G68 Fatal Sexual Violence Database for Postmortem Genital Examinations With Colposcopy

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The goals of this presentation are to provide a systematic method of data collection and storage that will enable us to better understand the nature and appearance of the anogenital tissues at various postmortem intervals; to integrate a taxonomy that is consistent with conventional terminology, e.g., terms used in forensic pathology and forensic odontology; and to study the reliability of previously-presented methodology for postmortem genital examinations, with colposcopy.

This presentation will impact the forensic science community by improving the diagnostic acumen of the forensic examiner and serve as a format for quality improvement; providing a framework for the evaluation of fatal sexual violence against women; and increasing the reliability and validity of both taxonomy and techniques (methodology) used to examine victims of fatal sexual violence.

This paper describes ongoing clinical research of postmortem genital anatomy and a methodology to capture data gleaned both from baseline studies and presenting cases of fatal sexual violence.

The nature of these crimes, coupled with a lack of a detailed history from the victim, predicates adoption of the most accurate methodology and technology available; these victims are not available for follow-up examinations.

A fatal sexual violence database provides a relational system in which to record, analyze, and compare data from both baseline studies of normal anogenital anatomy and cases of sexual homicide. While it is helpful for the forensic examiner to be cognizant of previous classification systems used to describe findings in living subjects (Fraser: WHO, 1999), a taxonomy germane to the postmortem arena should incorporate salient terms that will be consistent and universally applicable and acceptable within the forensic community (Crowley & Peterson: AAFS, 2004). Inclusion of these findings into a relational database will permit aggregate summaries of individual and population- based summaries.

Materials and Methods: Initial case documentation for the baseline clinical study conducted at the Donated Body Program of University of California Davis, Sacramento, is via the *Postmortem Genital Examination Case Worksheet*. A hardcopy of this form is completed in the morgue. It contains all data fields, with essential elements of the case, methods of examination, and summary of findings.

For these cases of normative controls, some fields in the database will not be populated; other variables are common to both sexual homicide and control groups. Because the strictest efforts are enacted by the Donated Body Program to protect identifying data and personal information of the donors, some information is simply not available, e.g., date of birth (only age is used), address, disposition of the body, time body found, position of the body, social history and lifestyle, gynecological history, clothing, and other personal items on the body at the time of death. Conversely, for cases of sexual violence, the aforementioned variables, plus date of birth, elements of the crime scene, restraints and bindings, body positioning, nongenital trauma, including bitemarks and other patterned injuries, genital trauma, and all biological and forensic specimens for the Sexual Assault Evidence Kit are germane to the case composite. Some techniques for examination would be relevant to medical-legal cases, but might not routinely be available for normative studies, e.g., Wood's Lamp, alternate light source, or reflective light imaging.

Some variables common to both normative and sexual homicide cases include age and reproductive status, (pre-pubertal, reproductive age, peri-menopausal, and post-menopausal) and genital examination techniques (gross visualization, colposcopy, single lens reflex (SLR) camera photography, speculum and anoscopic examination, and the use of balloon-tipped swabs). Also, the same twelve anatomic sites are visualized, inspected, and photographed: *labia majora, peri-clitoral area, peri-urethral area, labia minora, hymen, vagina, cervix, perineum, fossa navicularis, posterior fourchette, anus, and rectum.*

Other common variables include the unique case identifier, date and time of the examination, interval from death to arrival in forensic science morgue (£ 24 hrs., 24-48 hrs., 48-72 hrs., 72-96 hrs., ³ 5 days); general condition of body; race and ethnicity (per CDC definitions); cause of death, and contributory and/or concomitant medical and gynecological conditions, especially those presenting lesions.

Postmortem artifact, such as mucosal autolysis and skin slip that is visualized in the anogenital tissues is documented for each anatomic site where it is noted.

Initially, a spreadsheet was utilized for its capability to easily record, sort, and organize the various data elements. A relational database, e.g., ACCESSâ, permits data to be divided into many subject fields and represented only once. Divided information can be re- synthesized via common, related subject-based tables. This will remove data redundancy and help ensure accurate information. The rows and columns in the tables are expanded data collections of the postmortem examination worksheets for documentation of data during the course of the clinical examination. Data can eventually be exported into other data systems, e.g., SPSSâ, for more advanced statistical analysis.

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Discussion: In addition to the multiple variables present during any female genital examination, the postmortem arena superimposes a unique set of factors onto the scene. Many of these were not previously been studied or sufficiently documented in the literature. A fatal sexual violence database serves as an efficient repository of data accumulated during the Donated Body Program baseline study, in addition to any concomitant, presenting sexual homicide cases.

Missing data may also be significant e.g., the fact that a body of a Jane Doe found without any identifying information, e.g., driver's license, passport, could be a potential link to human trafficking (Crowley: AAFS, 2009). Records of actual fatal sexual violence cases will have many variables that are not germane to the baseline controls. Thus, a relational database is an ideal method to simplify and quantify data for interpretation, analysis, and linkage to other cases.

Storage and evaluation of data will help avoid ambiguity in the interpretation of findings for this target population. Analysis and interpretation of data will increase the diagnostic acumen of the forensic examiner. It will also facilitate effective and reliable communication within the forensic and legal community, via a more descriptive taxonomy. An effective database will allow eventual comparison of the genital findings in fatal sexual homicide victims to a control group of individuals who died of other causes, i.e., natural, accidental, suicide, and non-sexual homicide.

Finally, the ultimate goal of this research is to improve our understanding of what is normal, and what is not, for the anogenital anatomy during the postmortem interval. To this end, data gleaned from a fatal sexual violence database can be used to expand and enhance our knowledge. The forensic examiner is presented with the challenge to "capture" in hardcopy and electronic systems, a myriad of variables and conditions presented by each body in the morgue. Until recent years, a paucity of information existed on the appearance of the anogenital tissues during the postmortem interval. Comparisons to either living sexual assault victims or postmortem cases of non-sexual etiology were extremely difficult. Thus, it is paramount that the examiner always be cognizant of the need to perform these examinations with optimal levels of expertise and to permanently chronicle vital information. In this manner, our capacity and understanding of fatal sexual violence against women will continue to grow.

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