

Case Report

Artifacts of Reddening can Shadow the Postmortem Burns & Manner of Death

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ABSTRACT

Incidences of homicidal post-mortem burns are increasing day by day. Post-mortem burns are commonly produced to dispose off the body after an obvious crime or to hide the identity of victim or to create confusion regarding the cause of death and its manner. Determination of the cause of death following by autopsy in such cases is always a difficult task for autopsy surgeons and becomes more tedious when burns produced after death belong to the peri-mortem period because changes of reddening produced during peri-mortem burning is likely to lead to misinterpretation of postmortem burns and further the manner of death. In a similar case, dead body of a young Muslim male was brought to us for autopsy examination with alleged history of death due to burns, in which the burns present over the body of the victim were showing postmortem characteristics with contradictory artifact of reddening on front parts of the body and typical injuries of throttling over the neck region, which were also under cover of blackening of soot. Effects of artifacts due to reddening and blackening in post-mortem burns noticed in the present case and its medico-legal significances are discussed in detail as the case is rare of its kind.

Keywords: Post-Mortem burns, Artifact, Homicide and Asphyxia.

INTRODUCTION

Artifact may be regarded as any change caused or feature introduced in the natural state of the body that is likely to be misinterpreted at autopsy. Such artifact may be introduced before death, at the time of death or after the death and therefore, may be labeled as Therapeutic-artifact, Agonal-artifact and Postmortem-artifact¹. Ignorance and misinterpretation of such artifacts can lead to wrong detection of cause and its manner of death or a halt in investigation of criminal death and un-necessary spending of time and effort as a result of misleading findings and even miscarriage of justice^{2, 3, 4}. A scientifically interpreted and documented opinion of autopsy surgeon in such cases can help the investigating agencies to reach on a correct conclusion with fruitful outcomes. However, at instances this has potential risk of non-deliberate misguiding the investigating agency at any stage, if there is inadequate scientific observation

and interpretation. Much of the controversy surrounding the assassination of President John F. Kennedy is based on misinterpretation of the wound in the front of his neck as an entrance bullet wound⁵.

Postmortem burns are also a variety of artifacts, which are introduced to the body after death of criminals to dispose off the body after committing crime or to hide the identity of the victim or to create confusion regarding the cause of death. Traditionally most authors^{2,3,4,5,6} claim that differentiation can be done between ante mortem and postmortem burns by noticing redness and vital reaction around the burnt areas with blisters containing more serous fluid with high protein and chloride levels and presence of soot particles in trachea and bronchioles. While the other authors^{1, 7} believe that these signs are not definite to conclude whether the burns are ante mortem or postmortem in nature. Taghaddosinejad had observed in their study that the raised level of

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carboxyhaemoglobin is the best indicator of ante mortem burns as compared to the presence of soot particles in the lower respiratory tract.

CASE HISTORY AND PM EXAMINATION

Dead body of a Muslim boy aged about 19 yrs was recovered from an open land in burnt condition. The body was shifted to mortuary of Medical College, Baroda (Gujarat), where the autopsy was carried out the next morning. The investigating officer narrated probable cause of death due to suicidal burns during inquest. During autopsy we found that the body was of a young boy with burns present all over the body parts except few areas of body, which included left side of face and scalp at places, both forearms and hands, both legs and only dorsal parts of both feet. Burns present over the body were not showing any sign of ante-mortem burns except redness in front parts where the burns were also deeper as compared to the back parts of the body (as shown in photograph1 and 2). Singeing of body hair and blackening of skin was also noticed over the body suggesting the flame burns. Signs of struggle in the form of linear and crescentic scratch abrasions of fresh duration were present over dorsum of both hands and forearms. Soot particles in trachea were absent and all nails were deeply cyanosed. After cleaning the blackish soot from the body we found injuries in the form of abrasions and contusions over forehead, right eyelid and cheek with typical patterned-contusions of throttling over upper and lateral parts of neck, (as shown in photograph3) which were also present in deeper tissues and muscles of neck correspondingly. About 650 gm of semisolid and semi digested food material in stomach coincided with the time of death within 4 hours of having dinner by the victim. Finally the cause of death was concluded as asphyxia following throttling. The suspect was detained by the police and during interrogation he accepted that he throttled the victim for the reason of their money dispute and burnt the body later to give it a shape of suicide. We also preserved the routine viscera for chemical analysis to rule out any poison with rectal swabs and smear slides to rule out the possibility of sexual offence and blood sample for grouping and cross matching.



Photograph 1: Showing Post-Mortem Burns with Artifact of Reddening.



Photograph 2: Showing Post-Mortem Burns with Paler Base



Photograph 3: Showing Contusions over Neck

DISCUSSION

Post-mortem burn is an artifact, which is commonly produced to dispose off the body after an obvious crime. Artifacts produced by postmortem burns in the form of reddening and blackening are likely to lead to misinterpretation of autopsy findings and further the manner of death, especially when these burns are caused during the peri-mortem period of death. Most of the authors have explained that the reddening over burnt areas is an indicator of ante-mortem burns while very few are in favor of that, the reddening over burnt areas can be noticed even in postmortem burns. According to Bernard Knight,⁷ use of 'red flare' or 'vital reaction' is an unsafe index to suggest infliction of burns before the death because the exposed skin surface may be reddened in both ante-mortem and post-mortem burns, as we have also noticed in this case.

Postmortem burns are usually having typical pattern of distribution over the body parts and they are usually deeper in front parts of the body in comparison to back parts which might be due to contact of the back parts with ground at the time of burning. In the present case also, we have noticed the same, deeper burns with reddening over front parts as compared to the back parts where the burns were superficial and pale in color. Burns were also absent over both forearms and hands, which were suggesting that the victim did not even try to save himself at the time of burning because either he was unconscious or was already dead. Absence of red line and swelling over burnt areas with the absence of soot particles in the air passages and lungs were also indicating that the victim was dead at the time of burning.

The important aspect in this case was that the injuries present over the face and neck region were also covered with black soot and superficial burnt skin debris, which may lead to un-identification of vital injuries during autopsy. Therefore, in all cases where we suspect post-mortem burns, it is essential to clean the vital parts of the body (especially neck region) with wet and dry gauze for better visualization of the injuries and to find out the valuable ante-mortem findings. Other facts in favor of homicide in this particular case were that the body was recovered from an open space far away from his house, which shows that if the victim had committed suicide then why would he go away from the home in such an

open space for that and secondly, even the percentage of burns present over the body was also not enough to cause immediate death of the victim which was there in this case. The victim was a married Muslim male and suicide by burning is also not common among this population. Typical multiple contusions of different shapes and size over the upper part of neck and extravasations of blood in muscles and soft tissues, with other corroborative findings of asphyxia in the form of cyanosed nails, signs of bleeding from nostrils and pulmonary edema were enough to conclude the cause of death as 'throttling'. Burns found over the body were showing postmortem characteristics, which was also found by the police during their investigations.

CONCLUSION

Information regarding the cause of death and its correlation with circumstances of death is of paramount importance both for the investigating agencies and autopsy surgeons. Information regarding the post-mortem burns is not sufficient in literature of forensic medicine and most of the authors have not discussed the artifacts produced by post-mortem burns and their medico-legal significances. This case was presented here with the aim to discuss that how artifacts of reddening and blackening produced by post-mortem burns can shadow the ante-mortem findings and the manner of death, which can further mislead the investigating agencies and hence justice.

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