F30   Radiographic Images of Dental Implants as an Aid to Human Identification

Emilio Nuzzolese, DDS, PhD, Studio Nuzzolese, viale J.F. Kennedy 77, Bari, 70124, ITALY; Claudia Liuzzi, MD, Sezione di Medicina Legale, Università degli Studi di Bari, Bari, 70100, ITALY; and Giancarlo Di Vella, PhD, Sezione di Medicina Legale, DIMIMP, University of Bari, Policlinico, piazza G. Cesare, Bari, 70121, ITALY*

After attending this presentation, attendees will have an understanding of the importance of identifying dental implants for forensic purposes through their radiographic image with the aid of an archive of radiographic dental implants images.

This presentation will impact the forensic community by demonstrating how forensic dental radiology and human identification can benefit the recognition of dental implant manufactures found in forensic casework.

Dental prosthetic rehabilitation with fixed crown or partial/complete dentures supported by titanium implants is a very common treatment. There are a great number of implant systems of different designs available on to dentists, distributed on a national and/or international basis.

Forensic dental identification of an unknown decedent is a process which involves taking X-ray images of jaws in order to reveal as much information as possible about the deceased.

Forensic odontologists use, in fact, radiographic evidence to outline a profile of the unidentified remains. Likewise, clues gleaned from the type of implants used could also give direction, or narrow, the field of the investigation. Because dental implants from the various producers differ in shape and design, a variety of implant radiographic images must be expected. However, a catalogue of radiographic images of dental implants is not yet available.

The research began by collecting specimen implants from different manufactures with the aim of creating an archive of radiographic dental implant images. Fourteen dental implant manufactures replied sending multiple implants of various designs.

Digital radiographs were taken of all the implants donated at 0º, 30º, and 60º of horizontal rotation combined with -10º, 0º, and +10º vertical inclination relative to the radiographic beam and the x-ray sensor, in order to mimic clinical situations. A total of nine images per implant were taken and recorded in the archive.

The survey should be considered a work in progress, as the archive has still to be enlarged. A worldwide radiographic implant image database, including similar "cloned" implants, would be an enormous help to both forensic odontologists and prosthodontists in identifying pre-existing implants.

Dental Implants, Dental Radiology, Human Identification