



Odontology Section – 2006

F10 Implantation of an RFID Tag Into Human Molars Reduces Hard Forensic Identification Labor: Part I - Modification and Implantation of an Existing RFID Tag for Forensic Purposes

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After attending this presentation, attendees will be familiar with the use of an RFID tag for human identification. This presentation will impact the forensic community by demonstrating a new possible approach for human identification is discussed. The objective of this presentation is to explain a human radio frequency identification system, which allows to identify a body immediately after it is found.

The tsunami disaster in Takuapa (Thailand), and more recent the bombings in London showed once again, the need of an accurate, quick and easy to handle human forensic identification system. The implantation of a radio frequency identification (RFID) tag into a human tooth and the read out of its information may give answer to this problem. One forensic odontologist would be able to detect and read the protected identifying data with a portable interrogator, avoiding time and money consuming identification procedures.

A worldwide use of the worked out RFID set-up, could register the identity of the human remains from the moment they are found. The families and acquaintances of the deceased person could start immediately the grieving process and all their legal issues could be resolved at once. The forensic odontologist's identification work would be accurate, instant, easy and cheap.

A description is given of the modification of an existing RFID-tag for veterinary use. This modified system was implanted in extracted human molars using directly bonded resin composites. A protocol for tooth preparation and tag implantation in vitro was developed. A study of the read-out patterns of two different tag types revealed the readout distance, as well as the optimal place of RFID-tag implantation, assemblage of its components and dimensions of primary coil.

It was found that disassembling and implanting RFID tags in human molars was practically feasible.

Radio Frequency Identification Tag , Tooth, Composite