

Children With Anogenital Symptoms and Signs Referred for Sexual Abuse Evaluations

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Objective: To determine whether children referred to a sexual abuse clinic because of anogenital symptoms or signs have examination findings that are suggestive of or probable or definitive for sexual abuse.

Design: Case series of 157 patients.

Setting: Child and adolescent ambulatory care sexual abuse clinic.

Results: A medical records review of 3660 cases was done; 157 cases were identified for study. Most (75%) referrals were from medical clinics. Of 184 complaints, the most common presenting symptom or sign was anogenital bleeding or bruising (29.3%), followed by irritation or redness (21.7%), abnormal anogenital anatomy (20.7%), vaginal discharge (18.4%), lesions (6.5%), and "other" symptoms or signs (3.3%). We used a standardized classification system and determined that 25 patients (15%) had examination findings in the sexual abuse clinic that were suggestive of or probable or definitive

for sexual abuse. Although 85 patients had examination findings that corroborated the presenting symptom(s), 70 had nonspecific examination findings or a diagnosis other than sexual abuse. Seventy-two patients had normal examination findings. Only patients with the presenting symptom of lesions had an increased likelihood of a sexual abuse diagnosis. Common examination findings included anogenital erythema, enhanced vascularity of the hymen or vestibule in prepubertal girls, labial adhesions, and culture-negative vaginitis.

Conclusions: Few children are referred for sexual abuse evaluations based on physical signs or symptoms alone. Children with anogenital symptoms but without a disclosure or suspicion of sexual abuse are unlikely to have examination findings suggestive of abuse. The evaluation of children with anogenital symptoms and signs should include a consideration of alternative conditions and causes not directly related to sexual abuse.

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Editor's Note: One of the most physically and emotionally difficult diagnoses to make is that of sexual abuse in a child. Just imagine what it must be like for the child.

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CHILD SEXUAL abuse is a common pediatric problem affecting approximately 12% of girls younger than 14 years.¹ Medical evaluations are commonly requested in children who are suspected victims of sexual abuse. Detecting sexual abuse is challenging because many children do not disclose their abuse,² and physical findings tend to be absent or nonspecific.^{3,4} The accurate detection of findings associated with sexual abuse also depends on a familiarity with variations in anogenital anatomy that have been described in children who have not been abused.⁵⁻⁷

Sexual abuse of children is sometimes detected in clinical settings. The children may present with anogenital symptoms or signs, including bleeding, pain, inflammation, and vaginal discharge.⁸ Al-

ternatively, they may be asymptomatic, and a clinician may uncover suspicious findings during the anogenital examination. Clinicians are challenged to differentiate symptoms or findings attributable to sexual abuse from physiologic, skin, or other conditions. This determination is critical in addressing the safety needs of a child and providing appropriate treatment. Although the detection of sexual abuse is of unquestionable importance, a mistaken diagnosis can be traumatizing to the child, family, and persons who are suspected of abuse.

The purpose of this study is to determine whether children who have not disclosed abuse but who are referred for sexual abuse evaluations because of anogenital symptoms or signs have examination findings that are suggestive of or probable or definitive for sexual abuse. The probability of sexual abuse was assessed using a standardized classification system.⁹

RESULTS

A total of 3660 medical records were reviewed; 157 patients met the criteria for in-

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PATIENTS AND METHODS

A medical records review was performed of cases evaluated in an ambulatory care sexual abuse clinic from February 3, 1989, through May 20, 1996. The criteria for inclusion in the study included: (1) children and adolescents aged from birth to 17 years who are referred because of a concern about sexual abuse based on physical symptoms or signs; (2) there is no disclosure of sexual abuse at, or before, the time of referral; and (3) there is no report of behavioral changes suggestive of or indicating sexual abuse. Examples of such behaviors were nightmares, masturbation, and sexualized behavior with other children, adults, or toys. Children who presented with condylomata acuminata were also excluded because of difficulties in determining the sexual transmission of this disease, especially in young children.

The following information was assessed: patient's sex, age at the time of the evaluation, referral source, time from referral to evaluation, primary symptom(s) that led to the referral, examination results, colposcopic photographs, culture results, and year the evaluation was done.

Medical records and colposcopic photographs of each study patient were reviewed by the authors. Each author reviewed the photographs independently and reached the same conclusions regarding each case. Examination findings were then classified according to the system devised by Adams et al.⁹ Four classes of findings were used: no evidence of abuse (class 1), possible sexual abuse (class 2), probable sexual abuse (class 3), and definitive evidence of sexual abuse (class 4). Although this classification system is based on numerous research articles, it has not been extensively tested or universally accepted. Examination findings in the sexual abuse clinic were compared with the presenting symptom for consistency and possibility of resolution during the referral-to-examination interval. When findings were consistent with the presenting symptom, examination results were suggestive of abuse, nonspecific for abuse, or consistent with a diagnosis other than sexual abuse. When examination findings did not reflect the presenting symptom or sign, we assessed the likelihood of whether the presenting symptom or sign could have resolved during the interval between the presenting symptom and examination at the sexual abuse clinic. Symptoms or signs of irritation, redness, bleeding, bruising, vaginal discharge, and lesions were deemed more likely to resolve than those of "abnormal examination findings," which included scarring and "enlarged opening."

Statistical methods included 1-way analysis of variance, χ^2 analysis, and odds ratio using the Fisher exact test. *P* values of less than .05 were considered significant.

clusion in the study. Of these, 151 (96.2%) were girls and 6 (3.8%) were boys. The average age was 4.6 years (range, 2 months to 16.8 years). Referrals were predominantly (118 [75%]) from medical clinics, of which 30 were from pediatric resident physicians and their supervising pediatric

faculty member. Child Protective Services provided 15% of the referrals, day care providers referred 1% of the patients, and other sources (attorneys, self, law-enforcement agencies) constituted the remaining referrals. This referral pattern differed from the overall referral pattern to this clinic: medical clinics, 27%; Child Protective Services, 42%; and other, 32%. In addition, the study group was younger and more likely to be female than other children referred to the sexual abuse clinic. In this study, Child Protective Services referrals were based on reports of symptoms from other sources, some of which were likely to be medical professionals.

Ninety-nine patients (63.1%) were reported as possible victims of child abuse to Child Protective Services, law enforcement, or both, before being examined in the sexual abuse clinic. For 12 patients (7.6%), reports were not made before they were evaluated in the sexual abuse clinic. For the remaining 46 patients (29.3%), it could not be determined by medical records review whether the referral source had reported suspected abuse to the authorities. Of the 25 patients with findings of sexual abuse on examination, 17 were reported as possible victims of abuse before the examination, 1 was not reported before the examination, and for 7 patients it was undetermined whether a report was made previously. Examiners at the sexual abuse clinic reported these last-described 8 cases to Child Protective Services.

The time from referral to examination was recorded for 69 patients. Although the average interval from referral to examination was 9.7 days, more than half were seen within 3 days (range, 1-70 days). Patients with symptoms of bleeding were generally seen within 1 day. All children who were verbal and able to respond appropriately were questioned by examiners in the sexual abuse clinic about the possibility of sexual abuse. The 157 cases in this study were evenly dispersed among the 7 years of medical records review, ranging from 19 cases in 1990 and 1993 to 26 cases in 1994.

There were 6 categories of presenting symptoms or signs that led to a concern of sexual abuse and resulted in referral to our sexual abuse clinic: anogenital bleeding or bruising, anogenital irritation or redness, abnormal anatomical findings, vaginal discharge, anogenital lesions, and other. There were 184 presenting symptoms or signs in 157 patients. The frequencies of these presenting symptoms or signs are as follows: bleeding or bruising, 54 complaints (29.3%); irritation or redness, 40 complaints (21.7%); abnormal examination findings, 38 complaints (20.7%); vaginal discharge, 34 complaints (18.4%); lesions, 12 complaints (6.5%); and other, 6 complaints (3.3%). The "abnormal examination findings" category included presenting symptoms or signs of enlarged vaginal (or hyemal) opening, scarring, and anal dilatation. Those presenting with lesions had discrete blisters, growths, bumps, ulcers, or other similarly described anogenital lesions. The "other" category included 3 patients with urinary tract infections, 1 with recurrent urinary tract infections, and 2 with recurrent dysuria.

From the classification system developed by Adams et al.,⁹ 132 (84%) examinations had no findings suggestive, probable, or indicative of sexual abuse. In the remaining patients, 19 (12%) had findings consistent with

Table 1. Seventy Examination Findings That Correlate With Presenting Symptom or Sign but Are Nonspecific for Abuse or Consistent With a Separate Diagnosis

Examination Findings	Patients, No. (%)*
Vulvovaginitis or proctitis, culture negative	15 (21)
Mild erythema or friable tissue, not cultured	13 (19)
Vulvovaginitis or proctitis, culture positive	10 (14)
Labial agglutination	7 (10)
Accidental (witnessed) injury to vulvovaginal area	4 (6)
Anal skin tag	3 (4)
Anatomical variations (perihymenal bands, septate hymen)	3 (4)
Failure of midline fusion of perineal raphe	3 (4)
Lichen sclerosus	3 (4)
Anal dilatation associated with encopresis or neurologic deficit	2 (3)
Urethral prolapse	2 (3)
Urinary tract infection	2 (3)
Other (varicosities, molluscum contagiosum, ingrown hair)	3 (4)

*Percentages add up to less than 100% due to rounding.

Table 2. Twenty-one Examination Findings That Correlate With Presenting Symptom and Sign and Are Suspicious for Abuse

Examination Findings	Patients, No. (%)*
Hymenal notch or area of hymen attenuated to ≤ 1 mm	13 (62)
Genital type 1 herpes simplex virus and hymenal notch or attenuation to ≤ 1 mm	3 (14)
Genital type 2 herpes simplex virus and hymenal notch or attenuation to ≤ 1 mm	2 (10)
Focal hymenal hemorrhages	2 (10)
Vaginal gonorrhea and hymenal notch or attenuation to ≤ 1 mm	1 (5)

*Percentages add up to more than 100% due to rounding.

“probable” abuse, 4 (3%) had findings “definitive” for abuse, and 2 (1%) had findings consistent with “possible” abuse. The mean age of patients in this category was 4.3 years, which was significantly younger than the mean age (5.9 years) of the patients with possible, probable, or definite evidence of abuse ($P = .01$).

The consistency or correlation of the examination findings was compared with the presenting or referring symptom or sign. Eighty-five patients (54%) had examination findings reflecting the presenting symptom or sign; in this group, 70 (82.4%) of 85 patients had nonspecific findings or a diagnosis other than sexual abuse. **Table 1** summarizes findings in this subgroup. In 21 patients, there were findings consistent with the presenting symptom or sign and abuse (**Table 2**). Of 157 patients, 72 (45.9%) had normal examination findings. Of patients without findings, 50 (69.4%) had presenting symptoms or signs that could have resolved before the examination in the sexual abuse clinic. These symptoms and signs were either acute or transient: irritation or genital redness, bleeding or bruising, lesions, and vaginal discharge. Twenty-six patients were referred for “abnormal examination findings” that included “enlarged,” “stretched,” and “too big” vaginal or anal opening or “scarring.” In all 26 pa-

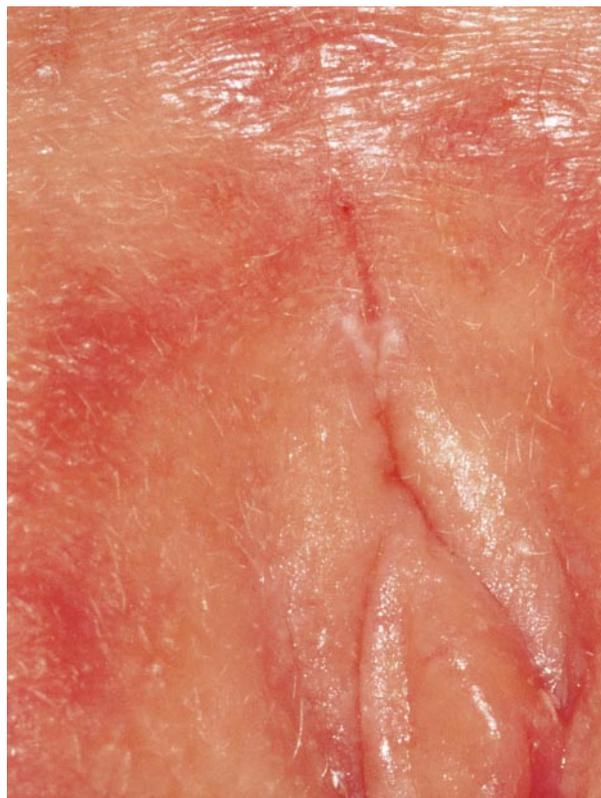


Figure 1. This girl, aged 2 years 2 months, was referred by a day care provider because of vaginal bleeding. Erythematous patches on the vulva were consistent with candidiasis. A small superficial laceration extends anteriorly from the anterior junction of the labia majora. The remainder of the examination findings were normal. This case was reported to authorities for investigation.

tients, the results of examinations in the sexual abuse clinic were normal. This group represents a discrepancy of opinion between the referral source and the examiners from the sexual abuse clinic. Of the 26 referrals in this group, 23 were from physicians, 1 was from an attorney, and 2 were from Child Protective Services.

The most common presenting symptom or sign that led to a concern about sexual abuse and referral was anogenital bleeding or bruising (54 complaints [29.3%]). Ten in this group had additional presenting symptoms or signs, including “abnormal examination findings,” vaginal discharge, and irritation or redness. The mean (SD) age of patients presenting with bleeding or bruising was 4.7 (2.8) years. Of 54 patients, 42 (78%) had no evidence of abuse. Thirty-two patients (59%) had evidence of bleeding or bruising on examination, and 8 (15%) patients had findings suggestive of abuse. Examples of bleeding or bruising that were nonspecific or consistent with a separate diagnosis include macerated tissue involving the vulva, vestibule, or anus due to group A streptococcal infection or candidiasis (**Figure 1**), failure of midline fusion of the perineal raphe (**Figure 2**), lichen sclerosus, accidental trauma (**Figure 3**), anal fissure, vulvar varicosities, and hemangioma (**Figure 4**). Twenty-two patients (41%) had normal examination findings that may represent resolution of the presenting symptom during the interval between referral and examination in the sexual abuse clinic.

Of the 40 patients presenting with irritation or redness, 13 (32%) had additional symptoms or signs of bleed-



Figure 2. This 10-month-old girl was referred by a private practice physician because of "vaginal tear." A midline perineal defect is seen. This case was reported to authorities by the referring physician for investigation.

ing or bruising, abnormal examination findings, lesions, or vaginal discharge. The mean (SD) age of patients presenting with irritation or redness was 3.8 (2.1) years. Thirty-eight (95%) of 40 patients had no evidence of abuse. Although 19 patients (48%) had findings of irritation or redness, only 1 (5%) of the 19 had evidence of abuse. Examples of nonspecific findings in this group include vulvar or perianal erythema in diapered children, prominent vascularity within the vestibule, and lichen sclerosus. Twenty-one patients (53%) in this group had normal examination findings, indicating possible resolution of the irritation or redness before the evaluation in the sexual abuse clinic.

Abnormal genital or anal anatomy accounted for 38 (20.6%) of the presenting signs. The mean (SD) age of patients presenting with abnormal examination findings was 3.7 (2.6) years. All 38 patients had no evidence of abuse. Twelve (32%) of the 38 patients had findings consistent with the referring symptom or sign but that were normal variations in anatomy: anal tags, septate hymen, septal remnants, failure of midline fusion of perineal raphe, and anal dilatation associated with encopresis. The remaining 26 patients in this group were referred for "stretched," "too big," "wide," "too open," "very abnormal," "asymmetric," or "enlarged" (**Figure 5** and **Figure 6**) vaginal opening, "piece of skin" (anal tag), or scarring. Three referrals documented measurements of the hymenal (6 cm and 6 × 7 mm) or anal (6 cm) openings. Given the less transient nature of these symptoms, it is likely that this group represents a discrepancy in pro-

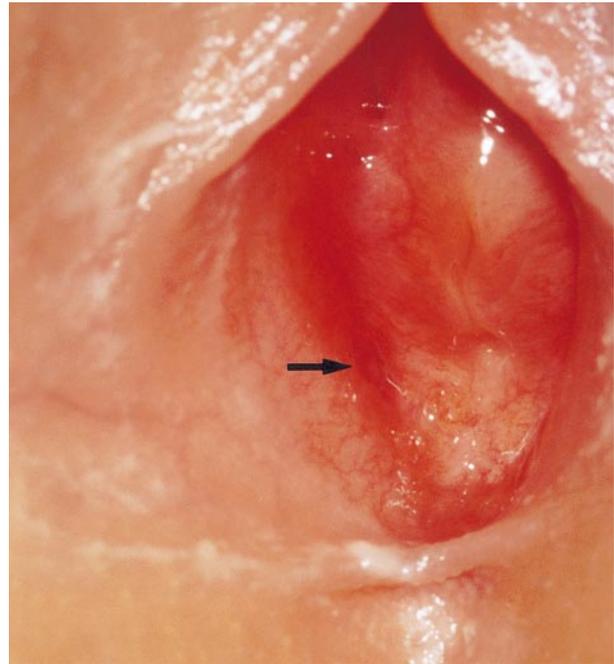


Figure 3. This girl, aged 5 years 4 months, was referred by a private practice physician because of vaginal bleeding. When questioned further, the child was observed falling on the sharp edge of a metal container, impaling the perihymenal tissue. A small laceration is seen in the vestibule adjacent to the hymen at the 8-o'clock position (arrow). The pattern of this injury is consistent with sharp penetrating trauma rather than blunt penetrating trauma as seen in sexual abuse injuries. This case was reported to authorities by the referring physician for investigation.

fessional opinions between the referring physician and the sexual abuse clinic physician, rather than a resolution of the presenting symptom.

Patients presenting with vaginal discharge constituted 18% of the total. Of the 34 patients with vaginal discharge, 27 (79%) had no evidence of abuse, and 25 (74%) had a vaginal discharge on examination. Patients presenting with vaginal discharge were significantly older (6.2 years) than patients presenting with abnormal examination findings (3.8 years) ($P = .03$) or irritation or redness (3.8 years) ($P = .04$). In 23 patients with a vaginal discharge on examination, specimens for culture were initially collected in the sexual abuse clinic and not by the referral source. Of these 18 patients with a vaginal discharge, 12 had cultures negative and 6 had cultures positive for *Haemophilus influenzae* (2 patients), *Shigella* species (1 patient), group B streptococci (1 patient), or usual genital flora (2 patients). "Usual genital flora" consisted of 1 or more of the following organisms: *Lactobacillus* species, α -streptococci, γ -streptococci, coagulase-negative staphylococci, diphtheroids, and *Neisseria* species (other than gonorrhoea). The 7 patients with vaginal discharge and findings consistent with abuse either had cultures positive for *Neisseria gonorrhoeae* (3 patients), type 2 herpes simplex, and *Chlamydia* species (1 patient) or had culture-negative, "no hymen" vaginitis (3 patients) (Susan Pokorny, MD, oral communication, March 22, 1991). Two of these patients were referred to the sexual abuse clinic because of culture-proven *N gonorrhoeae* vaginitis; in the remaining 5 patients, the diagnosis was made when they were evaluated

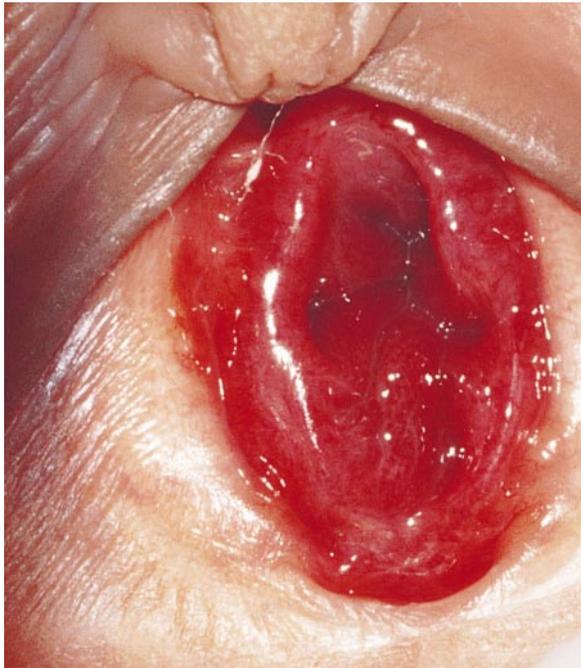


Figure 4. Differential diagnoses. This girl, aged 4 years 7 months, was examined by a staff physician and referred because of "vaginal bleeding." The entire hymen is hemangiomas. This child had hemihypertrophy and was subsequently evaluated by a geneticist. She was given a tentative diagnosis of Klippel-Trenaunay-Weber syndrome. This child was not referred for investigation.



Figure 6. The same patient as in Figure 5. With the patient in the prone knee-chest position, a smooth translucent rim of hymen is evident.

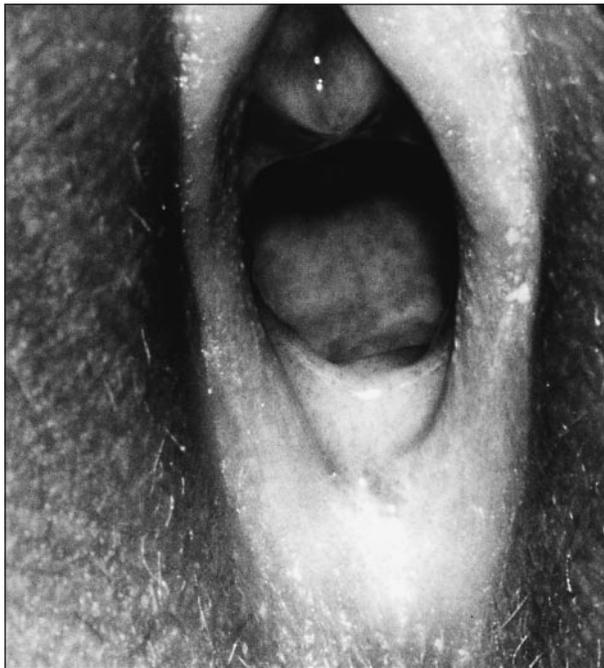


Figure 5. Normal examination findings. This girl, aged 6 years 11 months, was referred by a private practice physician because of a presenting sign of "enlarged opening." With the patient in the supine position, the hymen and vaginal tissue are evident.

in the sexual abuse clinic. Nine of 34 patients presenting with vaginal discharge did not have discharge at the time of the evaluation in the sexual abuse clinic.

Lesions accounted for 7% of the presenting symptoms or signs. The mean (SD) age of patients presenting

with lesions was 6.5 (4.7) years. In contrast to the patients with other presenting symptoms, 7 (58%) of 12 patients with lesions had examination findings suggestive of or probable for abuse. Two patients had culture-proven genital type 2 herpes simplex (**Figure 7**), and 3 patients had type 1 herpes simplex³; all 5 patients had substantial (≤ 1 mm) narrowing of the hymen. A 31-month-old child presented with normal examination findings, serologic tests positive for type 1 herpes simplex, and a history of genital lesions from which specimens for culture were not taken. Another child, aged 24 months, had normal findings on examination, a perineal culture positive for type 1 herpes simplex, and no history of oral lesions in close family members. Eight of 12 patients being seen because of lesions actually had lesions during their evaluation in the sexual abuse clinic. Three had lesions that were consistent with a diagnosis other than sexual abuse: an ingrown hair in the vestibule, lichen sclerosus, and impetiginous lesions that were culture-positive for *Staphylococcus aureus*. In 4 patients, the lesions presumably resolved before examination in the sexual abuse clinic.

In the "other" category, 3 patients had urinary tract infections diagnosed in the referral clinic, and 3 presented with dysuria. The mean (SD) age of patients in this group was 5.9 (3.6) years. The organisms cultured from the urine were *Streptococcus viridans* and group B streptococci. All 6 had normal examination findings, and 2 did not have dysuria when seen in the sexual abuse clinic.

Table 3¹⁰ summarizes the odds ratio for each of the presenting symptoms or signs. Those patients with presenting symptoms or signs of "abnormal examination findings" or irritation or redness were less likely than patients without such signs or symptoms to have examination findings consistent with sexual abuse. Patients with bleeding or bruising, vaginal discharge, or "other"

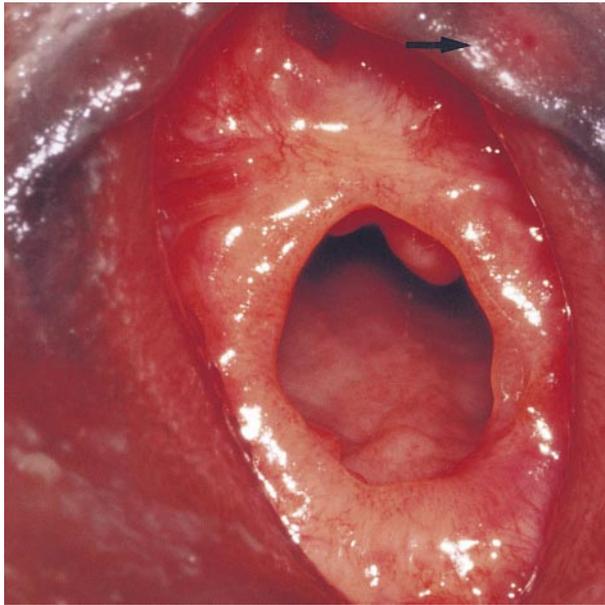


Figure 7. Evidence of sexual abuse. This 7-year-old girl was referred by a family practitioner because of "bumps on the private." She had a culture positive for type 2 herpes simplex virus and a vaginal culture positive for Chlamydia trachomatis. She refused to answer questions regarding abuse. The hymen shows mild thickening and irregularity. The arrow shows the herpetic lesion. This case was not originally reported to Child Protective Services by the family practitioner but was referred to them for investigation when the child was seen in the sexual abuse clinic.

signs or symptoms were as likely as patients without these complaints to have examination findings that are suggestive of or probable or definitive for sexual abuse. Only patients seen with lesions had an increased likelihood of a sexual abuse diagnosis compared with those who did not present with lesions.

There were 6 boys in the study ranging in age from 2.2 to 9.0 years (mean, 4.4 years). All had normal examination findings. Three had the presenting symptom of "abnormal examination finding," 2 had bleeding or bruising, and 1 had irritation or redness. Three had findings reflective of the presenting symptom that were normal variations. Presenting symptoms resolved or were absent in 2 patients when they were seen in the sexual abuse clinic. One patient referred with an abnormally large (6-cm) anal opening was found to have normal findings on examination, representing a discrepancy in opinion between the referring physician and sexual abuse clinic practitioners.

COMMENT

Most (84%) children referred for sexual abuse evaluations because of anogenital symptoms or signs did not have examination findings suggestive or indicative of abuse. This result contrasts with that of another study⁴ involving cases of legally confirmed child sexual abuse: 4% had no evidence of abuse, 5% were classified as "possible abuse," 81% were classified as "probable abuse," and 10% were classified as "definite abuse." This difference is attributable to the presence of a sexual abuse history in 94% of the patients in the "probable" category of the study by Adams et al,⁴ whereas none of the patients in this study provided a history of abuse at the time of the

Table 3. Odds Ratio of Presenting Symptoms or Signs and Likelihood of Examination Findings Consistent With Sexual Abuse

Symptom or Sign	OR (95% CI)*
Abnormal examination finding	0† (0-0.42)
Bleeding or bruising	1.98 (0.77-5.11)
Irritation or redness	0.22† (0.02-0.95)
Vaginal discharge	1.51 (0.51-4.36)
Lesion	9.88† (2.36-42.99)
Other	0† (0-4.56)

*OR indicates odds ratio; CI, confidence interval. $P < .05$.

†Fisher exact test.¹⁰

examination. Sexual abuse cannot be excluded in any of the children with normal or nonspecific examination findings. Many, if not most, examinations of sexually abused children elicit no abnormalities.⁸ Depending on the type of sexual contact, there may be no visible tissue damage. When tissue damage does occur, injuries may heal quickly and completely.¹¹ Clearly, a child's disclosure is key to the detection and diagnosis of sexual abuse.

The children in this study were predominantly young and female. Vulvovaginal symptoms and signs were far more common than perianal complaints. The average age of all female children evaluated in our clinic is 8.5 years; the children in this study were, on average, younger, although patients with evidence of sexual abuse were significantly older (5.9 years) than those with no evidence of abuse (4.3 years). It is more difficult to effectively interview preschool children for abuse. In the absence of reliable verbal information, physical signs and symptoms may be more important in the assessment of younger children for sexual abuse. In addition, a number of examination findings in this study are seen more commonly in younger children: labial agglutination, candidiasis, and irritation or erythema of the anogenital area. A predisposition to hygiene problems and irritation associated with diaper wearing are more common in younger children.¹² Physiologic changes associated with a reduction in the influence of maternal hormones occur around age 2 years and include increased vascular pattern, thinning, and decreased redundancy in the hymenal membrane.⁵ These changes cause the hymen to appear pinker, with the opening becoming more apparent. All of these conditions may be mistakenly attributed to sexual abuse trauma.

Because this study selected patients referred with physical symptoms or signs only, it was an expected result that most referrals would come from medical clinics. This is in contrast to the usual referral pattern to the sexual abuse clinic, in which most referrals come from Child Protective Services or law enforcement. In general, most children are referred to a sexual abuse clinic because they have made a disclosure of abuse. An important finding of this study is that only 4.2% (157/3660) of all patients referred to the sexual abuse clinic were referred on the basis of physical complaints alone.

Most referral sources reported their suspicions of abuse to authorities before evaluation in the sexual abuse clinic. Texas laws mandate reporting when a child "has been or may have been adversely affected by abuse."¹³

We are unable to determine whether Child Protective Services or law enforcement intervened in these cases before evaluation in the sexual abuse clinic. Child Protective Services in Texas has 30 days to make a determination of abuse; a significant majority (93%) of children were evaluated in the sexual abuse clinic within this time frame. We have encouraged Child Protective Services and law enforcement to promptly refer patients with physical signs and symptoms suggestive of sexual abuse, but no disclosure, for evaluation in the sexual abuse clinic.

THE MOST common presenting complaints were anogenital symptoms or signs that have been associated with sexual abuse and are unusual in young children: bleeding, abnormal anatomy, and vaginal discharge.^{8,14,15} In this study, none of these presenting symptoms were associated with an increased likelihood of a sexual abuse diagnosis. Overall, slightly more than half (54%) of the patients with these symptoms and signs had findings reflective of the presenting complaint. Presenting symptoms of bleeding and vaginal discharge may have resolved by the time patients were examined in the sexual abuse clinic. Alternatively, the presenting symptoms may have persisted, and the assessment in the sexual abuse clinic differed from that of the referral source. This possibility is pertinent to the presenting sign of “abnormal examination finding or anatomy.” Descriptive studies of normal anogenital anatomy have emerged only in the past 7 years,^{5,7,16} so widespread knowledge and familiarity may be lacking. There have also been dramatic changes in the interpretation of what is abnormal and attributable to sexual abuse trauma. In 1981, 1 study¹⁷ suggested that a transverse hymenal opening of 5 mm or more in a prepubertal child “correlates in 3 out of 4 incidents to positive sexual abuse history given by the child.” In 1990, a study⁵ of prepubertal children selected for nonabuse found that the transverse hymenal opening may range from 1 to 9 mm and vary with the examination position. Only 3 of the 38 patients presenting with abnormal anatomy had documented measurements of the hymenal or anal opening. One measurement of the hymenal opening (6 × 7 mm) was confirmed and assessed to be normal in the sexual abuse clinic. The other 2 measurements (6-cm hymenal opening in a girl and 6-cm anal opening in a boy) were reported by 1 physician and thought to be in error. The remaining referrals in this group reflected more subjective concerns that the hymen or anus was “gaping” or “stretched.” The classification system developed by Adams et al⁹ indicates that a hymenal opening “greater than 2 SD from nonabused study” and “immediate anal dilatation of at least 15 mm with stool not visible or palpable in rectal vault” are “suspicious” for abuse. Scars in the posterior fourchette or perianal area and hymenal transections are considered probable or definite evidence of abuse.⁹ Recent literature^{3,5,18} on which this classification system is based suggests that the quality and configuration of the hymenal and perianal tissues are more useful than actual measurements of openings in diagnosing sexual abuse.

In many patients presenting with anogenital bleeding, bruising, or irritation, examination findings were non-

specific or consistent with a diagnosis other than sexual abuse. Nonspecific findings included erythema of the vestibule or perianal tissues, increased vascularity of the hymen or vestibule, labial adhesions, and venous congestion of perianal tissues. Labial agglutination with or without dehiscence was attributed to sexual abuse in 7 girls. These children had otherwise normal examination findings. In 1 study⁵ of prepubertal girls selected for nonabuse, 39% had labial adhesions. McCann et al¹⁹ reported a case involving 6 sexually abused sisters, all of whom had labial adhesions. All but 1 of the girls either gave a history of molestation or had additional examination findings suggestive of abuse. A report of sexual abuse is not indicated in children with labial adhesions alone; labial adhesions that are thickened or irregular or that appear in children older than 7 years may require further investigation.¹⁸

Diagnoses that simulated injuries due to sexual abuse trauma and that resulted in referral to the sexual abuse clinic included lichen sclerosus, urethral prolapse, failure of midline fusion of the perineal raphe, and accidental trauma involving the genitalia. Lichen sclerosus has been described as “the most common skin condition mistaken for sexual abuse.”¹² Lichen sclerosus generally affects the vulva, perineum, and perianal tissues rather than the hymen or vestibule. Urethral prolapse may simulate an ecchymotic, edematous hymen, but the pattern is uniformly circumferential, unlike sexual abuse injuries that tend to involve discrete areas in the posterior aspect of the hymen.¹⁸ Because the failure of midline fusion of the perineal raphe has only recently been described²⁰ and is likely rare, we postulate that proportionately more of these cases are referred for sexual abuse evaluations when compared with other findings because clinicians are less familiar or experienced with this condition. This congenital abnormality appears traumatic but consists of normal mucosa without evidence of scarring.²⁰ Patterns of injury associated with accidental genital trauma also differ from those of injury in sexual assault; accidental injuries tend to involve external (vulvar) more than internal (hymen, vestibule) structures, are more often anterior (toward the mons pubis) than posterior, and more often unilateral than symmetrical in pattern.²¹

Children presenting with “vaginal discharge” had either no discharge (26%) a culture-negative discharge (44%), or a culture-positive discharge (29%). Many of the younger children were referred for “stains on the panties,” the significance of which is unknown and does not necessarily reflect the presence of infection or discharge. Older children were more likely to have vaginitis, although cultures were negative for important pathogens in more than half. These findings are similar to those of another study²² in which 40 of 54 pediatric patients presenting with vulvovaginitis had cultures that were negative for pathogens, and only 14 of the 26 patients with a vaginal discharge on examination had positive cultures for *Streptococcus pyogenes*, *Candida albicans*, lactobacilli, α -hemolytic streptococci, and diphtheroids. Streptococcal infections have been described as a nonsexually transmitted cause of vulvovaginitis^{15,23} and perianal disease²⁴ in prepubertal children. Other nonsexual causes of vulvovaginitis include infection with *Shigella* species, pinworm infestation, and bacterial vaginosis.²⁵ Cultures and

physical examination findings are useful in differentiating sexually transmitted pathogens from pathogens transmitted through nonsexual means, such as autoinoculation by nasopharyngeal secretions containing streptococci.²⁶ Jenny²⁷ lists 22 nonvenereal causes of vulvovaginitis in children. In this study, 4 of 10 patients had vaginal cultures positive for a sexually transmitted disease.

The presenting symptom of anogenital lesions was significantly associated with the diagnosis of sexual abuse ($P < .001$). Most children in this category who had examination findings of sexual abuse had anogenital cultures positive for type 1 or type 2 herpes simplex. Of the 9 children in this study infected with a sexually transmitted disease, 7 had abnormal examination findings suggestive of abuse. Of the 4 patients with type 1 herpes simplex, 3 had abnormal examination findings. Type 1 herpes simplex is considered to have a "possible" relationship to sexual abuse.²⁸ In another study,²⁹ 4 of 5 prepubertal children with genital type 1 herpes simplex were found to have been sexually abused; the 2 other patients with herpes simplex who were without evidence of sexual abuse had oral lesions immediately preceding the genital eruption of herpes simplex virus vesicles and were boys.²⁹ In this study, all subjects with type 1 herpes simplex genital lesions were girls and had no history or examination findings of oral lesions. The differentiation of type 1 from type 2 herpes simplex in a child with genital lesions may not be helpful in ruling out sexual transmission.

Six subjects presented with urinary tract symptoms or infection. Urinary symptoms are not specific for sexual abuse and are not commonly reported by sexual abuse victims. Of the sexual abuse victims who do report symptoms of dysuria or frequency, most have cultures that are negative for pathogens.³⁰

CONCLUSIONS

Few children with physical symptoms or signs alone who are referred to our sexual abuse clinic have examination findings of sexual abuse. In evaluating such children, clinicians should consider diagnoses other than sexual abuse and physiologic variations. Of the 6 categories of presenting complaints, only those with lesions had a greater likelihood of a sexual abuse diagnosis. Conditions more commonly seen in early childhood that were attributed to sexual abuse included labial agglutination, perianal or perivaginal erythema, and culture-negative vaginitis. Nine (36%) of the 25 patients who had suggestive findings of sexual abuse had cultures positive for sexually transmitted diseases. The most common finding in the sexual abuse group was hymenal notch(es) with attenuation of the hymen to 1 mm or less. Sexual abuse cannot be definitely excluded in any of the other patients in this study. A child's disclosure, however, is key to the detection and diagnosis of sexual abuse. Many, if not most, examinations of sexually abused children will elicit normal findings.⁴ When abuse is suspected because of physical or behavioral changes, careful and sensitive questioning may prompt the child to disclose abuse. In a child who has not disclosed abuse but who has genital or anal findings, the clinician should consider conditions other than sexual abuse. If another diagnosis is not readily apparent, or the child

has behavioral symptoms suggestive of abuse, the clinician may question the child about "uncomfortable touches" or opt to refer the child to a child abuse clinic for an interview and evaluation. An understanding and recognition of conditions confused with sexual abuse may ensure the appropriate questioning of the child or referral for a sexual abuse evaluation.

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