

## Case Report

# Bite marks utility in sexual offences

RK Gorea, MD DNB PhD\*

\*Professor and Head, Forensic Medicine & Toxicology Department, Gian Sagar Medical College, Ram Nagar, Rajpura, India.

---

### Abstract

Bite marks evidence is an important evidence which is often overlooked due to unawareness of its utility, resulting in poor successful prosecution rate. Investigating officers, medical officers, dental officers, advocates, and judiciary are not well aware of its utility resulting in non-utilization of the bite marks evidence. Two cases are being presented here which had bite marks on their face. In one case, due to unawareness, bite mark evidence was not properly utilized whereas in the other case, the bite mark evidence was properly utilized resulting in charge sheeting of the culprit. This comparison of two cases of sexual offences shows the utility of documentation and analysis of bite marks evidence in its proper perspective.

**Keywords:** Bite mark, evidence, prosecution rate, sexual offences, teeth

---

### INTRODUCTION

Bite marks, though not very common in assaults, are occasionally seen in sexual offences. Bite marks are helpful in identification of the person if sufficient details of the teeth are transferred to the bite marks.<sup>1</sup> Photography is one of the good methods to harvest the evidence of bite marks. Role of ABFO scale II has been well documented during photography for collection of bite marks evidence.<sup>2</sup> When ABFO scale II is used during photography, photograph can be easily converted to life size using Gorea and Jasuja method.<sup>3</sup> There are different methods to compare the teeth with the bite marks but bite marks are compared mostly using simple methods like transparent acetate overlays.<sup>4</sup> Many new techniques have been developed, like three dimensional measurement of bite marks involving use of stereo microscope,<sup>5</sup> scanning electron microscopy<sup>6</sup> and digital bite marks overlays<sup>7</sup> to DNA fingerprinting from the saliva on bite marks.<sup>8</sup> When other things do not help, even genomic profiling of bacteria recovered from bite marks help in identification.<sup>9</sup> Investigation of bite marks has reached a sophisticated level<sup>10</sup> but the choice of procedure to be applied in a particular case depends upon the individual case. Making acetate transparency overlay is cheap, easy and very helpful in identification.<sup>11</sup>

### CASE REPORTS

#### Case 1

This is the case of a young girl who was sexually assaulted and incidentally she had bite marks on the face. This girl was restrained by rope and had bruises on the arms and legs (Figures 1 and 2). The bite mark on the face was photographed without any scale (Figures 3 and 4). The girl was murdered after the sexual assault. This bite mark evidence was never utilized during the prosecution.

When we see Figure 4, it shows that there were very good impressions of the teeth and this could have been very useful if this evidence was properly collected, compared, and analyzed. But this was never done in this case.

This case clearly speaks of the unawareness on the utility of bite marks in criminal cases, though this case was under Sections 302 and 376 of the IPC, both of which are cognizable offences. This case dates back to 1992, when the awareness of utilization of dental evidence was at its lowest ebb in India.

#### Case 2

This is a case of 2005 when there was awareness about bite marks, evidence among the investigating police officers, due to awareness programs being carried out by the Forensic Medicine Department of Govt. Medical College, Patiala. This is the first reported case in the *Journal of Indian Academy of Forensic Medicine* where the investigating officer utilized this evidence for the successful prosecution of the case.<sup>12</sup>

---

\*Correspondence: Dr. RK Gorea, Professor and Head, Forensic Medicine & Toxicology Department, Gian Sagar Medical College, Ram Nagar, Rajpura, District Patiala.

E-mail: gorea\_r@yahoo.com

Received: 13.04.2011

Accepted: 17.05.2011



**Figure 1** Bruise on the leg depicting restraint of the victim.



**Figure 2** Bruise on the forearm depicting restraint of the victim.



**Figure 3** Bite marks on the face—photograph without scales.

In this case, bite marks were present on the forearm (Figure 5) and cheek (Figure 6) of the victim. Bite marks on the forearm had not left proper impression marks but bite marks on the cheek proved useful for comparison.

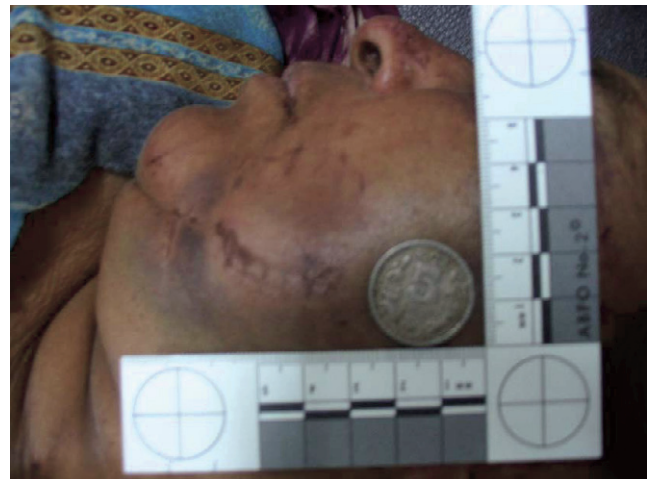
In this case, photographs were taken immediately along with ABFO scale II. Dental casts of the suspects were made



**Figure 4** Close view of the bite marks showing impression of teeth.



**Figure 5** Photograph of bite marks on arms with ABFO scale II.



**Figure 6** Photograph of bite marks on face with ABFO scale II.

and transparencies prepared from the casts were superimposed upon the life size photograph of the bite mark of the victim. One of the accused was identified from this evidence.

## DISCUSSION

The above-mentioned two cases clearly depict the value of collection and evaluation of the bite marks evidence. As has been correctly mentioned, if sufficient details are transferred on the bite marks, then only it helps in identification.<sup>1</sup> It is clear that bite mark on the forearm did not help but bite mark on the face had sufficient details and was helpful in reaching a conclusion.

If photographs are taken along with ABFO scale II in view<sup>2</sup>, it becomes easy to convert the photographs to life size as happened in case II. When the investigating officer and doctor are aware of the bite marks evidence<sup>12,13</sup> and this evidence is properly collected and analyzed, it goes a long way in solving the case and catching hold of the culprit with scientific evidence.

## CONCLUSION

- Never forget to collect the evidence of bite marks on human skin.
- Always use the ABFO scale II during photography, as it helps to get a life size photograph.
- Analysis of the dental evidence will help in final solution of the case.

## REFERENCES

1. Pretty IA, Turnbull MD. Lack of dental uniqueness between two bite mark suspects. *J Forensic Sci* 2001;46:1487–91.
2. Hyzer WG, Krauss TC. The bite mark standard reference scale—ABFO No. 2. *J Forensic Sci* 1988;33:498–506.
3. Gorea RK, Jasuja OP. Identification from bite marks on Nakh (Pear). *J Indo Pacific Acad Forensic Odontol* 2010;1:30–3.
4. Fearnhead RW. Facilities for forensic odontology. *Med Sci Law* 1960; 1:273–7.
5. Jonason CO, Frykholm KO, Frykholm A. Three dimensional measurement of tooth impression of criminological investigation. *Int J Forensic Dent* 1974;2:70–8.
6. Solheim T, Leidal TI. Scanning electron microscopy in the investigation of bite marks in foodstuffs. *Forensic Sci* 1975;6:205–15.
7. Sognnaes RF, Rawson RD, Gratt BM, Nguyen NB. Computer comparison of bite mark patterns in identical twins. *J Am Dent Assoc* 1982;105:449–51.
8. Sweet D, Lorente M, Valenzuela A, Lorente JA, Alvarez JC. Increasing DNA extraction yield from saliva stains with a modified chelex method. *Forensic Sci Int* 1996;83:167–77.
9. Borgula LM, Robinson FG, Rahimi M, et al. Isolation and genotype comparison of oral streptococci from experimental bite marks. *J Forensic Odontostomatol* 2003;21:23–30.
10. Gorea RK, Singh G, Jasuja OP. Forensic examination of bite marks—state of the art. *Turkish Journal of Forensic Sciences* 2005;4:59–66.
11. Gorea RK, Jha M, Jasuja OP, Vasudeva K, Aggarwal AD. Marvelous tools of identification—bite marks. *Medico-Legal Update* 2005;5:61–5.
12. Gorea RK, Jasuja OP, Aggarwal AD, Narula R. Revenge by the bites. *J Indian Acad Forensic Med* 2007;29:17–20.
13. Jakhar JK, Pal V, Salariya AS, Paliwal PK. A bite mark can identify the crime and criminal: a case report. *J Indo Pacific Acad Forensic Odontol* 2010;1:42–3.