



F12 Dental Identification of Human Remains From Orthopedic Metallic Fixation Appliances

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After attending this presentation, attendees will better understand the methods in facial reconstruction that can aid in dental identification of human remains. This presentation will impact the forensic community by educating the forensic community of the possible orthopedic fixation methods that are used in treating facial fractures in reconstructive cases. The Identification of human remains through dental means is a comparison methodology that has proven effective through the years of forensic science. Through attending this presentation, the participant will better understand the methods in facial reconstruction that can aid in dental identification of human remains.

The objective of this presentation is to educate the forensic community of the possible orthopedic fixation methods that are used in treating facial fractures in reconstructive cases. The Identification of human remains through dental means is a comparison methodology that has proven effective through the years of forensic science. Through attending this presentation, the participant will better understand the methods in facial reconstruction that can aid in dental identification of human remains.

Facial fractures can be either accidental as a result of trauma or intentional in the case of orthopedic surgery. The materials presented are intended to familiarize the forensic community with possible materials or fixation methods they may encounter in missing/unidentified person cases. Material will be presented to demonstrate the probable location of plate placement in surgical fixation. The current methodologies in facial reconstructive surgery will be discussed to demonstrate the most common facial fractures and their reduction.

Case presentation—John Doe: In February 2001, the body of an individual was discovered in the Rio Grande River in Laredo, Texas. Laredo police recovered the body and, the remains were transported to the Bexar County Medical Examiner's office for autopsy. Robert Bux, MD performed the autopsy. External findings of the examination reveal a Caucasian or Hispanic male 25-35 years of age. The decedent was found to be wearing multiple layers of clothing most indicative of a transient/homeless individual. The maxilla and mandible were resected by the Medical Examiner and CERF was requested to perform a dental profile as a means of possible identification of the decedent. The dental examination revealed an occlusal amalgam restoration to tooth #3 and teeth #'s 14 & 31 missing.

Other remarkable findings of the resected specimen include the discovery of stainless steel plates to the decedent's left angle of the mandible and to the mental symphysis. The plating at the angle of the mandible is supplemented with a titanium 'Champy plate' or stress breaker. This combination of plates constitutes a unique combination due to its mixture of materials and the placement of the fixtures.

Digital panoramic and intraoral radiographs and, digital photographs were taken of the specimen. The prosthetic plates were removed and examined using magnification. Viewing under magnification revealed a company logo and numbers on each of the plates. The logo was discovered to be that of the Synthes Company following an Internet search. Communication with the Synthes Company revealed that the numbers on the removed plates are lot numbers that cannot be traced to an individual as with other prosthetic appliances that require tracking. The information contained on the plates was lot numbers that provide a time for production of the items and their release for availability to practitioners. The Synthes Company maintained no documentation to allow tracing the sale of the products to individual customers. Further discussion with Synthes' representatives reveals that the plates were possibly distributed to Hospitals, Oral Surgery offices and Veterinary clinics.

Review of photographs and radiographs of the specimen by several Board Certified Oral and Maxillofacial Surgeons reveals that the reconstructive repairs were performed following facial trauma as was initially presumed. The mixture of titanium and stainless steel plates also indicates a high probability of the surgery being performed outside of the United States. The information collected from the metallic plates and the progression of healing indicate that the surgery would have occurred between the latest distribution date of the appliances in November 1994 and, approximately June 2000.

At the time of submission of this abstract the disposition of this case with the Laredo Police Department remains as unidentified.

Dental Identification, Forensic Odontology, Facial Reconstruction