

Discussion and conclusions. According to the close temporal relationship between the severity of the assault and stress cardiomyopathy the manner of death was ruled as homicide.

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The Rudolf Virchow influence on future professor of forensic medicine Ivan Gvozdev achievements (19th century)

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Background. In the 19th century Germany was one of the most important centers for education in pathology and forensic medicine. Ivan Gvozdev graduated from the Medical faculty of Moscow University, decided to become a forensic specialist and finally was sent for an internship in Europe by the government.

Material and methods. We have archived the historical documents of Kazan University connecting with biography facts of Kazan professors. From 1862 to 1865 Ivan Gvozdev was on a scientific mission, studying forensic medicine, pathological anatomy and forensic chemistry at universities of Würzburg, Berlin, Marburg and Vienna.

Results. From 1862 to 1865 Ivan Gvozdev was on a scientific mission, studying forensic medicine, pathological anatomy and forensic chemistry at universities of Würzburg, Berlin, Marburg and Vienna. In 1864, Ivan Gvozdev studied for two terms in Berlin, attended lectures and studies of corpse examinations at the pathological institute made by Professor Rudolf Virchow, one of the most outstanding German scholars of the 19th century. He founded the Pathological Institute in 1856 which soon became an attraction for young scientists from all over the world, including Russian doctors. Virchow, the founder of cellular pathology, first established the histological and physiological essence of many painful processes (thrombosis, embolism, neoplasms, etc.), he explained the normal and pathological structure of many organs and tissues. Virchow founded the journal "Archiv für pathol. Anatomie u. Physiologie u. für klin. Medizin", where Russian scientists were also published. It was in Berlin that Ivan Gvozdev wrote his first article in German language and outlined the plan for his dissertation, which was successfully performed and proved in 1868.

Discussion and conclusions. Thus, training in the professor Virchow's pathological institute was an important period in the formation of a young Russian scientist, who later became a professor of forensic medicine and who finally founded the Kazan School of Forensic Medicine.

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Time since death estimation by two-dimensional mapping of polarizing inhomogeneous images of cerebro-spinal fluid polycrystalline films

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Background. Considerable difficulties of accurate time since death (TSD) estimation are related to impact of large number of both external and internal factors on posthumous processes development. There are many new techniques have been research in recent years for TSD estimation including biochemical, spectrophotometric, fluorescent-histochemical methods etc. In our opinion optical diagnostic methods are the most perspective in this area.

The purpose of the work: To develop and to test the method of two-dimensional Stokes-polarimetric mapping of biological layers with further statistical analysis of the postmortem changes of the coordinate values of azimuth distributions of polycrystalline films of liquor (PFL) polarization images for the purpose to estimate the TSD interval and accuracy.

Material and methods. Objects of investigation are PFL, taken in 82 corpses with previously known time of death, which ranged from 1 to 43 hours

and 20 healthy volunteers. Liquor were taken from cadavers who died because of cardiovascular pathology

Coordinate distributions of polarization azimuth (PA) image values were estimated for each sample of PFL in the optical arrangement of the Stokes polarimeter

The value of statistical points 1–4 th order was performed for each two-dimensional distribution of PFL images PA values. Statistical processing of the calculated values of set of points that characterize the PA distributions within representative sampling was carry out. The depending on the time change of the most sensitive points of statistical values were built to achieve values stabilization.

Results. Statistical points of the 3rd and 4th order that describe the asymmetry and kurtosis (peak sharpness) of PA distributions are the most sensitive to posthumous manifestations changes of polycrystalline optical liquor networks by our method.

Optimal interval in 24 hours and the accuracy of TSD estimation 25 min were found.

Discussion and conclusions. The method of two-dimensional Stokes-polarimetric mapping of liquor images polarization azimuth values distribution may be used in TSD estimation.

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Direct measurement of tissue sample by energy dispersive X-ray fluorescent spectrometry (EDX) for the identification of metal deposition in case of electrocution.

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Background. Energy dispersive X-ray fluorescent spectrometry (EDX) is an easy and convenient method to perform elemental analysis without special sample preparation. This technique has been widely applied in the field of forensic medicine.

Material and methods. We present the direct measurement of formalin-fixed tissue sample by EDX for the diagnosis of electrocution. A sample was collected from the contact lesion during autopsy in a case of electrocution.

Results. Elemental analysis by EDX revealed copper deposited in the skin sample.

Discussion and conclusions. This result indicates that formalin-fixed tissue samples are useful for EDX analysis without additional tissue preparation. This rapid, simple procedure for EDX analysis of tissue samples can provide useful information for the forensic diagnosis of electrocution.

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Of brain and beans – black magic in Zurich

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Background. Macumba is the name of an Afro-Brazilian witchcraft, having its origin in central Africa which then spread through South America between the 17th and 19th century due to the deportation of African slaves to South America, especially to Brazil. Rituals for white and black magic (e.g. curses) are an important part in the practice of macumba and therefore sacrificial offerings (mainly animals or food) take part in nearly every ritual. Although macumba was mainly suppressed by Christianity, its rituals are still part of a certain social class in Brazil and also for instance in central Europe, where it was brought to by South American immigrants.

Material and methods. In the present case a mass of organ tissue and black beans was found one morning by police in a public park in Zurich. It was presented on an extemporaneous altar next to a tree.

Results. The organ tissue was quickly identified as brain tissue, macroscopically not discriminable between human or non-human. Next to imme-