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ARTICLES continued

Examination Findings in Legally Confirmed Child Sexual Abuse: It's Normal to be Normal

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ABSTRACT. *Background.* Studies of alleged victims of child sexual abuse vary greatly in the reported frequency of physical findings based on differences in definition of abuse and of "findings." This study was designed to determine the frequency of abnormal findings in a population of children with legal confirmation of sexual abuse, using a standardized classification system for colposcopic photographic findings.

Methods. Case files and colposcopic photographs of 236 children with perpetrator conviction for sexual abuse, were reviewed. The photos were reviewed blindly by a team member other than the examiner, and specific anatomical findings were noted and classified as normal to abnormal on a scale of 1 to 5. Historical and behavioral information, as well as legal outcome was recorded, and all data entered into a dBase III program. Correlations were sought between abnormal findings and other variables.

Results. The mean age of the patients was 9.0 years (range 8 months to 17 years, 11 months), with 63% reporting penile-genital contact. Genital examination findings in girls were normal in 28%, nonspecific in 49%, suspicious in 9%, and abnormal in 14% of cases. Abnormal anal findings were found in only 1% of patients. Using discriminant analysis, the two factors which significantly correlated with the presence of abnormal genital findings in girls were the time since the last incident, and a history of blood being reported at the time of the molest.

Conclusions. Abnormal genital findings are not common in sexually abused girls, based on a standardized classification system. More emphasis should be placed on documenting the child's description of the molestation, and educating prosecutors that, for children alleging abuse: "It's normal to be normal." *Pediatrics* 1994;94:310-317; *child sexual abuse, genital findings.*

ABBREVIATION. CSAEP, Child Sexual Abuse Evaluation Program.

Children who give a history of having been sexually molested, and children in whom abuse is suspected for other reasons, are increasingly referred for medical evaluation. Questions regarding the frequency of abnormal findings in sexually abused chil-

dren have been difficult to answer with certainty for two reasons: changing definitions of what constitutes an "abnormality," and the lack of a true "gold standard" for proven abuse.

The publication of studies describing the appearance of the genitalia and peri-anal tissues in non-abused prepubertal children,¹⁻³ and of the hymen in newborns,⁴ have helped examiners to understand which variations should be considered normal, or at least nonspecific for abuse. Likewise, there appears to be a growing consensus among researchers in the field of medical examination of sexually abused children as to which findings can be considered conclusive or specific for abuse.⁵⁻⁷

Two studies reviewing cases in which the alleged perpetrator was convicted of molesting the child reported a frequency of abnormal findings of 45%⁸ and 23%⁹ among the children examined. Again, the definition of genital abnormalities differed, as did the type of examination conducted.

This study was designed in order to determine the frequency of abnormalities among children in whose case the perpetrator was convicted of abusing the child, using a standardized classification system for blindly rating colposcopic photographs for the presence of findings suggestive or conclusive of abuse. The classification scale, which was previously described in detail,¹⁰ was developed using published data on abused and nonabused children.

METHODS

At the Child Sexual Abuse Evaluation Program (CSAEP) at Valley Medical Center in Fresno, CA, notations have been made on cases in which the alleged perpetrator confessed, plead guilty, or was found guilty in court of sexual abuse. Of the 2732 children evaluated by members of CSAEP between July 1, 1986 and July 1, 1993, there were 262 cases in which information was obtained confirming that the perpetrator had been convicted.

The case files of patients seen before July 1, 1991 were reviewed by one of the authors (who had not been the original examiner), and only those cases with good quality colposcopic photographs were selected for the study. There were 18 cases with no photographs and eight with nonmagnified Polaroid photographs. After excluding these cases, 141 cases (130 girls, 11 boys) of children examined before July 1, 1991 were carefully reviewed. These photographs were all taken using a Cryomedics MM4000 or MM6000 colposcope with a 35-mm Olympus camera attached. The photographs were reviewed without referring to the case history, and the findings were recorded and classified using our previously reported classification scale.¹⁰ Measurements of the hymenal and anal orifice were taken from the photographs using a method described by McCann et al.¹¹ Anal and genital photographs were separately rated as being normal, nonspecific, suspicious, suggestive, or showing clear evidence of penetrating injury, as listed in

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Table 1. Normal findings are those which have been reported in nonabused children and newborns. Nonspecific findings may be due to abuse, especially if they are found shortly after an abusive episode, but may also have other causes. After the photographs were rated, the complete record was reviewed. An overall assessment of the likelihood of abuse was made, based on the quality and clarity of the child's statement, the reported emotional and behavioral changes in the child, and the presence of laboratory findings, if any. The overall scale is shown in Table 2. Specific details of the molestation were also recorded, if available.

TABLE 1. Proposed Classification of Anogenital Findings in Children*

Normal (Class 1)
Periurethral bands
Intravaginal ridges or columns
Increased erythema in the sulcus
Hymenal tags, mounds, or bumps
Elongated hymenal orifice in an obese child
Ample posterior hymenal rim (1–2 mm wide)
Estrogen changes (thickened, redundant hymen)
Diastasis ani/smooth area at 6 or 12 o'clock in perianal area
Anal tag/thickened fold in midline
Nonspecific findings (Class 2)†
Erythema of vestibule or perianal tissues
Increased vascularity of vestibule or hymen
Labial adhesions
Rolled hymenal edges in the knee-chest position
Narrow hymenal rim, but at least 1 mm wide
Vaginal discharge
Anal fissures
Flattened anal folds
Thickened anal folds
Anal gaping with stool present
Venous congestion of perianal tissues, delayed in exam
Fecal soiling
Suspicious for abuse (Class 3)§
Enlarged hymenal opening—greater than two SDs from nonabused study (McCann et al). ²
Immediate anal dilatation of at least 15 mm with stool not visible or palpable in rectal vault.
Immediate, extensive venous congestion of perianal tissues
Distorted, irregular anal folds
Posterior hymenal rim less than 1 mm in all views
Condyloma acuminata in a child
Acute abrasions or lacerations in the vestibule or on the labia (not involving the hymen), or perianal lacerations
Suggestive of Abuse/Penetration (Class 4)
Combination of two or more suspicious anal findings or two or more suspicious genital findings
Scar or fresh laceration of the posterior fourchette with sparing of the hymen
Scar in peri-anal area (must take history into consideration)
Clear Evidence of Penetrating Injury (Class 5)
Areas with an absence of hymenal tissue, (below the 3 o'clock to 9 o'clock line with patient supine) which is confirmed in the knee-chest position
Hymenal transections or lacerations
Perianal laceration extending beyond (deep to) the external anal sphincter
Laceration of posterior fourchette, extending to involve hymen
Scar of posterior fourchette associated with a loss of hymenal tissue between 5 and 7 o'clock

* Table has been modified slightly from that which was published in *Adolesc Pediatr Gynecol* (1992;5:73–75).

† Findings that may be caused by sexual abuse, but may also be caused by other medical conditions. History is vital in determining significance.

§ Findings that should prompt the examiner to question the child carefully about possible abuse. May or may not require a report to Protective Services in the absence of a history.

TABLE 2. Overall Assessment of the Likelihood of Sexual Abuse*

Class 1: No evidence of abuse
Normal exam, no history, no behavioral changes, no witnessed abuse
Nonspecific findings with another known etiology, and no history or behavioral changes
Child considered at risk for sexual abuse, but gives no history and has nonspecific behavior changes
Class 2: Possible abuse
Class 1, 2, or 3 findings in combination with significant behavioral changes, especially sexualized behaviors, but child unable to give history of abuse
Presence of condyloma or herpes I (genital) in the absence of a history of abuse, and with otherwise normal exam
Child has made a statement, but not detailed or consistent
Class 3 findings with no disclosure of abuse
Class 3: Probable abuse
Child gives a clear, consistent, detailed description of molestation, with or without other findings present
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
Culture-proven infection with <i>Chlamydia trachomatis</i> (child over 2 years of age) in a prepubertal child. Also culture proven herpes type 2 infection in a child, or documented Trichomonas infection
Class 4: Definite evidence of abuse or sexual contact
Finding of sperm or seminal fluid in or on a child's body
Witnessed episode of sexual molestation. This also applies to cases where pornographic photographs or videotapes are acquired as evidence
Nonaccidental, blunt penetrating injury to the vaginal or anal orifice
Positive, confirmed cultures for <i>Neisseria gonorrhoeae</i> in a prepubertal child, or serologic confirmation of acquired syphilis

* Table reprinted with permission of Springer-Verlag, New York. Published in *Adolesc Pediatr Gynecol* (1992;5:73–75).

For children seen between July 1, 1991 and July 1, 1993 (n = 770), data cards were completed by the CSAEP examiner within 1 week of the examination. Colposcopic photographs, which were taken on all patients, were reviewed weekly, and a team member other than the examiner "read" the photographs and recorded and coded the findings, without being told the history on the child. The classification scale was then used to give a rating for genital findings and anal findings. The history and laboratory findings were then reviewed, a rating was given for the overall likelihood of sexual abuse, and this information was recorded. There were 95 cases (85 girls and 10 boys) reviewed in this manner in which we were able to determine that the legal outcome was a guilty plea, court conviction, or confession.

Information regarding legal outcome was provided by the law enforcement agency or District Attorney's office prior to or following the child's examination. Written requests for follow-up on legal outcome, and telephone calls to the District Attorney's office were also made by clerical staff, and by the research assistant. Information was sought concerning the type of criminal count, and whether the sentence included probation, house arrest, jail time, or fines. We were unable to obtain details on counts and sentencing on many cases, due to difficulty in tracking cases decided prior to 1991.

Data from all reviewed cases were entered into a dBase III program, and a BMDP statistical package was used to analyze the data. Discriminant analysis was used to identify variables which could predict the presence of abnormal (Class 4 or 5) genital findings on examination. Chi square analysis was used to compare the proportion of cases with abnormal findings between different groups, and paired *t* tests were used to compare data between groups with different legal outcomes.

RESULTS

In the final sample of 236 children, the mean age was 9.0 years, with a range of 8 months to 17 years 11

months. The majority of children (63%) were 8 years of age or older. There were 215 girls (91%) and 21 boys (9%). The distribution of racial background of the victims was 49% white, 42% Hispanic, 6% African-American, 1% Asian, and 2% mixed ethnicity. In 98% of cases, the suspected perpetrator was an adult male known to the child, and in 26% of cases was the father.

The type of molestation described by the child was fondling in 36%, oral-genital contact in 31%, digital-vaginal penetration in 44% of girls, and penile-vaginal contact in 63% of girls. Most children described more than one type of contact. Penile-anal contact/penetration was described by 28% of the children. The child reported experiencing pain in 45% of cases, and blood was found or reported at the time of the assault in 43 of 130 cases (34%) in which this information was available. The mean number of episodes of molestation, which were known in 63 cases, was 5.2. These numbers were estimates given by the children, and could not be verified.

The majority of suspected perpetrators (72%) plead guilty immediately prior to the trial or hearing. The court found 34 (14%) guilty following a jury trial, and 32 (14%) of the suspects confessed to varying degrees of sexual abuse. The type of criminal count was known in 172 cases. For the remaining 64 cases, the only information recorded on the chart by our office was that the perpetrator had pled guilty or confessed. We were unable to obtain further details on these cases because of different numbering systems at the police and the district attorney's office. The most common criminal counts were as follows: oral copulation (38%); "lewd and lascivious acts," which involve touching, but not necessarily penetration (15%); child molest, which includes exhibitionism and does not require that the child was touched (10%); other acts, including incest and sodomy (15%); digital penetration (8%); and rape (6%). The criminal counts often did not correlate with the specific acts alleged by the child. Sentencing included jail time in 90%, with a mean sentence of 7 years, as well as probation (30%), and other outcomes, especially fines (12%). Sentences often included probation or fines in addition to jail time.

Utilizing our classification system, we found the cases to break down as follows: 1) No evidence of abuse (4%); 2) Possible abuse (5%); 3) Probable abuse (81%); and 4) Definite evidence (10%). In the proba-

TABLE 3. Frequency of Findings, by Type

Classification	Genital Findings in Girls (n = 213)*		Anal Findings in Boys and Girls (n = 213)†	
	n	%	n	%
Normal	59	28%	67	31%
Nonspecific	104	49%	132	62%
Suspicious	20	9%	12	6%
Suggestive	10	5%	0	0%
Clear evidence	20	9%	2	1%

* Genital photos on girls were unable to be classified in two cases, due to inability to clearly visualize the entire hymenal rim.

† Anal photos were not taken on 23 girls.

ble abuse category, 94% were based on a history of molest alone. Table 3 shows the frequency of normal and abnormal genital findings in girls, and of normal to abnormal anal findings in both girls and boys. None of the boys had abnormal genital findings.

Table 4 shows the frequency of the two or three most common specific findings in each class. Percentages were calculated using a total N = 213 for anal findings and N = 213 for genital findings in girls. There were 23 cases in which no anal photos were taken on girls, and two cases where the genital photographs did not show the hymenal rim clearly enough to make an assessment. These percentages do not necessarily correlate with the percentage of cases with overall genital or anal ratings in Table 3, because most patients had a combination of normal and nonspecific findings.

Figures 1 through 4 provide examples of genital findings using colposcopic photographs, with explanations of how each case was rated using the standard classification scale. For data analysis on genital findings in girls, the 213 cases with classifiable genital photos were studied.

In order to determine which variables predicted the presence of Class 4 or Class 5 (abnormal) genital findings in girls, discriminant analysis was performed using the following variables: age, child or caretaker's report of blood being observed with an episode of molest, time since last incident, description by the child of penile-genital contact or penetra-

TABLE 4. Frequency of Specific Findings

	n	% overall
A. Genital finding in girls (n = 213)		
Normal		
1. Normal appearance of hymen	107	50%
2. Ample posterior rim	104	48%
3. Estrogen changes	93	43%
Nonspecific		
1. Erythema	68	32%
2. Increased vascularity	53	25%
3. Labial adhesions	37	17%
Suspicious		
1. Narrowing of posterior hymenal rim to less than 1 mm (notch)	14	6%
2. Acute abrasions or lacerations in vestibule or labia (not involving hymen)	5	2%
Suggestive		
1. Combination of two or more suspicious genital findings	8	4%
Clear evidence		
1. Areas with an absence of hymenal tissue posteriorly, confirmed in knee-chest position	8	4%
2. Hymenal transection	11	5%
B. Anal finding in both (n = 213)		
Normal		
1. Normal anal folds	119	56%
Nonspecific		
1. Fecal soiling	47	22%
2. Thickened anal folds	38	18%
3. Venous congestion	40	19%
Suspicious		
1. Anal dilatation of at least 15 mm, no stool	10	5%
Clear evidence		
1. Anal laceration	2	1%



Fig 1. Colposcopic photograph taken at 10 × magnification, patient supine, using labial traction. A 4-year-old girl with sexualized behaviors stated that her 14-year-old brother “hurt my vagina.” Brother pled guilty to child molest. Photo shows normal annular hymen, no evidence of injury.



Fig 2. Colposcopic photograph taken at 10 × magnification, patient supine, using labial traction. A 9-year-old female stated that her 13-year-old cousin “poked his pee pee in my pee pee. It hurt a lot.” Cousin pled guilty. Photo shows narrow rim of hymen posteriorly, which measured less than 1 mm at the 7 o’clock position. This was rated as a suspicious finding.

tion, and Tanner genital stage. Of the 213 cases, there were only 90 with complete data on all five variables. The *F* value to enter was 4.0, to give a statistical significance of $P < .05$.

The only variables which significantly discriminated between cases with and without abnormal genital findings in girls were the time since the last episode of molest and the reported presence of blood at the time of the molest. Chi square analysis showed a significantly higher incidence of abnormal genital findings in girls examined within 72 hours of the last episode of molest (8/19, 42%) compared to that seen in girls examined 1 month or more after the last episode (7/88, 8%; $P = .003$). Of 43 cases in which blood was reported in girls, the genital examination was abnormal in 20 (46%), compared to being abnormal in 7 of 87 (8%) cases where no blood was reported. Using chi square, this difference was also highly significant at $P = .000$. Of the 20 cases with a history of bleeding, 12 had acute trauma, with nine rated Class 5 and three rated Class 4 for genital findings. Eight girls had evidence of prior injury (nonacute), which was healed; five were Class 5 findings, and three were Class 4.

Table 5 shows the probability of finding Class 4 or 5 genital findings in girls, according to time since assault and history of bleeding. Using chi square

analysis, the proportion of cases with abnormal genital findings in girls did not vary significantly according to age group, reports of pain, Tanner genital stage, or report of penile-vaginal contact/penetration.

The mean size of the horizontal diameter of the hymenal opening, using labial traction, was compared between 19 Tanner Stage I girls, age 8 years to 10 years, 11 months, who had described penile-vaginal contact/penetration (7.7 ± 2.6 mm), and published data on nonabused children of the same age (6.9 ± 2.2 mm²). There was no significant difference in these measurements. The girls alleging genital-genital contact had all stated: “He touched my private with his private,” or some variation. Only one girl (see Fig 3) had an abnormal (suggestive) examination, with increased orifice size (11 mm) and hymenal narrowing to less than 1 mm.

Because the cases of 129 of the girls were reviewed retrospectively, based on photographs, and 84 were reviewed prospectively, the mean rating of genital findings in girls were compared between the “old” ($N = 129$) and “new” ($N = 84$) groups using a pooled *t* test. The *P* value was .81, which is not significant. Similarly, the cases (girls only) with a legal outcome of guilty plea ($N = 151$), confession ($N = 29$), and



Fig 3. Colposcopic photograph taken at 10 × magnification, patient supine, using labial traction. A 10-year-old female gave a history that her grandfather “touched my front private with his private.” She described pain, but no blood. The grandfather pled guilty to child molest. Photo shows enlarged orifice for age, with horizontal opening of 11 millimeters using traction, which is greater than two standard deviations above the mean for age and method. Also, hymen measured less than 1 mm in width between 5 and 7 o’clock. Combination of two or more suspicious genital findings makes this suggestive of abuse/penetration.



Fig 4. Colposcopic photograph taken at 16 × magnification, patient supine, using labial separation. This 8-month-old female infant was examined within 12 hours of being found with a large amount of blood in the diaper. The photo was taken approximately 36 hours after the injury. A 21-year-old male babysitter pled guilty to one count of digital penetration. This photo shows a healing laceration of the posterior fourchette which angles from 6 to 5 o’clock, a complete hymenal transection at 6 o’clock, and yellowish granulation tissue in the fossa, partially covering the hymenal transection. These findings are clear evidence of a penetrating injury, Class 5.

court conviction (N = 33) were compared on the following variables: age, history of penile penetration, report of blood, report of pain, time since last incident, and classification of genital findings. Analysis of variance revealed no significant differences between the groups on any of these variables. In a separate analysis of 29 confession cases in girls, details of specific acts confessed to were available in 11 cases. Of six cases in which the perpetrator confessed to digital-vaginal penetration, none had an abnormal examination, while abnormal (Class 4 or 5) findings were seen in four of five cases in which the perpetrator confessed to penile-vaginal penetration.

In order to determine whether cases with legal confirmation differed from cases without such confirmation, the 213 cases (girls) in this study were compared, using paired *t* tests or chi square analysis, with 157 cases of girls referred to our program in which it was confirmed that no criminal charges were filed. The mean age of the child in the legally confirmed cases was significantly higher than in the “no charges filed” (NCF) group (9.0 vs 7.3 years, *P* = .000). Descriptions of penile-vaginal contact and pain

TABLE 5. Probability of Abnormal* Genital Findings in Girls

Time Since Incident‡	n	Blood Found or Reported§	
		Yes	No
Less than 72 hours	19	.90	.72
4 to 14 days	28	.79	.52
15 days to 5 months	59	.61	.32
More than 6 months	29	.40	.16

* Class 4 or 5 genital findings.

‡ Time known in 135 cases.

§ History available in 130 cases.

were more frequent; however, there was no significant difference in reports of bleeding. The mean rating of genital findings was significantly higher in the confirmed cases (2.2 vs 1.8, *P* = .001), using the paired *t* test. Using chi square analysis, the frequency of abnormal genital findings was significantly higher in the confirmed, compared to the NCF group (14% vs 2%, *P* < .005).

DISCUSSION

The patients in this study were chosen because the legal outcome in each case involved conviction of the alleged perpetrator. This selection method may have inadvertently included children who were not actually molested, therefore, the frequency of abnormal findings may be falsely low. Legal confirmation of sexual abuse was used as a selection criteria in order to obtain the largest undiluted population of referred children who were probably molested. The number of cases in which the perpetrator confessed to specific acts¹¹ was too small to conduct meaningful statistical analysis.

Since the charges in 170 of the 236 cases were the result of plea bargain agreements, there was no correlation between the acts described by the child (penile-vaginal penetration in 63%) and the specific counts to which the perpetrator plead guilty (rape in 6%). The perpetrator pled guilty to lesser charges, even though vaginal or anal penetration may have occurred. Also, since the examiner testified in court in 34 of the cases in which the perpetrator was convicted following a jury trial, it is possible that testimony concerning medical findings contributed to the conviction. However, the proportion of cases with abnormal genital findings did not differ between those involving confession, court conviction, and guilty pleas.

Child victims in the legally confirmed cases were significantly older, reported penetration and pain more frequently, and had more abnormal examination findings than children in those cases in which no charges were filed. These observations reflect the fact that in the six Central Valley counties that refer patients to our program, decisions whether to proceed with criminal charges are often based on either physical evidence, the child's ability to describe the abuse in detail, or a combination of both factors. In addition, age is very often a factor in whether or not a child is perceived to be a "good witness."

Kerns and Ritter¹⁷ have reported that there was no difference in the likelihood of abnormal genital findings between a group of 83 girls in whose case the perpetrator confessed, and 563 girls with suspected abuse, but no confession. In their study, colposcopic photos were taken on all subjects, and reviewed in a standard manner. Their data also showed that 8 of 13 patients (61.5%) with perpetrator confessions of digital-vaginal penetration had normal examinations, compared to only 4 of 22 (18.2%) in which the perpetrator confessed to penile-vaginal penetration. In our study, the number of cases with specific details was small, however, a large percentage (4/5, 80%) of girls had abnormal findings when the perpetrator confessed to penile-vaginal penetration.

The classification of genital and anal findings using a standardized classification scale allowed for the independent review and rating of colposcopic photographs of each child, an objective process which has not been applied previously in this type of study. In Muram's study,⁸ genital findings were classified using a four-point scale, however, colposcopic photographs were not used.

The frequency of normal or nonspecific genital findings in our study is the same as that reported by DeJong and Rose,⁹ who reported that 77% of the 115 subjects whose charts they reviewed had no "physical evidence" of sexual abuse. In their study, colposcopic examinations were not performed, and photographs were not taken. Examinations took place at two or three different centers, and were conducted primarily by residents. The fact that we found the same proportion of normal cases using colposcopy and photographic review suggests that the detection of significant injuries may not necessarily require the use of the colposcope. We utilized measurements of the hymenal rim from the photographs to determine whether areas of apparent narrowing were less than 1 mm wide, and whether apparent enlarged hymenal openings were larger than two standard deviations beyond reported means for age and position. Using this method, many questionable abnormalities on examination were rated as nonspecific, rather than suggestive or clearly abnormal.

Our assessment of genital findings was based solely on review of the colposcopic photographs, and not on reports of what was noted by the examiner during the genital examination. This method may have led to an under-reporting of abnormalities, especially in pubertal females. Changes during a dynamic examination may not be reflected in static photographs. We used photographic findings in an attempt to use more objective criteria for reviewing the cases.

In rating the photographs without knowing the history, it might be possible to underestimate the significance of nonspecific findings such as erythema, superficial abrasions, and venous congestion found immediately after an episode of molest. An overall assessment is always given, however, and if the child's history is clear, the overall rating would still be "probable abuse." In the summary of the evaluation sent to the referring child protection agency, the examiner would comment that, for example: "The marked erythema of the vulva noted two hours after the alleged episode of molest is consistent with the child's history, and most likely reflects residual to such contact." Likewise, if a child describes only fondling and oral copulation, the examination would be expected to be normal, and that information is also given to the referring agency. Many kinds of touching leave no signs.

Muram⁸ found a higher frequency of abnormal genital finding (45%) in the 31 cases he reviewed. In his study, the suspects confessed to sexually molesting the victims, and 18 of 31 cases, confessed to vaginal penetration. Information as to whether blood was reported, and the time since the last episode of abuse, was not provided in any of the three studies.

In our study, a history of penile-vaginal contact or penetration was not found to correlate with the presence of abnormal genital findings. This contrasts with the data presented by other authors^{8,12} and even with data from an earlier study by one of us (J.A.A.).¹³ One reason for this difference may be that we grouped together cases where the child described penile-genital contact and penile-vaginal penetra-

tion. Our rationale for this was that young children have no concept of what is meant by the term: "in the vagina." A statement such as "He put his thing in my private," may or may not mean that full penetration of the vagina occurred. Also, because estrogen changes in the hymen were seen in 42% of the girls in this study, the increased elasticity and distensibility of the hymen may have accounted for the lack of correlation between a history of penetration and the presence of abnormal findings.

The only two significant predictors of abnormal genital findings in this study were the time since the last episode and the history that blood was reported or observed at the time of the molest. This finding may have been influenced by the characteristics of the patients referred to our center. Only 10% of the patients in this study were examined within 3 days of the last episode of molest. It is known that acute injuries to the anogenital tissues heal rapidly, and may be difficult to detect after weeks or months.¹⁸⁻²⁰ The association of abnormal findings with a history of blood being reported or observed is not unexpected, even though it has not previously been reported.

The frequency of abnormal anal findings in our study was 1%. It is difficult to compare these results to other research, because the definition of abnormal findings differs from one study to another and has changed over time. Hobbs and Wynne¹⁶ reported abnormal examination findings in 25% of girls and 83% of boys in their population of patients with suspected abuse, however, findings such as erythema, venous congestion, hyperpigmentation, and intermittent anal dilatation, which were considered abnormal, have subsequently been documented in nonabused children.¹ In addition, most studies do not list individual findings and their frequency, so that a comparison of the frequency of selected findings between studies is impossible.

One limitation of the current study is the lack of certainty regarding the exact type of abuse suffered by the child victims, since most charges were the result of plea bargain agreements. As in the entire area of child sexual abuse evaluation, we must rely upon the child's description of the molestation as the best method of characterizing the abuse.

In this study, 63% of the girls described penile-vaginal penetration as having occurred. There is no way to know whether the penetration was only through the labia, or partially into the vagina, without the events being videotaped or observed by a third party. Using the child's report alone, the only conclusion justified by this data is that the child's description of penetration was not significantly correlated with the presence of abnormal findings, in cases where the perpetrator was convicted. In most states, the legal definition of penetration is: "penetration of the female external genitalia or anus, however slight," so that it should not be necessary to prove that penetration beyond the hymen occurred before a child's description of the act is believed. In order to determine the frequency of abnormal genital findings in cases where there is some type of verification that full penile-vaginal penetration occurred,

it will be necessary to review colposcopic photographs from cases where the perpetrator has confessed to penile-vaginal penetration. Because the number of cases is relatively small at each institution, a collaborative study is needed to collect sufficient data.

It could be argued that the review of the colposcopic photographs was not completely blinded, as it was known that all children photographed were referred for suspected abuse. However, at the time of the photo review, the findings were documented and classified using our scale before any historical information was reviewed. A truly blinded review would require that photographs of nonabused children as well as photos from legally confirmed cases of abuse be reviewed and rated by an outside consultant.

It should also be noted that the classification scale used in this study is currently undergoing revisions as more data are reported on nonabused children and known victims of penetrating genital injuries. This classification system was developed in order to maintain some internal consistency in the review process used at our center, and does not represent a consensus of medical experts regarding the classification of findings with respect to abuse. Although efforts are underway by committees of the American Professional Society on the Abuse of Children to reach a consensus on classification of findings, this will be a lengthy process.

CONCLUSIONS

This study provides additional data that the majority of children with legally confirmed sexual abuse will have normal or nonspecific genital findings. Abnormal anal findings are very rarely found. The best predictors of abnormal genital findings in female victims are the time since the assault and a history that blood was reported or observed at the time of the molest. A history of vaginal penetration given by the child did not significantly correlate with abnormal genital findings.

The use of a clearly defined method of classifying the significance of anal or genital findings, and determining the overall likelihood of abuse, allowed for the objective review of a large number of cases. It is hoped that this classification scale, or its revised version, may enable researchers and clinicians at other centers to collaborate effectively in future research endeavors.

This study also reaffirms that the history of the molest provided by the child is probably the most important evidence of sexual abuse. While widely accepted in the medical field, this fact is still not universally accepted in the legal arena. There are many reasons why a child's examination may be normal, as reviewed by Bays and Chadwick⁶, and these reasons need to be reiterated to professionals involved in the assessment of children who have been molested, as well as those who are responsible for decisions regarding legal proceedings.

A comprehensive discussion of the importance of interviewing children in a sensitive manner, as well as a presentation of interviewing techniques, appears in a recent textbook on child abuse evaluation.²¹ This

book is an excellent resource for all health professionals working with children who may have been abused. When the child makes a statement that is clear, consistent, and detailed, the physical examination should not be relied upon to provide the "proof" before proceeding with criminal charges. Health professionals who examine children must be as diligent in obtaining and recording the details of the child's statement as we are in recording the appearance of the hymen, and not be pressured to make a "diagnosis" of sexual abuse based on medical findings alone.

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YOUR DOCTOR IS NOT IN, BY JANE M. ORIENT

Jane M. Orient. *Your Doctor Is Not In*. Crown: 288 pages, \$23.

The government has signed a contract to pay \$850,000 for development of "practice guidelines" and "protocols" to tell doctors how to treat an ear infection, a \$20 problem. If the Clinton administration has its way, there will be protocols for the treatment of virtually every ailment. Yet there is no evidence that protocols save money or improve quality. Nurses, for instance, outperform protocols in deciding how to treat abdominal pain.

So why aren't doctors raising a cry of alarm? Many have been browbeaten into submission, or have discovered that it's easier to play the game than to buck the system. But also, a different type of person is entering medical practice these days. Although the evidence is largely anecdotal, Dr. Orient says that the best students are avoiding medical schools and the schools are lowering their standards. (In 1990, 16% of medical graduates flunked the national boards, compared with 9% in 1984.)

Goodman J. *New York Times*. June 10, 1994. Dr. Goodman is president of the National Center for Policy Analysis and co-author (with Gerald L. Musgrave) of "Patient Power" (Cato Institute, 1992).

Noted by J.F.L., MD

Examination Findings in Legally Confirmed Child Sexual Abuse: It's Normal to be Normal

Joyce A. Adams, Katherine Harper, Sandra Knudson and Juliette Revilla
Pediatrics 1994;94:310-317

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