Identifying Genital Trauma in Sexual Assault Victims

Amanda Corzine RN BSN, Melissa Edlin, RN MSN, Melissa Platt MD, Anna Smith RN MSN, Sandra Smith PhD APRN
KentuckyOne Health SAFE Services
University of Louisville Hospital

PURPOSE
To evaluate genital injury detection rates in the sexual assault medical/forensic exam after implementation of enhanced visualization protocols.

BACKGROUND
Genital injury identification in sexual assault victims is necessary to determine medical treatment and may impact criminal justice outcomes. The frequency of genital injury identification varies across studies, ranging from 16% to 77%. Techniques used to identify genital injury have evolved from simple visualization to enhanced visualization with the use of toulidine blue (TB) dye and colposcopy. TB dye is a nuclear stain applied to the external genitals which can increase injury identification by 60%. Colposcopy magnifies and photographs external and internal genital injuries. Despite documented improvements in injury identification with these tools, discrepancies in use remain. Logan et al. (2007) found that only 64% of Sexual Assault Nurse Examiner (SANE) programs use colposcopy and 31.6% use TB Dye “most of the time”. Additional information is needed on how to best implement enhanced visualization protocols.

SUBJECTS
Medical records of sexual assault victims (n=899) presenting to a metropolitan hospital and SANE clinic from 2010 through 2013 were eligible for study.

METHODS
A retrospective descriptive design was used. Time to presentation after assault, age, race, type of penetration, type and frequency of genital injury, and visualization methods used were abstracted from the health record. Injury findings were compared with protocol changes regarding enhanced visualization over the study period. Protocol driven mandatory use of TB dye and Colposcopy was implemented in 2011.

RESULTS
Sexual assault victims were mostly female (95.2%) with a mean age of 28 years (+/- 11.6). Victims were White (65.3%) or African American (26.3%). Victims presented within 24 hours (74.5%) of the assault. Genital injury findings significantly increased from 35.3% in 2010 to 51.3% in 2013 (p=.001). Use of TB dye by examiners increased by 25% over the same time. Colposcope use increased from 4% in 2010 to 52% in 2012 before declining to 22.6% in 2013. There was a significant relationship between genital injury findings and use of enhanced visualization (p < .0001).

ANALYSIS
SPSS version 21 (IBM, Armonk, NY) was used for analysis. Measures of central tendency and dispersion were computed on interval/ratio level variables. Chi-Square tests were used to assess the relationship between genital injury findings and type of visual examination.

CONCLUSION
SANE practitioners should implement policies standardizing use of enhanced visualization techniques in the medical/forensic exam. The decline in colposcope use in 2013 was likely related to ongoing equipment malfunctions experienced over several months during that year. Equipment maintenance and continual staff training on colposcopy and TB dye use is essential to maximizing genital injury identification. Standardized protocols are an effective way to implement best practices in SANE Programs.

Future Directions
Additional research is needed to determine best practices in implementing enhanced visualization protocols and to assess improvements in criminal justice outcomes with their use in treating sexual assault victims.