

Bite mark analysis on different skin tones

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ABSTRACT

A bitemark has been defined as 'a pattern produced by human or animal dentitions and associated structures in any substance capable of being marked by these means'. Forensic odontology has gained wide acceptance in the field of criminal justice because no two people have identical teeth. Presence of physical evidence such as bite-marks in cases of rape, murder and violence are considered very valuable. These are considered to be an expression of dominance, rage and animalistic behaviour. These marks are also valuable in determining the type of physical abuse and age bracket of the criminal. With increase in criminal cases the use of bite-marks as Forensic odontological evidence in nailing the culprits truly points out the important role odontology plays in field of criminal justice. The aim of this study is to determine how to identify bitemarks on different skin tones and the color changes occurring during healing of bitemarks. The materials and methods used for this study are Dental cast that is mounted on a bite articulator, Measuring scale, a shade card for different skin tones also a chart for the color changes in a bruise to compare the healing. Bite marks are produced in arms and legs with the dental cast that is mounted on the bite articulator and then photographs are taken of these marks with a scale. The bitemarks are then observed over a period of time according to its color changes on different skin tones. After that photographs are taken and compared. The amount of force used by the articulator on arms and legs may be constant. As there are several factors that can affect an identification of the bitemark like the distortion of bitemark, skin related factors such as - underlying musculature, fat, curvature and looseness or adherence to underlying tissue, highly viscoelastic nature that allows stretching, distorting under pressure and recoiling back to their original position. Also Langer's Line that represent directional differences in the degree of extensibility of skin. They affect the dimension of the bitemark base on the position of the bite. The pattern of the bitemark could be also affected by Ecchymosis, Linear abrasions, contusions, or striations, Double bite, Weave patterns of interposed clothing, Peripheral ecchymosis .Pain scale is another factor that is considered in this study .The amount of pain that every individual can bare is different . hence to record a bitemark the force used cannot be constant for each individual.

Forensic odontologist should consider skin tone when analysing a bitemark because there a great range of skin tones which will show different colour changes. Most of the research is seen on white skin but the study on other skin tones is scarce. This study will help in distinguishing the bitemark patterns on the skin tones other than white