F7 I Dent: Leveraging Simple Technology to Facilitate Dental Identification to Access the Expert Wherever They May Be Hiding

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After attending this presentation attendees will: (1) understand the concept of distance identification and when it should and should not be used; (2) be able to use commercially-available hardware and software materials to carry this out in their own autopsy suite; (3) supervise associate forensic odontologists during their training; and, (4) understand the role of the pathology assistant in the process of facilitating dental identification.

This presentation will impact the forensic science community by providing a simple guide to methods that allow coordinated efforts between advanced practice pathology assistants in a secure setting and the forensic odontologist in instances where direction of the oral autopsy, guidance for image selection, and interim identification by dental means is required.

The function of a medical-legal autopsy is to determine the means, manner, and cause of death and, importantly, the identity of the deceased. It is well documented that dental identification is simple, cost-effective, and efficient in the process of body identification. Performing critical procedures at a distance from the patient is well-established in medicine and includes tasks as variable as electrocardiogram interpretation, diagnostic image interpretation (teleradiology), and even robotic surgery. This study has extended this concept to the process of dental identification, specifically regarding distance dental identification that may be undertaken in cases of dental identification when the forensic odontologist is at a distance from the autopsy suite. It is dependent on establishing a secure and nimble means of communication and simple file transfer.

Initial contact is made with the forensic odontologist of a pending case, using smartphone technology. Included in this communication are the case number and putative identification. A specific time is designated for further secure communication using password-protected technology. Once antemortem records are received, the pathology autopsy assistants, with advanced training in dental radiography and anatomy, submit the antemortem records via images attached to texts, e-mail attachments, or directly using commercially available software. The forensic odontologist verifies the case number and, if necessary, directs the clinical and radiographic examination and data collection. The results of the postmortem examination are sent similarly to the antemortem data. Once received, the forensic dentist uses a commercially available smartphone projector to: magnify and evaluate both the antemortem and postmortem data; antemortem and postmortem clinical and radiographic data for points of concordance; and, to determine if the case is identified. Subsequently, a report is prepared and sent. Alternately, the body can be held until the forensic odontologist can personally attend or a back-up forensic odontologist can be called if the case is a thorny one or one that requires multiple complex imaging. Once images are digitally captured and transmitted, a case can be sent to a trainee odontologist, who may simultaneously prepare a draft report for review by the senior odontologist.

The most basic material set for this to be carried out is two smartphones, but may include computer tablets, portable projectors, or laptop computers. Issues to be aware of include transmission privacy, security, transmission of data from both in the mortuary and to geographic locations where cell phone coverage is problematic. Additionally, for identifications undertaken outside Canada, it is necessary to work in cooperation with Embassy staff to ensure contact with the supervising forensic pathologist or investigating coroner.

The system is simple, inexpensive, robust and has been used in geographic locations in Canada, United States, South America, and at sea in the Pacific. It is not intended to replace “live” identifications, but to act as an adjunct, a training tool, and as means of undertaking peer review and precludes the necessity of removing jaws from remains to transport to the forensic odontologist.

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