A168 Evaluating the Probative Value of Sexual Assault Evidence Collected From Suspects

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After attending this presentation, attendees will appreciate the value of collecting suspect sexual assault kits on a regular basis and of the use of a standard sexual assault kit format.

This presentation will impact the forensic science community by introducing how victim DNA can be obtained from sexual assault suspects. Demonstrations on how victim DNA can be detected on penile swabs and finger swabs collected from sexual assault suspects up to and at least 28 hours after the alleged assault.

Over 80,000 forcible rapes are reported in the U.S. annually. Many states have established protocols for the medical forensic examination of sexual assault victims and a national protocol was published by the President's DNA Initiative in 2004. It is believed that only California has a standardized protocol with instructional guidelines, along with a forensic medical report form, for the collection of evidence from suspects. When a sexual assault suspect is known and available, collection of evidence from this suspect in a timely fashion may aid in corroborating the victim's report. The objective of this study was to evaluate the probative nature of evidence obtained during forensic exams of suspects in sexual assault cases. This retrospective study reviewed findings from 106 suspect sexual assault kits (encompassing 102 cases) collected in the City of Oakland, California from 2000 through 2009. This included review of 49 suspect sexual assault kits collected at a county designated hospital prior to February 2006 and 57 kits collected by a contract service at the county jail after February 2006. Data from the California suspect forensic medical report (CalEMA 2-950 form) was collated with the appropriate data from the corresponding victim kit forensic medical report (CalEMA 2-923/930 forms). The data and relevant information were translated into a database structure. Information from the Oakland Police Department Criminalistics Laboratory analyst case notes including the victim and suspect kit inventory, examination notes, microscopic examination form, and genotyping data table(s) was integrated into the database.

The sample collection protocols differed between the two collection agencies. Prior to 2006, during collection at the county hospital, a single swab was used to collect from the suspect's penile glans and shaft. Scrotal swabs, separate glans and shaft penile swabs, and finger swabs were not collected on a consistent basis. After 2006, a procedural change occurred as collection was shifted to the county jail: finger swabs, separate swabs for penile glans and shafts, and scrotal swabs were collected on a regular basis. For this study, of the 106 kits examined, 104 kits contained genital swabs and 54 contained finger swabs. In total, DNA profiling was performed on 130 genital swabs and 94 finger swabs. No DNA typing was done on 18 of the kits based on analyst discretion, failure to detect epithelial cells, or redundancy of samples.

A standard protocol was used for the examination of the swabs. The swabs were extracted and the extracts were examined microscopically for cellular material. Typically, samples with epithelial cells or sperm were taken to DNA typing. In some cases, based on analyst discretion, samples without epithelial cells were also taken to DNA typing. Prior to September 2007, amplification was performed with the AmpFlSTR Profiler Plus® typing kit. For cases after September 2007, samples were amplified with the AmpFlSTR Identifiler® typing kit. DNA profiles containing DNA from someone other than the suspect were classified as having "Foreign DNA." Profiles with foreign DNA were categorized as "Probative" if the victim could not be eliminated as a possible source. The post assault interval (PAI) time was determined for each kit using date and time of the alleged sexual assault stated on the victim forensic medical report or police report and the date and time of penile swab collection noted in the suspect forensic medical report.

Probative DNA typing results were obtained from at least one genital swab in 42% of cases (44 of 104) or finger swab in 30% of cases (16 of 54). Half or more of the possible victim's DNA profile was detected on at least one genital swab in 24% (25 of 104) and on at least one finger swab in 17% (9 of 54) of cases. Full victim DNA profiles were obtained on at least one genital swab in 17% (17 of 104) or finger swab in 11% (6 of 54). A full victim DNA profile was obtained from a genital and a finger swab out to 18 hours and a 60% DNA profile on a genital swab was obtained at 28 hours.

Suspects, Sexual Assault, DNA Profiling

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