

Inter-play of trauma and disease — a case report

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ABSTRACT

Determining cause and manner of death in medico legal cases is of paramount importance in forensic practice. A 29 year old woman was brought by the police for medico legal autopsy with history of assault by her boyfriend. As per the initial police investigation and crime scene visit by the police, the case was registered as culpable homicide amounting to murder. Autopsy revealed that the deceased had acute on chronic meningitis, a natural disease incompatible with life if left untreated. It was also observed that there was a faint ligature mark around neck and multiple contusions at places over the body. There were no features suggestive of asphyxia or other findings which could alone cause death. The deceased was alive for some time after the assault. Considering these facts, cause of death was attributed to meningitis and further it was opined that the assault could have expedited the death.

Keywords: cause of death; forensic pathology; meningitis; asphyxia.

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Взаимосвязь травмы и болезни: клинический случай

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АННОТАЦИЯ

Установление причины и рода смерти имеет первостепенное значение в судебно-медицинской практике. Тело 29-летней женщины, подвергшейся нападению со стороны сожителя, было доставлено полицией для проведения вскрытия. По результатам предварительного расследования и осмотра места происшествия данный случай квалифицирован как непредумышленное причинение смерти, приравняемое к убийству. Вскрытие показало, что у погибшей был хронический менингит в стадии обострения — заболевание, несовместимое с жизнью, если его не лечить. Кроме того, на шее покойной обнаружена слабо выраженная странгуляционная борозда и следы от множественных ушибов по всему телу. Признаки, указывающие на асфиксию или другое воздействие, которые могли бы стать причиной смерти, отсутствовали. В течение некоторого времени после нападения женщина еще была жива. Учитывая эти факты, причиной смерти был признан менингит, и далее дано заключение о том, что нападение могло ускорить наступление смерти.

Ключевые слова: причина смерти; судебная патология; менингит; асфиксия.

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创伤与疾病的相互作用——案例报告

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简评

在法医学实践中，确定法医案件中的死亡原因和方式至关重要。一名29岁女子被警方带去进行法医尸检，她有被男朋友袭击的历史。根据警方初步调查和犯罪现场走访，案件被登记为构成谋杀罪的过失杀人。尸检显示死者患有急性或慢性脑膜炎，如果不治疗，这种自然疾病将危及生命。还观察到颈部周围有细弱的勒痕，身上有多处挫伤。没有任何特征提示窒息或其他可能单独导致死亡的发现。死者在袭击后还存活了一段时间。考虑到这些事实，死亡原因被认为是脑膜炎，此外，认为袭击可能加速了死亡。

关键词：死因；法医病理学；脑膜炎；窒息。

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INTRODUCTION

One of the prime duties of a forensic pathologist is to opine about the cause and manner of death. It helps the investigating officer when deaths are to be differentiated into natural and unnatural ones. Some times while investigating unnatural deaths, accidents and suicides may appear as homicides and vice versa. In rare circumstances cases brought by the police for autopsy as homicides turns out to be natural deaths. First visit to the death scene by the police may be misleading; body, surroundings and the initial investigation may suggest homicide to the eyes of the police. Later when body is subjected for autopsy it is revealed that the death is from natural causes.

Deciding the cause of death often decides the manner of death. Injuries on the body are non-fatal but can precipitate death in a short time from natural causes [1].

The severity and compatibility with life of any natural disease or injury and extent of interaction between them needs to be thoroughly evaluated before cause and manner of death is finalized. Here we present a case where a body of a 29 year old lady was brought with history of assault for autopsy and it ended up being a death due to natural causes expedited by assault.

CASE REPORT

The deceased a 29 year old lady was living with her boyfriend since 4 years after having separated from her husband. She was physically assaulted by her boyfriend on an evening. He had strangled her neck, punched and kicked her on the face and had left home later. Next day morning he returned home to find his girlfriend dead. As per initial investigation by the police the couple frequently quarreled over the deceased speaking over phone with some other person.

Body was subjected to forensic autopsy on the subsequent day. It was a dead body of an adult female aged about 29 years, measuring 4 feet 10 inches in length; moderately built and poorly nourished; light brown in complexion. Both eyes were contused. Post-mortem staining was faintly present over the back and fixed. Rigor mortis appreciated was all over the body.

Multiple contusions, varying in sizes from 5 cm × 3 cm to 1 cm × 0.5 cm were present over left side of forehead, both the eyes, root of nose, right side of both lips. Scratch abrasion vertically placed measuring 1 cm in length was present over front of neck. Two linear horizontally placed ligature mark placed 1 cm apart, measuring 4 cm × 0.5 cm and 5 cm × 0.5 cm present over front of neck, situated below the thyroid cartilage (Fig. 1). Right sternomastoid muscle was contused in the middle and at its lower end. Haemorrhage around the muscle was observed over an area of 3 cm × 2 cm. Carotid and Jugular vessels were intact. Thyroid cartilage and hyoid bone were intact. On reflection of scalp, extravasation of blood was observed in left frontal and parietal region. Skull was intact; a thin layer of purulent exudate was present on the leptomeninges covering both cerebral hemispheres and the cerebellum (Fig. 2). Both lungs were consolidated all over. Heart, valves and coronaries were unremarkable. Other organs were intact and pale. There were no signs of asphyxia. Brain and other organ tissue samples collected were fixed in formalin. Histopathological examination revealed features of acute on chronic meningitis, bronchopneumonia of both lungs. Liver, spleen, kidneys, heart and myocardium were unremarkable. Blood and viscera were sent for chemical analysis to the State Forensic Science Laboratory and was tested negative for alcohol and other poisons.

Police were advised to further investigate the circumstances of death. It was revealed that the deceased had history of on and off fever, drowsiness, confusion, altered sensorium for few months and was still alive when her boyfriend left home after assaulting her. Considering facts of the case provided by the police, autopsy findings, histopathology and toxicology report cause of death was attributed to Chronic Meningitis. It was also opined that the assault could have hastened the process of death from natural causes. There were no findings suggesting ligature strangulation or assault by blunt force has alone caused death.

DISCUSSION

One of the main objectives of medicolegal autopsy is opining cause and manner of death. The manner of death as determined by the forensic pathologist is an opinion based on the known facts concerning the circumstances leading up to and surrounding the death, in conjunction with the findings at autopsy and the laboratory tests [2]. However it becomes difficult in certain situations where a person dies after trauma and also has pre-existing natural disease. The relative contributions of trauma and

disease may then become an acute medico-legal problem. It is very important to deduce whether death was entirely caused by disease or trauma or a combination of both [3].

A potential source of confusion in medicolegal death investigations (MLDIs) arises when death from natural causes occurs in circumstances that suggest violence. Consequently, the pathologist involved in MLDI is confronted with distinguishing between natural disease and trauma or a combination of both [4, 5].

The nature and severity of disease and injury has to be considered before coming to the conclusion. Commonly such situations involve trauma and pre-existing coronary artery disease. In the present case the deceased had head ache, confusion and intermittent fever since 6 to 8 weeks; autopsy revealed features suggestive of acute on chronic bacterial meningitis. Such cases when untreated will succumb in their due course due to complications. Shock, respiratory failure, organ failure, coagulation disorders are systemic complications; whereas stroke, seizures or brain herniation are the local (intracranial) complications [6]. The deceased had bilateral bronchopneumonia as a systemic complication of meningitis which resulted in respiratory failure and death. Meningitis was acute on chronic in nature and the injuries caused by assault could not have caused it.

Faint ligature mark and multiple bruises were external injuries observed and the deceased was alive when her boyfriend left her after assaulting. There were no internal injuries and asphyxia stigmata which could suggest us to attribute death solely to injuries. These injuries alone would not cause death if the deceased did not have pre-existing meningitis.

Considering the autopsy findings and the inter play between meningitis and injuries, cause of death was attributed to meningitis and the process of death was expedited by the injuries resulting from assault.

Based on the initial investigation and external injuries over the body, the police had registered the case as culpable homicide amounting to murder. Much fatal meningitis was masked by the ligature mark and multiple bruises making the police to investigate the case in lines of homicide. After the receipt of autopsy report and further deliberations with the forensic pathologist, the boyfriend was charged with culpable homicide not amounting to murder as per the Indian Penal Code which is much lesser charge compared to murder.

CONCLUSION

Ascertaining cause and manner of death is a prime objective of medico legal autopsy. Case history, circumstantial evidence and autopsy findings should be properly interpreted and any mismatch between these should be viewed with suspicion before deciding on a final opinion.

This would lead the death investigation in the right direction and would help in bringing justice.

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Fig. 1. Ligature mark present over front of neck.



Fig. 2. Purulent exudate present on the leptomeninges.



Ассер