

CASE REPORT

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The Importance of Examining Skin and Hair for Semen in Sexual Assault Cases

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ABSTRACT: In some cases of sexual assault, the only laboratory proof of the allegation is by examining hair or skin for semen. The anatomic areas examined, depending on the history of the event, are head and facial hair and the skin of the perioral area, medial aspects of the thighs, and the buttocks. Head hair is clipped and eluted in saline, from which Pap smears and acid phosphatase determinations are made. The skin is smeared with saline-soaked cotton applicators, from which the above tests are run. Positive skin tests of the thighs or buttocks are also helpful in setting the time of the event and substantiating the allegation of rape, depending upon the history of bathing. Eight cases that illustrate these facts are presented.

KEYWORDS: pathology and biology, criminal sex offenses, skin, hair

In some sexual assaults, the only evidence to substantiate the allegations will be found in material obtained from the skin and hair. The medical history obtained from the alleged victim is helpful in determining the areas to be examined. If a history of fellatio is elicited, smears of the oral cavity as well as smears from the mucosal surfaces of the lips and cutaneous zones around the lips must be obtained. If the victim has expectorated, scalp hair must be examined for seminal contamination. In all cases of vaginal intercourse and rectal sodomy, the skin of the vulva, thighs, perianal area, and the buttocks is also examined for the presence of semen. Over the past five years, we have had eight cases in which the only evidence for sexual assault was based on the microscopic examination of material obtained from the skin or hair, or both.

Method

With a history of fellatio with or without expectoration, the scalp hair in the frontal or temporal areas is carefully examined for seminal contamination. Samples are clipped from areas where there is matting of the hair. These hair shafts are eluted in 3 mL of saline, which is then centrifuged. Pap smears as well as a cell block are made from the sediment. The supernatant is used for acid phosphatase analysis. Two cotton swab applicators moistened with saline are used to obtain material from the skin. These swabs are briskly rubbed over

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the skin surfaces, and the material obtained is smeared on glass slides and stained by the Papanicolaou technique. Acid phosphatase determinations are also carried out on material from the swabs. One swab was immersed in 3 mL of saline for 30 min at room temperature, with occasional agitation. A modified Bodansky technique (β -glycerol phosphoric acid, disodium salt, as substrate) was used on 0.5 mL of this elution to determine the level of prostatic acid phosphatase [1].

Case Reports

Case 1

A prisoner from a local jail was forced to perform oral sodomy on another inmate. Because of bureaucratic bungling, he was not seen for examination until 17 h had elapsed. During this time the victim had eaten supper and breakfast and had brushed his teeth and washed his face. Oral smears were negative for spermatozoa. However, material obtained from his moustache by using the moistened cotton applicator was positive for spermatozoa.

Case 2

A 10-year-old white female was abducted by a white male and forced to perform oral sodomy. She was seen approximately 8 h after the event. She stated that she had expectorated the semen. Careful examination of the hair revealed matting along the lateral aspects of her head. These areas were positive for spermatozoa as well as positive for acid phosphatase. The oral smears were negative.

Case 3

A white female who was an "escort" was forced to commit fellatio by a man in a moving automobile. She expectorated the ejaculated material. During the examination she actually pointed out the area of her hair that was soiled by the semen. Both Pap smears for sperm and the acid phosphatase determinations of material obtained from the hair were positive.

Case 4

A young lady was sunbathing in her backyard. A white male appeared and threatened her with a gun. He forced her into her home, where he attempted buggery. Smears from the anal canal were negative but smears from the skin of the buttocks were positive for a few spermatozoa.

Case 5

A 21-year-old female charged that she was sexually assaulted by two male athletes who forced her to commit oral sodomy and participate in rectal and vaginal intercourse. She stated that because of the oral sodomy she had vomited. Smears of the oral cavity were negative, but smears from the cutaneous zone around the lips were positive for spermatozoa.

Cases 6 and 7

These cases concern 9-year-old and 10-year-old females who were forced to participate in sexual activity with their fathers. This consisted of attempted vaginal intercourse. In both cases there were no indications of trauma about the external genitalia. Skin smears from the thighs were positive in both cases. In one case the area had been cleaned but the smears were still positive.

Case 8

A middle-aged white female was found shot to death in her bedroom. She was facedown in her bed, mouth gagged, and hands tied behind her back. She had been dead for approximately 2½ days. A large amount of soft, liquid feces covered the anal opening. Smears of the anal canal, vagina, and oral cavities were negative for sperm. The smears of the skin of the buttocks adjacent to the anal verge were positive for spermatozoa. The acid phosphatase test was negative.

Discussion

In all cases of a sexual assault, the skin of the thighs, particularly the anterior and medial aspects, and the buttocks is swabbed. If vaginal intercourse has been accomplished, the skin of the thighs is usually positive for sperm as well as acid phosphatase determinations. These findings are sometimes helpful in setting the time of the event and frequently assist in confirming the allegation of rape. For example, if the victim had had consensual intercourse 12 h before the attack and then bathed or showered in the interim, the probability is that sperm found on the skin of the thighs at the time of the examination were from the alleged rape. It is important to obtain a history of bathing in all cases. If the victim has not bathed after the alleged attack, the sperm seen in the material stained from the vagina as well as the skin are due to the alleged rape. Douching does not eliminate all sperm from vaginal vault but does reduce their numbers. Occasionally there are more sperm on the skin of the thighs and vulva after douching than in the vagina.

Conclusion

If the skin about the mucous membranes of the lips, medial and anterior aspects of the thighs, vulva, perianal area, buttocks, and head hair are not examined for the presence of semen, the only evidence of a sexual attack may be lost. Skin smears are also helpful in determining the time and verifying the alleged sexual assault, depending on when bathing had occurred.

Reference

- [1] Enos, W. F. and Beyer, J. C., "Prostatic Acid Phosphatase, Aspermia, and Alcoholism in Rape Cases," *Journal of Forensic Sciences*, Vol. 25, No. 2, April 1980, pp. 353-356.

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