



A Tale of Hidden Bites and Fatal Fury- A Case Report

¹Dr. Jamsheena M. K,¹Dr. Bisna Lulu V.C, ²Dr. Valsala K, ²Dr. S.K. Padmakumar,
³Dr. Sujisha S.S, ⁴Dr. Renju Raveendran

^{1,1}Junior Resident, ²Associate Professor & Deputy Police Surgeon,

²Professor, Head of the Department ³Assistant Professor & Assistant Police Surgeon,

⁴Professor, Head of the Department & Police Surgeon,

^{1, 2,3,4}Department of Forensic Medicine,

Government Medical College, Trivandrum

^{1,2}Department of Oral and Maxillofacial Pathology & Microbiology & Forensic Odontology,
Government Dental College, Trivandrum

*Corresponding Author:

Dr. Jamsheena M. K

Junior Resident, Department of Forensic Medicine, Government Medical College, Trivandrum

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Abstract

A widowed woman in her thirties, was residing in a rural area in live-in relationship with her boyfriend, was reportedly undergoing recurrent physical abuse from him. On a summer morning she was found dead in a rubber plantation. After an investigation by the police her body was subjected to autopsy examination. During autopsy a human bite mark having characteristic arch patterns and heaping up of cuticle was present on the outer and back aspect of the left arm. The bite mark was analysed with the help of Forensic Odontologist from the Department of Oral Pathology, Microbiology & Forensic odontology. The examination revealed the bite mark was inconsistent with that of an adult perpetrator which added an element of complexity and confusion in the analysis. This case exposes the thin line between domestic fury and misinterpreted evidence, urging caution in bite-mark interpretations amid ongoing scientific debates over their reliability.

Keywords: Bite mark, Forensic odontology, Physical abuse.

Introduction

Homicide is the killing of one human being by another, while culpable homicide refers to causing death by an act done with intent, knowledge, or likelihood of causing death¹.

Bite marks are patterned injuries that may present as abrasions, contusions, or lacerations depending on the force applied². They are commonly observed in assaults, child abuse, and occasionally self-inflicted injuries, typically appearing as semicircular or crescent-shaped impressions produced by incisors and canines³.

Forensic Medicine is the branch of medicine which deals with the application of the principles and

knowledge of medicine for the purpose of law⁴. Forensic odontology is the application of dental knowledge to legal investigations¹. It plays a vital role in human identification, age estimation, sex determination, and bite mark analysis⁵. However, bite mark evidence must be interpreted cautiously due to distortion, variability, and subjectivity³.

Case Report

A widowed woman in her thirties was residing in a rural area with her boyfriend. He was a chronic alcoholic and after consuming alcohol he used to abuse her repeatedly. So, she decided to end the relationship with him and to return to her parents and

two daughters from the previous marriage. One day her elder daughter who was autistic was admitted in a nearby hospital. She went to visit the child and after returning home from the hospital another altercation with him occurred in the presence of his friend. The following morning, she was found dead in a nearby rubber plantation lying in prone position. As part of police investigation, a medico-legal autopsy was conducted.

Findings

There were 27 antemortem injuries present on the body which included fatal blunt force injuries to the head, neck, face, other associated injuries and a bite mark on the outer and back aspect of left arm. The bite mark analysis was done with the help of Forensic Odontologist, who certified it as a human bite mark, with prominent impressions corresponding to maxillary central incisors and mandibular canines.

For exclusion purpose, dental impressions of the deceased, her boyfriend & the two daughters were collected & analysed.

Figure 1- Bite Mark on the Victim



Figure 2- Impression of Deceased



Figure 3- Examination of Suspect 1



Figure 4- Maxillary Cast of Suspect



Figure 5- Mandibular Cast of Suspect



He had 27 teeth. (a) mesio-incisal fracture of left maxillary central incisor, (b) distal notching of the right lateral incisor. Comparison with test mark excluded concordance.

The bite mark present on the body was 2.2 x 2.2 x 0.3 to 0.5 cm, showed characteristic arch patterns. Consisted of two arches, showed upper and lower jaw teeth. The intercanine width measurements of the bite mark had a smaller dental arch consistent with a deciduous dentition of a child. The forensic odontologist reported that the bite mark did not match the suspect and was more consistent with a pediatric age group.

Figure 6- Examination of Suspect 2 (Elder Daughter)

Had 26 teeth. (a) Ellis Class, I fracture of the maxillary right central incisor, (b) Ellis Class II fracture of the left central incisor, (c) Midline diastema, (d) missing maxillary lateral incisors, (f) mandibular anterior crowding, and was in concordance with the test bite mark. The intercanine distance (13 mm) and mandibular incisor angulation corresponded with the bite pattern observed on the deceased's left arm, suggesting that the elder daughter was the most probable source of the bite injury.

Figure 7-Examination of Suspect 3 (Younger Daughter)

Result was negative.

Discussion

Bite mark analysis involves comparing patterned injuries with dental characteristics. These marks may be found on skin, clothing or objects, particularly relevant in violent crime like assault, homicide, intimate partner violence, etc⁴. The role of forensic personnel includes early recognition of bite injuries, proper documentation & preservation of evidence⁶.

Bite mark analysis has significant limitations; pressure distortion, healing processes, decomposition changes can alter the original impression, subjective interpretation and lack of standardization further reduce reproducibility⁷. Hence, bite mark evidence should never be used in isolation and must be corroborated with other forensic findings such as autopsy results, DNA evidence, and circumstantial evidence from the police⁸.

In the present case, there was intimate partner violence, multiple injuries including a bite mark. Forensic Odontology examination revealed the bite mark present was that of a child and was in

concordance with the bite mark collected from elder daughter.

Although bite marks provided an investigative lead, their role was primarily supportive rather than definitive⁷. Literature emphasizes careful documentation using photography, dental impressions, and salivary DNA sampling, along with cautious interpretation due to inherent limitations⁹.

Conclusion

From the post mortem examination findings there was no evidence of poisoning or natural disease. The vaginal swab preserved during autopsy revealed presence of human spermatozoa it supported a violent sexual and physical assault. In this case opinion as to the cause of death was furnished as, "Death was due to blunt injuries sustained to the head and neck".

Forensic odontology plays an important role in medico-legal investigations by assisting in identification and exclusion of suspects through dental evidence¹⁰. This case highlights the importance of

integrating odontological findings with autopsy results and investigative data. Bite mark analysis, while useful as an investigative aid, should always be interpreted cautiously and corroborated with other forensic evidence to ensure accurate and reliable conclusions.

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