

Opportunities Forensics Biology in the Study of Sperm Traces after Washing

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Abstract : Achievements of modern science, especially genetics, led to a sharp intensification of the process of proof. Footprints, subjected to destruction-related cause-effect relationships, are sources of evidentiary information on the circumstances it was committed and the persons committed it. Currently, with the overall growth in the number of crimes against sexual inviolability or sexual freedom, and increased the proportion of the crimes where to destroy the traces of the crime perpetrators different detergents are used. A characteristic feature of modern synthetic detergents is the presence of biological additives - enzymes that break down and gradually destroy stains of protein origin. To study the nature of the influence of modern washing powders semen stains were put kinds of fabrics and prepared in advance stained sperm of men of different groups according to ABO system. For research washing machines of known manufacturers of household appliances have been used with different production characteristics, in which the test was performed and the washing of various kinds of fabrics with semen stains. After washing the tissue with spots were tested for the presence of semen stains visually preserved, establishing in them surviving sperm or their elements, we studied the possibilities of the group diagnostics on the system ABO or molecular-genetic identification. The subsequent study of these spots by morphological method showed that 100% detection of morphological sperm cells - sperm is not possible. As a result, in 30% of further studies of these traces gave weakly positive results are obtained with an immunoassay test PSA SEMIQUANT. It is noted that the percentage of positive results obtained in the study of semen traces disposed on natural fiber fabrics is higher than sperm traces disposed on synthetic fabrics. Study traces of semen, confirmed by PSA - test 3% possible to establish a genetic profile of the person and obtain any positive findings of the molecular genetic examination. In other cases, it was not a sufficient amount of material for DNA identification. Results of research and the practical expert study found, in most cases, the conclusions of the identification of sperm traces do not seem possible. This a consequence of exposure to semen traces on the material evidence of biological additives contained in modern detergents and further the influence of other effective methods. Resulting in DNA has undergone irreversible changes (degradation) under the influence of external human factors. Using molecular genetic methods can partially solve the problems arising in the study of unlaundered physical evidence for the disclosure and investigation of crimes.

Keywords : study of sperm, modern detergents, washing powders, forensic medicine

Conference Title : ICFS 2016 : International Conference on Forensic Sciences

Conference Location : Paris, France

Conference Dates : August 22-23, 2016