in Skopje, the question is set whether the determination of concentration of urea and creatinine can also contribute in the posing of differential diagnosis.

Some data in the literature show that in some cases of drowning in fresh water, as a result of haemodilution, there is a difference in the concentration of certain biochemical parameters in the blood from the left and right heart chamber.

The purpose of this work is to evaluate the importance of determination of the difference in the urea and creatinine level in the blood took from the right and left heart chamber as an indicator for haemodilution in cases of drowning in fresh water.

In a one-year period 10 cases of drowning are analyzed as well as 10 non-drowning control cases, autopsied at the Institute for Forensic Medicine and Criminalistics in Skopje.

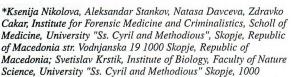
In the work are presented the results of the examination, the statistical processing and it was discussed the certainty of the application of this method in the determination of the cause of death in cases of drowning.

Keywords: Urea, Creatinine, Drowning

Skopje. Republic of Macedonia.

#### MED-WP-38

#### Presence of Diatoms in an Event of Natural Death



Diatoms, although often denied as one of reliable signs for drowning, together with other findings may help in determining the drowning as death cause. This shows a case where a dead woman is found



219

with a head drowned in a bath full of water in her apartment in city environment. During the autopsy were taken organs for making analysis for diatoms presence, procedure that is carried out whenever there is doubt for drowning. Although it was determined that the woman died by natural death, during the diatoms test it was found great number of present diatoms. The type and number of diatoms is confusing because the woman for a long time lived on a city area where the water does not contain diatoms.

Keywords: Diatoms, Cause of death, Drowning

#### MED-WP-39 Drowning in Eastern Crete.

\*Katerina Kanaki, Georgios Delaportas, Irini Margaritaki, Maria Christaki, Nikolaos Tzanakis and Emmanuel Michalodimitrakis, Department of Forensic Sciences, University of Crete, Heraklion, Crete, Greece.

This study took place at the Department of Forensic Sciences of the University of Crete.

The island of Crete (a touristic place) has a population of 650.000 habitants growing through the arrival of tourists during summer

approximately by 3.000.000.

We analyzed all the drowning cases occurred at the department of Eastern Crete (prefectures of Heraklion and Lasithi) during the years 1997-2000. Information concerning sex, age, exact time of the accident has been recorded as well as the autopsy reports and the results of toxicology analyses in the blood of the victims. The records were statistically analyzed and the results were compared with those of the international references.

On a total of 88 drowning cases in Eastern Crete during the years 1997-2000, the prefecture of Heraklion presents about 73,86% and Lasithi only 26,14% out of total. The number of fatalities is the expected based on the population of those prefectures. The male gender predominates with a percentage of 85,23% (compared with 14,77% of the female gender). Regarding the age distribution we found that the age group from 40 to 60 years old may be considered as the high-risk group. Children and adolescents do not participate so much at this phenomenon.

52,27% of the victims were Greek, while tourists occurred the

47,73% of the totality of deaths.

85,23% of the fatalities occurred at sea water, and only a percent-

age of 14,77% in pools, rivers, wells etc.

In general a drowning case which does not occur in sea water, in the majority is a suicide case. As the month with most of drowning cases is considered to be August, drowning is an almost exclusively summer time phenomenon in Crete. Overall, 73,86% were accidents, 14,77% suicides, 3,41% homicides and 7.96% natural deaths (mostly with cardiac etiology) which occurred in water.

Keywords: Drowning, origin of death, Crete

#### MED-WP-40 Firearm Injury-Murder or Suicide

\*D.K. Satpathy, Medicolegal Institute, Gandhi Medical College Building, Bhopal, 462001, India; V.K. Sharma, In-charge Toxicology Division, Medicolegal Institute, Bhopal, 462001, India.

A case of fire arm injury was referred to this Institute where the deceased was having entry wound of bullet at right side of head, but the right hand was found behind the back of the deceased lying in supine condition on his bed. The service pistol was found on his chest. The deceased was a police sub-inspector and was on probation period. The case was preliminary suspected to be murder but on analysis of the case on various angles as well as the laboratory analysis the case was revealed as suicide. The detailed analysis of the case has been discussed in this paper.

Keywords: Firearms, Injury, Suicide

#### MED-TP-01

# An Unexpected Change of a Sudden Death of A Women After A Confrontation

\*Britta Bockholdt, Department of Legal Medicine, Free University of Berlin, Hittorfstr. 18, 14195 Berlin, Germany; Edwin Ehrlich, Rudolf Meyer, Deutsches Herzzentrum Berlin, Augustenburger Platz 1, 13353 Berlin, Germany; Volkmar Schneider, Department of Legal Medicine, Free University of Berlin, Hittorfstr. 18, 14195 Berlin, Germany.

A 49 years old female died suddenly and unexpected after sustaining an act of violence with her friend in the flat. The first investigation of the physician and the police provided al lot of bruises and hemorrhages on the skin of the face and on the arms, a laceration of the scalp, petechial bleedings on the left side of the neck and hemorrhages on the skin of the breast. The flat was disorderly, the man was under the influence of alcohol and had also a lot of injuries. The man was arrested by the police and after an investigation of the victim by a forensic pathologist a forensic autopsy was ordered.

The cause of death was a spontaneous aortic rupture with a cardiac tamponade (400 ml blood in the pericardium). The source of the hemorrhage was a rupture of a dissecting aneurysm of the ascending part of the aorta. In this case a comprehensive investigation of the aorta was made and the macroscopical and histological, immunhistochemical and histomorphometrical findings are demonstrated. The charge was roped.

Death due to a spontaneous aortic rupture is a rare postmortem diagnosis (0.3% - 0.4% of all autopsies). An assessment of the influence of violence on the rupture is difficult, especially in cases in which the disease was unknown.

In contrast to this case report some results of macroscopical, histological, immunhistological and histomorphometrical investigation of 50 unselected cases without any or only minimal macroscopical observable alterations of the aorta are demonstrated. Some special aims in the investigation of these control group are the degree of media degeneration, cystic changes with an accumulation of mucopolysaccharides in the intralaminar space of the media and the fragmentation of the elastic lamellae.

**Keywords**: Aortic rupture, Dissecting aneurysm, Cardiac tamponade

#### MED-TP-02

# A Case of Sudden Death Emerging from the Cardiac Conduction System

Ayhan Ozcan, Gulhane Academy of Military Medicine, Pathology Department, Turkey; \*Harun Tugcu, Gulhane Academy of Military Medicine, Department of Forensic Medicine, Turkey; Coskun Yorulmaz, Istanbul University, Cerrahpasa Medical Faculty, Department of Forensic Medicine, Turkey; Bulent Celasun, Gulhane Academy of Military Medicine, Pathology Department, Turkey.

Introduction: Cardiovascular diseases constitute a major group among causes of sudden death. Reportedly, these cases are frequently observed in males of 20-65 years of age, the cause of death being predominantly coronary atherosclerosis. Followed by hypertensive cardiovascular diseases, cardiomyopathias, valvular disease, myocarditis and disturbances of the cardiac conduction system in this order. Sudden death in young individuals originating from the cardiac conduction system is infrequent. In cases of sudden cardiac death without ischemic morphologic evidence and striking ventricular hypertrophy, the examination of the cardiac conduction system is frequently omitted. For such examination, extensive sampling from the sinoatrial node, atrioventricular node, Hiss Bundle with its branches is necessary. If not, misinterpretations could easily occur. Despite the lack of a sufficient number of studies on deaths caused by disorders of the conduction system, a considerable number of