G32 Dental Identification of Carbonized Victims in a 2015 Traffic Accident in France

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Learning Overview: After attending this presentation, attendees will understand the need for strict protocol implementation before intervening at a disaster site. Attendees will also understand the importance of forensic odontologists being part of the recovery team, especially in cases involving carbonization.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by demonstrating that the forensic odontologist's role is not only to collect antemortem and postmortem indices, but that dental protocols are an integral part of the overall process involving the work of other disciplines to obtain an optimized and effective outcome.

A traffic accident occurred in Puisseguin**,** France, on October 23, 2015, and caused 43 casualties. This accident was the deadliest event in France since the Beaune accident in 1982, which caused 53 deaths, including 46 children. In the Puisseguin case, two vehicles and 51 persons were involved in the accident. A coach with 47 seniors, their driver, and their tour guide began a sightseeing trip. A trailer truck was moving into the left lane during a turn. It was driven by a 31-year-old driver accompanied by his 3-year-old son. These two vehicles caught fire immediately at the moment of collision, causing 43 casualties and injuring eight people, four of them severely.

According to the Land Transports Accidents Bureau of Investigation, once the fire had started in the bus, the Anti-Breaking System (ABS; thermoplastic polymer), polypropylene, polyester, and polyurethane that made up the interior trim of the vehicle began to burn and release highly toxic fumes, which spread very rapidly throughout the vehicle. Within one hour following the accident, L'Institut de Recherche Criminelle de la Gendarmerie Nationale (IRCGN) (The Criminal Research Institute of the French Gendarmerie) was called to the scene to handle this disaster.

A multidisciplinary postmortem team was deployed on the ground to recover the charred victims. Extreme care had to be taken when moving the bodies, placing them in body bags, and then transporting them to the medicolegal institute in Bordeaux as these were all technique-sensitive processes that could have resulted in the loss of critical forensic materials. Photographs were taken to preserve dental data before moving the corpses. All of the heads exhibited a severe degree of carbonization; front, right, and left lateral photographs were taken as a safeguard measure to document as much evidence as possible. This protocol was complemented by placing special bags around the heads to avoid losing any evidence during transportation. Any carbonized remains that had separated from the victims' bodies were sieved to recover any remaining items that may have been forensically interesting.

One forensic dentist from this PM team was sent to the medicolegal institute in Bordeaux to take part in autopsies, dental examinations, and data collecting. An antemortem team was set up at the Criminal Research Institute of the French Gendarmerie in Pontoise near Paris. One forensic pathologist and forensic odontologists got in touch with victims' families to obtain the maximum amount of antemortem data and all the victims were identified when medical and dental data were sufficient. A small antemortem team was also set up in a classroom in a village close to Puisseguin, where families could come to bring in any medical files and X-rays.

This presentation relates the causes and all dental identification techniques established to identify these traffic accident victims. This presentation demonstrates the importance of the strict observance of the selected protocols and the added value of the forensic odontologists' participation in the recovery of the charred victims.

Forensic Odontology, Traffic Disaster, Carbonization