



Dentistry's Cardinal Role in Forensic Odontology

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Dear Editor-in-Chief

Forensic dentistry, the implementation of dentistry to juridical affairs, is a new grandeur of forensic science. Over the past two decades, there has been appraising reconnaissance on forensic dental matters. The incarnated fact that the dental restorations and human teeth remain stable over a period of long time, even in extreme circumstances like fire, forensic odontology can play a cardinal role in the depiction of the mangled bodies. Forensic Odontology demands a multidisciplinary knowledge and approach as it incorporates most of the tributaries of dentistry. The specialty of forensic dentistry is elementally applied in radiographic investigation, human bite mark analysis, mass disasters and during anthropologic examination.

Radiographs assist the forensic dentist in estimation of the age of obscure individual. Comparison of ante-mortem and post-mortem radiograph is one of the meticulous methods in human identification. The diversification in dental features such as morphology, angulations of tooth, degree of restoration render gratifying message and thereby comparison with ante-mortem radiographs yields authentic results (1). Certain scenarios, when the corpse is beyond recognition by objective method, the radiographs do marshal the forensic dentists in initial recognition and later can be narrowed down by scientific methods. Irrespective of the above statement; the real task is in identifying the individuals who are edentulous, where all the hard tissue information is not available to the forensic

dentist's. Beneficially with the study of bone trabeculations recorded within ante-mortem and post-mortem radiographs, the identification of edentulous victims is workable (1).

Violent crimes are often celebrated with human bite marks. Bite marks acquired is mostly from cases of sexual violence and child abuse. Anterior dentition and the premolars are the substrata factors in eventuating bite marks. Redundant erudition can be anticipated if the suspect has dentures and crowns. These blemish marks can crop up on both the alleged and the martyr. The vetting of bite marks, demand an instantaneous retroaction by the forensic dentist. The dialectics behind it is due to the amendments encountered in bite marks through straining. Identification of human bite mark involves precise photography, swabbing of the injured site, followed by registration of suspects' tooth (2). Suspect's dentition is registered by means of impression and subsequent stone model of the tooth. Corroboration of the bite mark can be perceived when the above steps are performed squarely. Nevertheless with the advanced and enriched approaches like DNA analysis, the bite mark examination can further strengthen its plausible foundation.

Depiction of deceased individuals is a perplexing job, especially during disasters. Dr Ascor Amoedo, who is reputed as the father of forensic odontology documented the first case of dental identification in which more individuals lost their lives in a disaster. 126 people were charred to

death due to a fire accident in Paris 1897 (3). Dental records help to identify the esoteric person, even if the body is beyond visual narration. Irrespective of the dismembered mort, hopeless circumstances; the coetaneous DNA technology bolsters the forensic team to reveal the abstruse mysteries of the victims and suspects. Truthfulness and the existence of ante-mortem records determine the favourable outcome of forensic dental recognition. The dental structures infer positive information to the forensic dentists in determining individual's chronological age. Osteologic information is aggregated mostly from anthropologic examination. Appraisal of age, gender and ancestry can be recouped from the shape of skull. Exceptional circumstances, where it is devoid of soft tissues especially in new-borns, the presence of neonatal line in enamel favours during forensic investigations. Imperative facts could be acknowledged from the enamel patterns and neonatal line can be inspected with the scanning electron microscope (4). Dental regimen accompanied with the development component is the strategic factor enabling to identify a deceased from an examination of the oral cavity. Peculiar characteristics of the dentition seem to scale down the investigation process in most of the legal cases. Similarly, the lip and palatal rugae are believed to be distinct findings, which help in arriving at significant conclusions in the martyr. Lip patterns are consistent and enduring throughout the entire life, which reassures that these prints can render more data with respect to the alleged individual (5). Palatal rugae patterns are considered in forensic investigations as they remain stable during the entire human life. Rugoscopy is imputed as one of the unfamiliar procedures during judicial proceedings. At the same time, these are alleged to be a substitutive technique of interpreting individual's identity, notably in charred cases, where hardly any fragment exists (6).

Forensic odontology is a specialized field of dentistry which analyses dental evidence in the interest of justice. In recent times, forensic odontology

has evolved as a new ray of hope in assisting forensic medicine. Dentistry contributes to the identification of human remains after disasters or crimes, assisting other medical specialties. When the dismembered bodies are beyond visual description, dental records do guide in retrieving information from the unavowed persons. A regulated system for the record of the dental status of individuals is mandatory in order to bolster the process of human identification after a crime, violent assault, accident or a mass disaster. Systematic compilation of dental records and sustenance of the same would marshal the legal officials in identification of the uncharted persons.

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