

Forensic Dentistry: Unveiling Mysteries through Dental Evidence

Pamela Scott*

School of Dentistry, Dept of Orthodontics, University of Sao Paulo, Argentina

Corresponding Author*

Pamela Scott

School of Dentistry, Dept of Orthodontics

University of Sao Paulo

Argentina

Email: scottp@yahoo.com

Copyright: ©2022 Scott P. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Received: 04, Nov, 2022, Manuscript No. jgd-23-99766; **Editor assigned:** 06, Nov, 2022, Pre QC No. jgd-23-99766 (PQ); **Reviewed:** 16, Nov, 2022, QC No. jgd-23-99766 (Q); **Revised:** 17, Nov, 2022, Manuscript No. jgd-23-99766 (R); **Published:** 20, Nov, 2022. doi: 10.35248/dentistry.3.6.1-2

Introduction

Forensic dentistry, also known as forensic odontology, is a specialized branch of dentistry that plays a vital role in the investigation of crimes and identification of human remains. Through the analysis of dental evidence, forensic dentists contribute to the resolution of criminal cases, disaster victim identification, and the establishment of human identity. This commentary article aims to disseminate knowledge about forensic dentistry to the scientific community, highlighting its significance, methods, and advancements in the field [1,2].

Dental Identification: The Power of Dental Records

Dental identification is one of the primary applications of forensic dentistry. Dental records, including dental charts, radiographs, and photographs, serve as valuable evidence in establishing the identity of individuals. When a victim's or suspect's dental records are available, forensic dentists can compare them with post-mortem or bite mark evidence to determine if there is a match. Dental evidence is particularly useful in cases where other forms of identification may be compromised, such as in cases of mass disasters or severe mutilation [3].

Bite Mark Analysis: Revealing Clues in Human Skin

Bite mark analysis involves the examination of bite marks left on human skin, objects, or other surfaces. Forensic dentists compare bite marks to dental impressions of suspects to identify the individual responsible for the bite. Advancements in bite mark analysis have focused on improving the accuracy and reliability of bite mark comparisons, addressing concerns regarding subjective interpretations. Digital imaging, three-dimensional analysis, and computer algorithms are being employed to enhance the scientific validity of bite mark analysis, ensuring more reliable outcomes in court proceedings.

Age Estimation: Determining the Chronological Age

Forensic dentistry also plays a crucial role in age estimation, particularly in cases involving unidentified human remains or disputed ages of individuals. By examining dental development, tooth eruption patterns, and dental wear, forensic dentists can provide valuable insights into an individual's age range. This information can help narrow down the search for missing persons or provide evidence in cases where the age of an individual is in question.

Advancements in age estimation techniques, such as the use of dental radiographs and dental histology, have improved the accuracy and reliability

of age estimation methods. These advancements have been particularly significant in cases involving child victims or individuals without official identification documents [4].

Forensic Anthropology: Dental Evidence in Skeletal Analysis

Dental evidence plays a crucial role in forensic anthropology, contributing to the identification of skeletal remains. Teeth are one of the most durable structures in the body, and their unique characteristics, such as dental morphology and dental restorations, can provide valuable information about an individual's ancestry, sex, and potential facial features. By examining dental remains, forensic dentists and anthropologists can reconstruct the biological profile of unidentified individuals, aiding in their identification.

Technology and DNA Analysis: Advancements in Forensic Dentistry

Technological advancements have greatly enhanced the field of forensic dentistry. Digital imaging techniques, such as cone beam computed tomography (CBCT) and three-dimensional scanning, allow for precise documentation and analysis of dental evidence. These technologies enable forensic dentists to create virtual models, superimpose bite marks, and conduct comparative analyses with greater accuracy and efficiency.

Furthermore, DNA analysis has revolutionized forensic dentistry by providing an additional layer of evidence. DNA recovered from saliva, blood, or other tissues associated with teeth can help establish identity, link suspects to crime scenes, and exclude innocent individuals. The integration of DNA analysis with dental evidence has significantly strengthened the forensic investigation process and increased the reliability of results [5].

Conclusion

Forensic dentistry plays a critical role in the investigation of crimes, identification of human remains, and determination of human identity. Through the analysis of dental evidence, forensic dentists provide valuable insights that contribute to the resolution of criminal cases and bring justice to victims. Advancements in technology, age estimation techniques, bite mark analysis, and DNA analysis have greatly enhanced the field, improving the accuracy, reliability, and scientific validity of forensic dentistry practices.

The dissemination of knowledge about forensic dentistry within the scientific community is essential for further advancements in the field. Collaboration between forensic dentists, researchers, and other forensic experts is crucial in developing standardized protocols, validating new techniques, and enhancing the overall effectiveness of forensic investigations.

By recognizing the significance of dental evidence and staying updated on the latest advancements, the scientific community can contribute to the continued progress of forensic dentistry. Through interdisciplinary collaboration and the application of scientific principles, forensic dentistry will continue to unveil mysteries, provide closure to victims and their families, and ensure justice in the legal system. Forensic dentistry occupies a unique and indispensable position within the realm of forensic sciences. Its contributions to criminal investigations, disaster victim identification, and human identification are invaluable. The field continues to evolve and adapt to advancements in technology, scientific methodologies, and interdisciplinary collaborations.

The reliability and accuracy of forensic dentistry heavily depend on the competence and expertise of forensic dentists. Continuous professional development, training, and adherence to ethical standards are essential to ensure the highest level of proficiency in the analysis and interpretation of dental evidence. Additionally, the establishment of standardized protocols and guidelines, along with the sharing of best practices within the scientific community, are crucial for maintaining consistency and reliability in forensic dentistry practices.

As technology continues to advance, it is imperative for forensic dentists to stay informed about new techniques and tools that can aid in their investigations. Digital imaging, three-dimensional analysis, and DNA analysis are just a few examples of how technology has improved the capabilities of forensic dentistry. Embracing these advancements and incorporating them into forensic dentistry protocols can enhance the efficiency and accuracy of analyses, ultimately leading to more effective and reliable results.

Furthermore, the interdisciplinary nature of forensic investigations underscores the importance of collaboration between forensic dentists, forensic anthropologists, pathologists, law enforcement agencies, and other experts involved in the process. By fostering open communication, sharing knowledge, and leveraging each other's expertise, the scientific community can collectively enhance the capabilities of forensic dentistry and strengthen the overall forensic investigation process.

It is essential to recognize that forensic dentistry extends beyond the confines of the laboratory or the courtroom. The work of forensic dentists

has a profound impact on society as it helps bring closure to families, brings justice to victims, and contributes to the overall integrity of the legal system. Disseminating knowledge about forensic dentistry within the scientific community ensures that advancements and best practices are shared, ultimately benefiting society as a whole.

In conclusion, forensic dentistry serves as a powerful tool in criminal investigations, disaster victim identification, and human identification. Through the meticulous analysis of dental evidence and the application of scientific methodologies, forensic dentists contribute to the resolution of cases and the pursuit of justice. By embracing technological advancements, staying informed about new techniques, and fostering interdisciplinary collaborations, the scientific community can further enhance the capabilities and reliability of forensic dentistry. Ultimately, the dissemination of knowledge and continuous advancements in forensic dentistry will continue to shed light on mysteries, provide closure to families, and contribute to a more just and secure society.

References

1. Nishioka, R. "Comparative strain gauge analysis of morse taper, internal hexagon, external hexagon and influence of straight and offset implant placement." *J of Gen Dent* (2020): 18-18.
2. Chatterjee, A. "Ankyloglossia: An overlooked anomaly in Indian population.-A Review of Literature." *J of Gen Dent* (2021): 1-1.
3. Wills, A. "The Scenario of Dental Caries." *J Dent Res Prac*. 4.3 (2022): 16-16.
4. Cobb, C. M. "Lasers in periodontics: a review of the literature." *Journal Of Periodontology* 77.4 (2006): 545-564.
5. Ishikawa, I., et al. "Application of lasers in periodontics: true innovation or myth?." *Periodontology* 2000 50.1 (2009): 90-126.