H79 Identification of Bodies Via Unique Serial Numbers on Implanted Medical Devices

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After attending this presentation, attendees will: (1) understand a simple and definitive, but likely underutilized, method for identification of decomposed or otherwise visually unidentifiable bodies; (2) understand what types of implanted medical devices are likely to contain imprinted unique serial numbers; and, (3) understand how to perform dissections to reveal serial numbers on prosthetic joints and other implanted devices.

This presentation will impact the forensic science community by describing an underutilized method for rapidly and definitively identifying bodies and by providing data supporting the utility of this method.

Identifying bodies which are decomposed, charred or have extensive facial trauma is a common challenge faced by medical examiners and coroners. When visual identification is not possible, alternative methods of identification include dental or chest X-ray comparison, fingerprint comparison, or DNA comparison. A relatively underutilized method of identification is by comparison of unique serial numbers on implanted medical devices with the serial number recorded in the medical record at the time of implantation. This method of identification is particularly valuable because it uses a serial number that is specifically designed to be unique, as opposed to other methods of identification that are predicated on empirical observations of uniqueness. The utility of this method is likely to increase as implanted medical devices become more prevalent and medical device manufacturers develop more robust methods for tracking devices at the individual patient level. In order to assess the utility of this method of identification, a retrospective review of a regional medical examiner office's case files was performed for cases that required an alternative (non-visual) method of identification.

Between January 1, 2015, and March 31, 2016, 464 forensic autopsies were performed at the Southern Minnesota Regional Medical Examiner Office at Mayo Clinic in Rochester, MN, which provides medical examiner services to multiple counties in southeastern Minnesota. Of these 464 autopsies, 45 bodies were determined to be not visually identifiable due to extensive decomposition (n = 27), contact gunshot wound of the face (n = 8), extensive blunt trauma involving the face (n = 5), and charring of the entire body (n = 5). Of these 45 bodies, at least six (13%) had an implanted medical device with possible identifying information. Of these 6 cases, five (83%) could be positively identified at the time of autopsy by comparing the unique serial number on an implanted medical device to the serial number recorded in the medical record. The types of devices that were used for identification were prosthetic knee joints (n = 2), prosthetic shoulder joint (n = 1), implanted femoral rod (n = 1), and intrathecal medication pump (n = 1). The one case in which identification could not be positively made via a medical device was an ankle fixation plate, which contained an imprinted company logo, type number, and an apparent serial or lot number, none of which were recorded in the medical record.

In conclusion, comparison of unique serial numbers on implanted medical devices is a practical method for the identification of bodies and should be considered a first-line method for identification if there is a known implanted medical device likely to have a unique serial number. In situations in which there is a presumptive identification, the serial number can be compared with the serial number documented in the medical record. In situations in which there is no presumptive identification, the medical device manufacturer can be contacted to determine whether they possess patient-specific identifying information for that implanted device. Postmortem X-rays of unidentified

bodies are advisable to determine whether implanted medical devices are present, to provide postmortem films for potential comparison with antemortem films, and to rule out the presence of ballistics. Devices in this study that contained unique serial numbers were prosthetic joints, femoral rods, and intrathecal pumps. Cardiac pacemakers, defibrillators, and Left Ventricular Assist Devices (LVADs) also contain unique serial numbers. Orthopedic fixation plates may contain imprinted numbers and logos, but the lack of consistent documentation in the medical records may preclude their utility as a definitive method of identification.

Identification, Medical Device, Serial Number