

waste in terms of Biomedical Waste (Management and Handling) Rules 1998 and they shall strictly comply with the norms specified therein.

The need of the hour is to eradicate or at least control and remove the environmental hazards threatening public health owing to the improper biomedical

waste disposal by the health institutions at large. The present article is a small initiative on study relating to disposal of hospital waste and its environmental hazards and an effort to publicize and bring to practical light the usefulness and importance of the Biomedical Waste (Management and Handling) Rules 1998 to the legal community on the whole.

LEGAL RELEVANCE OF FORENSIC ODONTOLOGY IN MODERN INDIA

By

—Y.S. KIRAN KUMAR, M.B.A. (HM), LL.M.,
Research Scholar (Department of Law),
Telangana University, Nizamabad, A.P.

Forensic odontology is the branch of science which deals with the knowledge of dentistry required for solution of cases by the police and the Courts. Forensic odontology helps in identification and assessment of severity of injuries involving teeth. Study, comparing and evaluation of the bite marks is another important area in forensic odontology which helps in the identification of the criminals from the bite marks.

Identification by teeth is not new. It goes back as far as 66 A.D. at the time of *Nero*, as the story goes, *Nero's* mother *Agrippina* had her soldiers kill *Lollia Paulina*, with the instructions to bring back her head as proof that she was dead. *Agrippina*, unable to positively confirm and identify the head, examined the front teeth and on finding the discoloured teeth front tooth confirmed the identity of the victim. During the U.S. Revolutionary War, none other than *Paul Revere* (a dentist) helped identify war casualties by their bridge work. Teeth are highly resistant to destruction and decomposition, so dental identification can be made under even in extreme circumstances. It was used on *Adolf Hitler* and *Eva Braun* at the end of

World War II, the New York City World Trade Centre bombing, the Waco branch davidien siege, and numerous airplane crashes and natural disasters. The USA has fairly well developed system of dental records system (the universal system), so it is not surprising to find it used for the identity of the remains or "Jan doe" victims. You can also tell age solely on analysis of teeth—the Gustafson Method (looking for six signs of wear) or the Lamendin Method (looking at transparency of roots). With the universal system, each tooth is assigned its own number from 1 to 32 and the five surfaces of each tooth are also classified.

All dental records are based on a universal numbering system, and contain an amazing amount of information. For example, they note:

1. Fillings
2. Extractions
3. Surface structures/root configuration
4. Adjacent teeth
5. Twisted/tilted teeth

Ante-mortem/post-mortem match determines identity.

Forensic dentistry or Forensic odontology is the proper handling, examination and evaluation of dental evidence of legal relevance in the following main areas:

1. Identification of found human remains.
2. Identification in mass fatalities.
3. Assessment of bite mark injuries and its analysis.
4. Assessment of cases of abuse (child, spousal, elder)
5. Civil cases involving malpractice
6. Age estimation.
7. Use of dental records such as radiographs.
8. Ante-mortem (prior to death) and post-mortem photographs and DNA analysis of tooth pulp.

This area of forensic identification plays a vital role in man-made or natural disaster, which results in multiple fatalities that are not identifiable through conventional methods, *i.e.*, fingerprints. The same principle applies to individual fatality identification. In situations where friction ridge skin has been destroyed, the recovery of identifiable dental structures is still possible. It becomes most apparent in aircraft crashes and industrial explosions where high impact explosions and fire produce fragmentation and partial incineration. The teeth and dental restorations are the strongest elements in the human body and survive the destructive influences of fire and exposure to the elements.

Forensic odontology is the study of dental applications legal proceedings. The subject covers a wide variety of topics including individual identification, mass identification and bite mark analysis. The study of forensic odontology in a legal case can be piece of incriminating evidence or an aspect of wide controversy. Bite marks as evidence usually in cases involving sexual assault, murder and child abuse can be vital factor leading to a conviction. Biting is often

a sign of the perpetrator seeking to degrade the victim and also to achieve complete domination. Bite marks can be found anywhere on a body, particularly on soft, fleshy tissue such as stomach or buttocks and bite marks can be found on objects present at the scene of a crime. Bite marks are commonly found on a suspect when a victim attempts to defend him/herself.

Indication of poisoning in the individual can also be evident from examination of the teeth. Yellow brown spots are visible in teeth of persons living in areas where fluorine content is high in drinking water. High intake of tetracycline can also yellow orange colouring of the teeth, in chronic lead poisoning blue lead line on the teeth surface, in copper poisoning green line on the teeth surface, in silver poisoning blackish discolouration on the teeth surface, thus many times teeth are the only structures available due to destruction of other parts of the body due to decomposition from which poisoning may be ascertained.

Forensic odontology can help the Investigating Officer in a number of cases and variety of situations. It varies from mass disaster identification to identification of individual case. It can help in proper evaluation of injury cases in matters of assault and accidents. It can help Investigating Officer with proper training orientation in the recent developments and to develop knowledge and skill about forensic odontological advancements as in western countries for more accurate and precision oriented findings.

Knowledge of forensic dentistry is required in injury cases when medico legal examination of the injured person is done and there are injuries involving the teeth. As fracture and dislocation of teeth is a grievous injury under Section 320 IPC it becomes important to differentiate dislocation due to disease process or due to trauma as this point is greatly misused by people by fabricating dislocation of teeth.