MEDICINE

Classification of Anogenital Findings in Children with Suspected Sexual Abuse: An Evolving Process

–by Joyce A. Adams

Medical professionals who evaluate children for suspected sexual abuse are usually asked to render an opinion as to whether the child's examination is normal or abnormal, and whether the findings are consistent with the child's description of the abuse (when available).

In an attempt to develop some internal consistency in how we rate findings with respect to abuse, my colleagues and I at the Child Sexual Abuse Evaluation Program in Fresno, California developed and published a classification scale (Adams, Harper, & Knudson, 1992) Since the publication of the scale in April of 1992, we have made a few changes, taking new data into account. This paper will present our revised scale, with references to the studies of abused and non-abused children which were used to develop the classification scale, as well as subsequent research findings.

The definitions of the classifications of physical findings are as follows:

It is important to keep in mind that most children with documented sexual abuse will have no specific abnormalities on medical examination. We find it necessary to remind our colleagues in law enforcement, social services, and the judiciary that even in cases of legally-proven sexual abuse, 74-77% of children will have normal/non-specific examinations.

Class 1: Normal - Variations in the appearance of the hymen, perihymenal tissues, and peri-anal tissues which have been documented in more that 10% of the subjects in studies of non-abused children. The studies we used were McCann, et. al, 1989; McCann, et. al, 1990; Berenson, Heger, & Andrews, 1991; and Berenson, et. al, 1992. All variations in the appearance of the hymen in newborns (Berenson, Heger, & Andrews, 1991) are listed as normal.

Class 2: Non-specific - Findings which may be the result of sexual abuse, but may also be due to other non-abusive causes.

Class 3: Suspicious - Findings which are rarely seen in non-abused children and have been noted in children with documented abuse, but have not been clearly proven to occur **only** as a result of abuse.

Class 4: Suggestive of abuse or penetration - Findings, or a combination of findings which can only reasonably be explained by postulating that sexual abuse or penetrating injury has occurred. This type of finding would mandate a report to a law enforcement and child protective services, even if the child is unable to give a clear history of molestation, assuming there is no clear and consistent history of accidental penetrating injury.

Class 5: Clear evidence of penetrating injury - Findings which can have no explanation other than penetrating trauma to the hymen or peri-anal tissues.

We have carried out two research studies using this classification scale, and found that when medical professionals viewed colposcopic photographs, in the absence of a history (Adams & Wells, 1993, in press), or were asked to rate findings by name in a mail survey (Adams, Harper, & Wells, 1993, in press), it was necessary to combine Class 1 and Class 2 as "normal/non-specific", and Class 4 and Class 5 findings as "abnormal" in order to be able to analyze the results, because of the wide spread of responses using a 5-point scale. However, we still feel it may be useful, for research purposes, to continue with the 5-point system, and present the revised system here, in Table 1 and Table 2.

In a study of examiner agreement in which participants viewed and rated colposcopic photographs as to the significance of findings with respect to abuse (Adams & Wells, 1993, in press), there was more than 80% overall agreement on 2 cases showing a smooth, crescentic hymen as being normal/non-specific, 2 cases showing a hymenal transection as being abnormal, and one case showing anal dilation without stool and irregular anal folds as being abnormal. More experienced examiners, who examine more that ten cases of suspected abuse per month, also had 95% agreement in rating a posterior fourchette scar as abnormal, and a hymenal tag as normal/non-specific.

In a written survey of 141 physicians who examine sexually abused children (Adams, Harper, & Wells, 1993, in press), over 80% agreed on a rating of normal/non-specific for the following findings: hymenal tag; labial adhesion; increased erythema in the genital area; anal skin tags; and increased peri-anal dilation with stool present. 90% of the most experienced group also rated hymenal bumps as normal/non-specific. Findings rated by over 80% of respondents as abnormal were: hymenal transections; hymenal lacerations; worn away hymen; laceration of posterior fourchette or peri-anal tissues; granulation of tissue or scarring

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Opinion

–Richard J. Gelles

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Daro, D., (1987). *Deaths due to maltreatment soar: Results of the Eighth Semiannual Fifty-State Survey.* Chicago: National Committee for Prevention of Child Abuse.

Egeland, B., and Erickson, M.F. (1991). Rising above the past: Strategies for helping new mothers break the cycle of abuse and neglect. *Zero to Three, 11* (2), 29-35.

Gelles, R.J. 1991. Physical violence, child abuse, and child homicide: A continuum of violence, or distinct behaviors? *Human Nature.* 2, (1), 59-72.

Mayor's Task Force on Child Abuse and Neglect. (1983). *Report on the preliminary study of child fatalities in New York City.* New York: Mayor's Task Force on Child Abuse and Neglect.

Mitchel, L. (1989). Report on fatalities from National Committee for Prevention of Child Abuse. *Protecting Children, 6,* 3-5.

Sroufe, L.A. (1983). Infant-caregiver attachment and adaptation in the preschool: The roots of competence and maladaption. In M. Perlmutter (Ed.), *Development of cognition, affect, and social relations* (pp. 41-81). Hillsdale, N.J.: Lawrence Erlbaum Associates.

Texas Department of Human Resources (1981). *A study of child deaths attributed to abuse and neglect.* Austin, Texas: Child Abuse and Neglect Resource Center.

Wolfner, G., and Gelles, R.J. (1993). A profile of violence against children: A national study. *Child Abuse and Neglect, 17,* (2), 197-212.

Wexler, R. (1991). *Wounded innocents.* Buffalo, NY: Prometheus Press.

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on vaginal wall; positive cultures for Gonorrhea and Chlamydia; and the presence of Trichomonas. The presence of sperm was rated by 99% of respondents as clear evidence of sexual contact, Class 4 overall.

The results of these two studies indicate that medical professionals in the field of sexual abuse evaluation are reaching agreement, in some cases, as to which findings are normal in children, and which are specific for sexual abuse. Committees in the American Professional Society on the Abuse of Children are currently working to develop guidelines for terminology, as well as a consensus statement addressing the interpretation of findings in children with suspected sexual abuse.

It is important to keep in mind, however, that most children with documented sexual abuse will have no specific abnormalities on medical examination. We find it necessary to remind our colleagues in law enforcement, social services, and the judiciary that even in cases of legally-proven sexual abuse, 74-77% of children will have normal/non-specific examinations (Muram, 1989; DeJong & Rose, 1991).

We would welcome input from other professionals in the field on this classification scale.

The absence of physical "evidence" should never be used to screen out cases for prosecution, when the child's verbal evidence is strong and convincing. A large part of the medical professional's role in evaluating suspected sexual abuse is to document the appearance of his or her genitalia, and to emphasize that normal examinations, or non-specific findings, are consistent with most, if not all, types of molestation. Table 2 lists the "Overall Assessment of the Likelihood of Abuse" system that we use in formulating our opinion, after a comprehensive evaluation of the child.

An initial review of data on 426 children referred to our program during a 1 year period, only 6% of girls and 1% boys had clearly abnormal findings on examination, yet the overall assessment was "Probable Abuse" in 67%, and "Definite Abuse" in 5% of the cases, using the classification system we have presented here.

We would welcome input from other professionals in the field on this classification scale, and encourage others to use the scale in their centers, if it is found useful. Remember, though, that as more studies of abused and non-abused children appear, it may be necessary to make further revisions. Assessment of suspected sexual abuse is indeed an evolving field.

TABLE 1
Proposed Classification of Ano-Genital Findings in Children

Normal (Class 1)

1. Peri-urethral (or vestibular) bands (McCann, et al., 1990; Berenson, Heger & Andrews, 1991; Berenson, Heger, & Hayes, 1992).
2. Longitudinal intravaginal ridges (McCann, et al., 1990; Berenson, Heger & Andrews, 1991; Berenson, Heger, & Hayes, 1992).
3. Hymenal tags (McCann, et al., 1990; Berenson, Heger & Andrews, 1991; Berenson, Heger, & Hayes, 1992).
4. Posterior (inferior) hymenal rim measuring at least 1 millimeter wide (McCann, et al., 1990; Berenson, Heger, & Hayes, 1992).
5. Estrogen changes (uniformly thickened, redundant hymen) (McCann, et al., 1990).
6. Hymenal clefts in the anterior (superior) half of the hymenal rim: on or above the 3 o'clock - 9 o'clock line, patient supine (Berenson, Heger & Andrews, 1991).
7. Hymenal bumps or mounds (McCann, et al., 1990; Berenson, Heger & Andrews, 1991; Berenson, Heger, & Hayes, 1992).
8. Diastasis ani (smooth area) at 6 or 12 o'clock in peri-anal area (McCann, et al., 1989).
9. Anal tag/thickened fold in midline (McCann, et al., 1989).
10. Increased peri-anal pigmentation (McCann, et al., 1989).

Non-specific findings (Class 2)

11. Erythema of vestibule or peri-anal tissues (McCann, et al., 1989; McCann, et al., 1990; Muram, 1989).
12. Increased vascularity of vestibule or hymen (McCann, et al., 1989; McCann, et al., 1990; Muram, 1989).
13. Labial adhesions (McCann, et al., 1989; McCann, et al., 1990; Muram, 1989).
14. Vaginal discharge (McCann, et al., 1990; Berenson, Heger, & Hayes, 1992).
15. Lesions of condyloma acuminata in a child less than 2 years of age (American Academy of Pediatrics, 1991).
16. Anal fissures (McCann, et al., 1989; Muram, 1989).
17. Flattened anal folds (McCann, et al., 1989; Hobbs & Wynne, 1989).
18. Anal dilation with stool present (McCann, et al., 1989; Hobbs & Wynne, 1989).
19. Venous congestion of perianal tissues (McCann, et al., 1989; Hobbs & Wynne, 1989; Hammerschlag, 1988).

Suspicious for Abuse (Class 3)

20. Enlarged hymenal opening—greater than 2 SDs above mean, for age and position (McCann, et al., 1990; Berenson, Heger, & Hayes, 1992).
21. Immediate venous congestion of perianal tissues, with edema, and/or distorted anal folds (McCann, et al., 1989; Hobbs & Wynne, 1989; Hammerschlag, 1988).
22. Anal dilation of at least 20 mm with stool not visible in rectal vault (McCann, et al., 1989; Hobbs & Wynne, 1989).
23. Posterior hymenal rim less than 1 millimeter in all views (McCann, et al., 1990; Berenson, Heger,

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& Hayes, 1992; McCann, Voris, & Simon, 1992; Kerns, Ritter, & Thomas, 1992).

24. Condyloma acuminata in a child over 2 years of age (Hammerschlag, 1988).
25. Acute abrasions or lacerations in the vestibule or on the labia (not involving the hymen), or peri-anal lacerations (Muram, 1989; McCann & Voris, 1993; McCann, Voris, & Simon, 1992; Kerns, Ritter, & Thomas, 1992).

Suggestive of Abuse/Penetration (Class 4)

26. Combination of 2 or more suspicious anal findings or 20 or more suspicious genital findings.
27. Scar or fresh laceration of the posterior fourchette (Muram, 1989; McCann, Voris, & Simon, 1992).
28. Peri-anal scar (McCann & Voris, 1993).

Clear Evidence of Penetrating Injury (Class 5)

29. Areas in the posterior (inferior) half of the hymenal rim with an absence of hymenal tissue, confirmed in knee-chest position (Muram, 1989; McCann, Voris, & Simon, 1992; Kerns, Ritter, & Thomas, 1992).
30. Obvious hymenal transections (Muram, 1989; McCann, Voris, & Simon, 1992; Kerns, Ritter, & Thomas, 1992).
31. Peri-anal lacerations extending beyond (deep to) the external anal sphincter (McCann & Voris, 1993).
33. Recent hymenal-vaginal lacerations (Muram, 1989; McCann, Voris, & Simon, 1992).
34. Lacerations through the hymen and posterior fourchette, or perinuem (Muram, 1989; McCann, Voris, & Simon, 1992).

TABLE 2
Overall Assessment of the Likelihood of Sexual Abuse

Class 1: No evidence of Abuse

1.1 Normal exam, no history, no behavioral changes, no witnessed abuse.
1.2 Non-specific findings with another known etiology, and no history or behavioral changes.
1.3 Child considered at risk for sexual abuse, but gives no history and has non-specific behavior changes.
1.4 Physical findings of injury consistent with accidental trauma, with history given.

Class 2: Possible Abuse

2.1 Class 1, 2 or 3 findings in combination with significant behavioral changes, especially sexualized behaviors, but child unable to give history of abuse.
2.2 Presence of condyloma or Herpes I (genital) in the absence of a history of abuse, and with otherwise normal exam (Hammerschlag, 1988).
2.3 Child has made a statement, but no detailed or consistent history.
2.4 Class 3 findings with no disclosure of abuse.

Class 3: Probable Abuse

3.1 Child gives a clear, consistent, detailed description of molestation, with or without other findings present (American Academy of Pediatrics, 1991).
3.2 Class 4 or 5 findings in a child, with or without a history of abuse, in the absence of any convincing history of accidental penetrating injury (American Academy of Pediatrics, 1991).
3.3 Culture proven infection with Chlamydia trachomatis (child over 2 years of age) in a prepubertal child. Also culture proven Herpes Type 2 infection in a child, or documented Trichomonas infection (Hammerschlag, 1988; American Academy of Pediatrics, 1991).

Class 4: Definite Evidence of Abuse or Sexual Contact

4.1 The finding of sperm or seminal fluid in or on a child's body (Muram, 1989; American Academy of Pediatrics, 1991).
4.2 A witnessed episode of sexual molestation. This also applies to cases where pornographic photographs or videotapes are acquired as evidence
4.3 Non-accidental, blunt penetrating injury to the vaginal or anal orifice (McCann & Voris, 1993; McCann, Voris, & Simon, 1992).
4.4 Positive, confirmed cultures for Neisseria gonorrhea in a prepubertal child, or serologic confirmation of acquired syphilis (Hammerschlag, 1988; American Academy of Pediatrics, 1991).
4.5 Pregnancy (Muram, 1989; American Academy of Pediatrics, 1991).

References

Adams, J., Harper, K. & Wells, R. (in press). How do pediatricians interpret genital findings in children? Results of survey. *Adolescent Pediatric Gynecology*

Adams, J., & Wells, R. (in press) How well do examiners agree? *Child Abuse and Neglect*

Adams, J.A., Harper, K., & Knudson, S. (1992). A proposed system for the classification of anogenital findings in children with suspected sexual abuse. *Adolescent Pediatric Gynecology*, 5, 73-75.

American Academy of Pediatrics (1991). Committee on Child Abuse and Neglect: Guidelines for the evaluation of sexual abuse of children *American Academy of Pediatrics, 87*, 254-260

Berenson, A., Heger, A. & Andrews, S. (1991). Appearance of the hymen in newborns. *Pediatrics*, 458-465

Berenson, A., Heger, A., Hayes, J., et al. (1992). Appearance of the hymen in prepubertal girls. *Pediatrics, 89*, 387-394

DeJong, A.R., & Rose, M. (1991). Legal proof of child sexual abuse in the absence of physical evidence. *Pediatrics, 88*, 506-511.

Hammerschlag, M.R. (1988). Sexually transmitted diseases in sexually abused children. *Advances in Pediatric Infectious Diseases, 3*, 1-18

Hobbs, C.J., & Wynne, J.M. (1989). Sexual abuse of English boys and girls: The importance of anal examination. *Child Abuse Neglect, 13*, 195-210.

Kerns, D.L., Ritter, M.L., & Thomas, R.G. (1992). Concave hymenal variations in suspected child sexual abuse victims. *Pediatrics, 90*, 265-272.

McCann, J., & Voris, J. (1993) Perianal injuries resulting from sexual abuse: A longitudinal study. *Pediatrics, 91*, 390-397.

McCann, J., Voris, J., & Simon, M. (1992). Genital injuries resulting from sexual abuse: A longitudinal study. *Pediatrics, 89*, 307-317.

McCann, J., Voris, J., Simon, M., & Wells, R. (1989). Perianal findings in prepubertal children selected for non-abuse: A descriptive study. *Child Abuse and Neglect, 13*, 179-193.

McCann, J., Wells, R. Simon, M., & Voris, J. (1990). *Pediatrics, 86*, 428-439.

Muram, D. (1989). Child sexual abuse: Relationship between sexual acts and genital findings. *Child Abuse and Neglect, 13*, 211-216.

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