Review Article

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Preliminary Examination of Human Corpse (Head) Using Deductive Reasoning and Observative Skills

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Abstract

Forensic also known by the name of Criminalistics a branch which solves crime on the basis of the scientific methodologies. This involves proper observation, analysis and examination of human corpse and for evidence. The most important part of any investigation is study of identified or unidentified human corpse. This article mainly focus on how preliminary observation and examination could solve major crimes along with identification of victims with the use of deductive and reasoning skills.

Keywords: Deductive reasoning; Methodologies and criminalistics.

Introduction

The word forensic comes from the Latin term forensis meaning 'off or before the forum'. This is also known by the name 'Criminalistics'.[1] This is application of science to criminal and civil laws which is focus mainly on criminal side during investigation as it is governed by legal standards and protocols of admissible evidence and criminal procedure. From my perspective in simple terms, forensics is a branch which is related to various scientific methodologies for solving crime and proper examination of objects that are involved in crime with further investigation and lastly a proper evidence in hearing. Forensic scientist collect, preserve and analyze various type of scientific evidence during ongoing investigations. Some forensic scientist occupies laboratory role and they conduct secondary investigation with proper analysis on object brought to them by individual. While some travel to scene of crime to collect evidence themselves. Scene of crime is very important in terms of collection of evidence which could be further investigated and released with proper statement. The utmost importance is study of human corpse in crime scene or at autopsy table. If proper examination is made with deductive reasoning and observations a lot of information could be gathered which could be stated as primary evidence which upon further vast examination and analysis would definitely lead to conclusion about cause, time or any information related to death with proper admissible evidence for court hearing.

Preliminary observation and examination of course at the scene of crime autopsy table is very important as it could elect on time of death cause of death which on for the examination could lead us to identification of victim along with criminal so that justice could be served. Preliminary investigation with deductive reasoning could lead us to logical conclusion about the corps. This in turn could lead us to major evidence which could be admissible for court hearing.

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Distinct observation should be made in head undergoing preliminary investigation on the followings:

1. Cranial bones
2. Eyes
3. Ears
4. Lips
5. Oral cavity

Cranial bones

Head injuries has been known as the most common mechanical cause of death. It is the most common cause of death in road traffic accidents fall or suicidal jumps.[2] According to location injuries could be divided into cranial and post cranial. On the basis of nature there are mainly three types knownas blunt force, sharp force and ballistic trauma. Blunt force cranial trauma could be result of interpersonal violence mostly assault case or sometimes accidental case. Blunt force trauma could be the cause of self-inflicted injury which could be suicide or jumping from high places. Blunt sharp force trauma are mostly associated with interpersonal violence.[3] Forensic anthropologist examines any type of skeletal trauma and its possible association with cause and time of death. A proper observation and examination should be made on cranium and identification of any type of depressions, penetration, crushing, slashes, cuts on cranium or cranial vault and cranial bones. This observation could categorize the injury occurred which would be the lead for secondary forensic investigation.

For differentiation between violent assault (blown to head with blunt object) and accidents, Hat Brim Line (HBL) rule was proposed to mark a significant difference.

Eyes

There was a case reported by John Murphy, where body of elderly person was found in River. The environmental conditions made the time of death very difficult to determine. However, the autopsy revealed that potassium level of vitreous humor in his eyes correlate with other physical evidence indicating he died less than 48 hours before.

Optometrist might occasionally provide contributions to assist law enforcement as eye could lead to major evidence of the duration. There are two major ways to determine postmortem interval one is corneal clothing and another is examination and measurement of potassium level invitreous humor. One at scene of crime or at autopsy table might observe for corneal clouding. Cornea becomes hazy and cloudy about 2 hours after death. This turns progressively more opaque over the next day. This would give us the rough estimation about the time of death. The second way which is a measurement of potassium intervals level in vitreous humor. After death blood cells in the body breaks down and release potassium. This process happens more slowly in eye which remains unaffected by temperature. Forensic pathologist can sample the vitreous humor and use that value to calculate an approximate time of death. Cause of death could also be found out by proper examination of conjunctiva and eyelids for pinpoint size petechial hemorrhages. When this hemorrhages are observed, strangulation and homicide could be suspected.[4]

Ears

External human ear is very unique which shows different morphological and individualistic features in different individuals and population groups. This variable structure of human ear may establish the identity of individual by direct examination during the examination of CCTV footage for analysis of ear prints. Individual characteristics of ear can provide very useful information for personal identification in forensic examination. One must observe with proper examination and should focus on the shape of the year and important structures such as tragus, helix, earlobe and Darwin's tubercle.[5] Secondary forensic investigation of ear include ear print analysis which is a two-dimensional reproduction of parts of outer ear that have touched a specific surface (most commonly the helix, tragus and anti tragus). Ear print analysis is considered to be more economical than DNA profiling and is considered to be very reliable and has been successfully used to solve crimes in UK and Netherlands.

Lips

Lip prints are unique and do not change with course of time. Traces of lips should be looked on cutlery and crockery items, on the windows or door glass and on photographs. It might be observed on the side by side with tooth marks on food products. Wrinkle on the lips has individual characteristics which could depicts about the corpse. Wrinkle and grooves on the labial mucosa also forms a characteristic pattern called lip prints, a study of Chelioscopy.

Chelioscopy is forensic investigation technique that deals with identification of humans based

on lip traces. This method of identification of a person based on characteristic arrangement of lines appearing on red part of upper lips or as a science dealing with lines appearing on the red part of lower lips.[6]

This also verify the presence or absence of a person from the crime, provided there has been consumption of beverages, drinks, uses of clothes, tissue or napkins at crime scene.[7]

Oral cavity

Dentistry plays a very important role in investigative procedures to identify recovered human remains and to determine their age, sex, previous dental history, profession and socioeconomic status of an unidentified human corpse allergy is a branch with the application of investigative and observative dental knowledge to those criminal and civil laws that are enforced by police agencies in a criminal justice system. There are various investigative procedures in forensic odontology which leads us too many resting evidences out of which two vitals are bite mark analysis and age estimation techniques. Teeth are used as weapon by aggressive and it is also used by victim in self defense. After collection of all dental evidence, the forensic odontologist would examine and analyze and compare the bite marks. Bite could occur on both sides that is victim as well as the suspect. Bite marks are found on the flesh of victims of violent attack, particularly on stomach or buttocks. Alternatively this could be found on suspect left by victim during self-defense.

Age of unidentified human corpse could also be estimated and evaluated by observing the pattern of tooth eruption and tooth wear.[8]

Conclusion

Unsolved crimes and unidentified human corpse could be solved and identified with proper observation, examination and using deductive and abductive reasoning skills. This on further investigation could give us the best result in the form of admissible evidence in the court for hearing. Preliminary observation and preliminary examination could gather a lot of facts and information regarding the cause and time of death along with identification of victim as well as the suspect. So one must focus at very basic level of investigation with proper observation because it is always said that minor to minor facts can give us the lead to evidence which would solve major unsolved crimes and mystery.

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