



B65 “Who Is My Father?” The Role of Forensic Genetics in The Resolution of a Paternity Case

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After attending this presentation, attendees will understand the problems associated with the identification of skeletal remains in southern Italian cemeteries in controversial parental relationship cases. The collaboration of experts in forensic pathology, anthropology, and genetics can greatly speed up the process of identifying the skeletal remains used in these cases.

This presentation will impact the forensic science community by suggesting a schematic approach in controversial parental relationship cases based on mixed skeletal remains.

In the Italian legal system, decedents must be buried in sealed wooden coffins and may be exhumed after a period of five to ten years. Each body is wrapped in a single sheet, inside of which is placed a document with brief details necessary for quick identification in the event of subsequent inspections. The number of bodies found in a tomb and information about the date of birth and death of each of these bodies are listed in the cemetery register.

A case of forensic judicial paternity is presented. An inquiry was made by a 64-year-old man (DG) against an alleged father (SLx). DG wanted to know who his biological father was. Unfortunately, DG learned that the alleged father had died. SLx was 72 years old at death, and his remains were placed in the family tomb with the remains of four other members of the family: the father (SP) (87 years old at time of death), the mother (88 years old at time of death), and two brothers (SF1-2). At first, the judge had authorized the comparison of profiles between the presumed father (SLx) and the requesting party (DG); however, a preliminary inspection of the family tomb showed that cemetery personnel had not put the document with the critical information within each sheet. The document was placed only in the sheet that wrapped the remains of one of the brothers of SLx. Therefore, the judicial authorities ordered a new investigation in order to establish through morphological and anthropometric assessments the identity of the skeletal remains in the tomb. Genetic testing was conducted on all human remains in order to obtain genetic profiles to be compared with the genetic profiles obtained from DG and his son (DGS). The forensic approach used was the one used to identify bodies following a mass disaster. At first, a consultation between the geneticist and the relatives of the decedents occurred. This consultation provided very important information.

After a generic identification based on morphological and morphometric data, a radiological investigation was performed. Genetic analysis was conducted by comparing the genetic profiles obtained from the fragments of the femurs of SLx, SP, and SF with the profiles of DG and DGS. Genetic analysis showed the parental relationship between SP, SF, DG, and DGS, but no relationship was found with SLx with the remains that were assumed to belong to the alleged father. Therefore, the genetic puzzle was solved indirectly by comparing the genetic profiles of the relatives of the alleged father. The same genetic testing showed that during the displacement of the bones in the family tomb, the actual remains of SLx were lost and replaced with the remains of an unrelated individual. Moreover, DG learned that he was the grandson of SP and thus became aware of his origins and biological family despite the genetic investigation proving that the remains of the alleged father didn't exist and that SLx was unknown. This case of alleged paternity opened another court case about the true identity of the remains of SLx.

The multidisciplinary approach allows, in cases of doubt, for the identification of commingled human remains through the use of the same method used for mass disasters. The close collaboration between different disciplines such as forensic pathology, forensic anthropology, forensic radiology, and genetic forensic experts confirmed that these areas should always be used in paternity puzzles, especially when it comes to comparisons with buried human remains. The anthropological, radiological, and osteological evaluations can help in the identification and attribution of associated macroscopic remnants, while the genetic analysis, through the enhancement of the sampled subjects for molecular comparisons, can confirm the hypothesis of the investigators.

Forensic Science, Human Identification, DNA Paternity Testing