

# Vaginal Gonococcal Cultures in Sexual Abuse Evaluations: Evaluation of Selective Criteria for Preteenaged Girls

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**ABSTRACT.** *Objective.* Accurate selective criteria could limit the number of vaginal cultures for *Neisseria gonorrhoeae* performed on preteenaged girls as part of their sexual abuse evaluations. This study was performed to determine whether the published selective criteria by the American Academy of Pediatrics (AAP) Committee on Child Abuse and Neglect and by Siegel et al would have accurately detected all cases of vaginal gonococcal infections in our large study population.

*Methods.* We prospectively studied girls, ages 1 to 12 years, who were referred to our Child Sexual Abuse Team (CSAT) at Wake Medical Center in Raleigh, NC, between July 1, 1976 to July 1, 1996, for sexual abuse evaluations which were performed using a protocol that included collecting historical information, a sexual abuse interview, and a detailed genital examination which included a vaginal culture for *N gonorrhoeae*.

*Results.* Our study population consisted of 2898 girls of whom 2731 (94%) had vaginal cultures successfully performed for *N gonorrhoeae*. There were 84 girls with vaginal gonococcal infections, 80 of whom had a vaginal discharge. The four girls without a vaginal discharge included two with a history of having vaginal intercourse with an alleged perpetrator with gonorrhea, one with *N gonorrhoeae* isolated from a urine culture, and one whose preteenaged sister had gonorrhea. All of the 84 girls would have been identified using the selective culturing criteria of the AAP Committee on Child Abuse and Neglect: culturing when epidemiologically indicated (interpreted as the girl having another sexually transmitted disease [STD], a child sibling, child household member, a close child associate or a perpetrator with a known STD) or when the history and/or physical findings suggest the possibility of oral, genital, or rectal contact, or Siegel et al's more selective criteria: only culturing prepubertal girls for *N gonorrhoeae* if there is a vaginal discharge at the time of presentation or if there is a high risk for STD acquisition, defined as having a STD diagnosed, a sibling with a STD, contact with a perpetrator known to have a STD, contact with multiple perpetrators, or Tanner stage III or above.

*Conclusion.* Both the selective criteria of the AAP Committee on Child Abuse and Neglect and the more selective criteria of Siegel et al as we interpreted them

were accurate when applied to identifying girls with vaginal gonococcal infections in our study population. *Pediatrics* 1997;99(6). URL: <http://www.pediatrics.org/cgi/content/full/99/6/e8>; *Neisseria gonorrhoeae, female children, sexual abuse evaluation, vaginal cultures.*

ABBREVIATIONS. STD, sexually transmitted disease; AAP, American Academy of Pediatrics; CSAT, Child Sexual Abuse Team; NC, North Carolina.

When evaluating preteenaged girls for sexual abuse, detecting vaginal gonococcal infections is important information both from a legal standpoint, as it confirms sexual contact, and from a medical standpoint, as the child will need treatment and further evaluation for other sexually transmitted diseases (STDs). Because vaginal gonococcal infections are being detected in <3% of our study population of girls ages 1 to 12 years being evaluated for sexual abuse in Raleigh, NC, selective criteria that could limit the number of girls cultured and yet not exclude those with vaginal gonococcal infections would be useful.<sup>3</sup> To determine if the selective criteria suggested by the American Academy of Pediatrics (AAP) Committee on Child Abuse and Neglect and those of a recent study by Siegel et al would accomplish this, the following study was performed (Table 1).<sup>1,2</sup>

## METHODS

In this study, girls ages 1 through 12 years old who were referred for sexual abuse evaluation to the Wake Medical Center Child Sexual Abuse Team (CSAT) in Raleigh, NC, between July 1, 1976 to July 1, 1996 had vaginal cultures performed for *Neisseria gonorrhoeae* by protocol as part of their sexual abuse evaluation. *N gonorrhoeae* cultures were plated on modified Thayer-Martin and chocolate agar and immediately processed by the hospital laboratory. *N gonorrhoeae* was identified by at least two confirmatory tests involving different principles, eg, biochemical, enzyme substrate, or serology. Isolates were further confirmed by the North Carolina Public Health Laboratory. These girls also had extensive sexual abuse interviews and physical examinations performed with special attention given to the genital and rectal areas. The character of their hymenal rings, the transverse hymenal orifice diameters, and whether they had a vaginal discharge were noted. The examinations were performed by experienced physicians and interviewers on the CSAT team who used established protocols in conducting sexual abuse evaluations. The findings were then examined to determine if all the girls with vaginal gonococcal infections would have been detected by the selective culturing criteria of the AAP Committee on Child Abuse and Neglect or the more selective criteria of Siegel et al (Table 1).<sup>1,2</sup> "When epidemiologically indicated" in the AAP recommendations was interpreted as the girl having another STD or a STD at a different site, a child

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Received for publication Oct 1, 1996; accepted Dec 12, 1996.

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**TABLE 1.** Selection Criteria for Vaginal Gonococcal Cultures

AAP Committee on Child Abuse and Neglect  
 "Routine cultures and screening of all children for gonorrhea . . . is not recommended. The yield of positive cultures is very low in asymptomatic prepubertal children, especially those whose histories indicate fondling only. When epidemiologically indicated, or when the history and/or physical findings suggest the possibility of oral, genital or rectal contact, appropriate cultures... should be obtained."<sup>1</sup>  
 Siegel et al  
 "In prepubertal girls, cultures for *N gonorrhoeae* need only be obtained when a discharge is present at the time of examination or if the child is felt to be at high risk for STD acquisition. We define high-risk as having a STD diagnosed, a sibling with a STD, contact with a perpetrator known to have a STD, or contact with multiple perpetrators—all girls Tanner stage III or greater should be tested for STD's"<sup>2</sup>

sibling, a child household contact, or a child close associate with a STD, or a sexual contact with a person with a known STD.

Informed consent to be studied was obtained from all the girls' parents or guardians. This study was approved by the Wake Medical Center Institutional Review Committee.

**RESULTS**

The results of our study are summarized in Table 2. Two thousand eight hundred ninety-eight girls ages 1 through 12 years were evaluated for sexual abuse. Of these, 2731 had vaginal cultures performed for *N gonorrhoeae*. One hundred sixty-seven girls (6% of the total) did not have vaginal cultures. These girls' cultures either were improperly processed in outlying clinics and the girls treated for gonorrhea before referral to us, the cultures died before being fully evaluated, did not arrive in the laboratory after being performed, or inadvertently were not performed. Eighty-four vaginal cultures were positive for *N gonorrhoeae*. Eighty (95%) of these girls with vaginal gonococcal infections had a vaginal discharge. The four girls with vaginal gonococcal infections and without a vaginal discharge had the following histories and findings:

**Case 1**

A 4-year-old girl was named as a sexual contact by an 8-year-old boy with urethral gonorrhea who had vaginal intercourse with her. She also revealed she had vaginal and rectal intercourse with a 25-year-old man on many occasions, and vaginal intercourse with a 4-year-old boy. By inspection, the girl's transverse hymenal orifice diameter was 4 mm. There were three hymenal synechiae to the labia minora, a

healed laceration of the hymen at 6 o'clock, marked perihymenal erythema, and intravaginal synechiae. There was no vaginal discharge. Her vaginal and rectal cultures were positive for *N gonorrhoeae*. The rectal examination was normal.

**Case 2**

A 9-year-old girl gave a history of vaginal intercourse on a number of occasions with a 16-year-old male who was known to have gonococcal urethritis. It was unclear when the last episode occurred. She never had any symptoms, had a normal genital examination, and had no vaginal discharge although her vaginal culture was positive for *N gonorrhoeae*.

**Case 3**

A 3-year-old girl presented with 2 days of dysuria and urgency, and rectal and vaginal itching. A urine culture revealed >100 000 colonies/mL of *Gardnerella vaginalis* and *N gonorrhoeae*. Four days later, vaginal and rectal examinations were normal without a vaginal discharge, but vaginal and rectal cultures were positive for *N gonorrhoeae*. Initial evaluation revealed no history of sexual contact. She was admitted to the hospital 4 days later and at that time, she had a scant vaginal discharge. Further extensive questioning of the child was hampered by the child's age, and questioning of the family revealed no history of sexual contact.

**Case 4**

A 4-year-old girl was found locked in her room with the mother and father who were intoxicated. The child said she was spanked with a belt and had seen her father nude but denied sexual contact of any kind. Her vaginal examination was normal with no vaginal discharge. Her vaginal culture was positive for *N gonorrhoeae*. Her pharyngeal and rectal cultures were negative for *N gonorrhoeae*. Her preteenaged sister also had a history of having vaginal gonorrhea 1½ years earlier.

All 84 girls with vaginal gonococcal infections would have been detected by culturing only the girls who met the selective criteria of the AAP Committee on Child Abuse and Neglect as we interpreted them, or the more selective culturing criteria of Siegel et al (Table 1), as Cases 1 and 2 gave a history of having vaginal intercourse with an alleged perpetrator known to have gonorrhea, Case 3 had gonococcal

**TABLE 2.** Results

Condition	No.
Girls evaluated for sexual abuse	2898
Girls having vaginal cultures for <i>N gonorrhoeae</i>	2731
Girls with positive vaginal cultures	84
Girls with positive vaginal cultures with vaginal discharges	80
Girls with positive vaginal culture without vaginal discharges	4
Girls with positive vaginal culture without vaginal discharges who had another STD	1
Girls with positive vaginal culture without vaginal discharges who were siblings, household contacts, or associates of a child with a STD	1
Girls with positive vaginal culture without vaginal discharges who had contact with a perpetrator with a STD	2
Girls with positive vaginal culture without vaginal discharges who had a history or physical findings suggestive of oral, genital, or rectal contact	2

urethritis detected by a urine culture, and Case 4 had a preteenaged sibling with gonorrhea detected 1½ years earlier. (Case 4 had a negative vaginal culture at that time).<sup>1,2</sup>

## DISCUSSION

Current recommendations from authoritative sources about obtaining vaginal cultures for *N gonorrhoeae* as part of a sexual abuse work-up are as follows. In 1991, the Committee on Child Abuse and Neglect of the American Academy of Pediatrics (AAP) recommended that "Routine cultures and screening of all children for gonorrhea . . . is not recommended. The yield of positive cultures is very low in asymptomatic prepubertal children, especially those whose history indicates fondling only. When epidemiologically indicated, or when the history and/or physical findings suggest the possibility of oral, genital, or rectal contact, appropriate cultures . . . should be obtained."<sup>1</sup> In 1993, the Centers for Disease Control and Prevention recommended that "The decision to evaluate the child for STDs must be made on an individual basis. Situations involving a high risk of STDs and a strong indication for testing include the following: a suspected offender is known to have a STD or to be at high risk for STDs (eg, multiple partners or past history of a STD), the child has symptoms or signs of a STD, or there is a high STD prevalence in the community."<sup>4</sup> In 1994, the Report of the Committee on Infectious Diseases of the AAP recommended that in evaluating children for sexual abuse "appropriate tests for gonorrhea . . . should be considered. Some experts advise culturing all children examined for sexual abuse for . . . *Neisseria gonorrhoeae* because many children do not disclose the extent of the abuse, and infection with these agents may be asymptomatic."<sup>5</sup>

In 1995, a study by Siegel et al did gonococcal vaginal cultures on children being evaluated for sexual abuse who met what they interpreted the Committee on Child Abuse and Neglect of the AAP's selective criteria to be.<sup>1,2</sup> These were: that the child had a history of genital discharge or contact with the perpetrator's genitalia, the child had a genital discharge or genital trauma on examination, the child had a history of consensual sexual activity, the child was Tanner III or greater, the child had sexual contact with a perpetrator known to have a STD, or there was a family member with a STD. In their study, of 704 female children ages 3 weeks to 18 years evaluated, 462 met these criteria. In this group, there were 6 of 249 prepubertal girls who met these criteria and had vaginal gonococcal infections. All six also had a vaginal discharge. Based on these six cases and a review of the literature on the subject, Siegel et al's conclusions and recommendations were that "in prepubertal girls, cultures for *N gonorrhoeae* need only be obtained when a discharge is present at the time of examination or if the child is felt to be at high risk for STD acquisition" (defined as having a STD diagnosed, a sibling with a STD, contact with a perpetrator known to have a STD, or contact with multiple perpetrators—all girls Tanner stage III or greater should be tested for STDs).<sup>2</sup> Siegel et al felt that the

decision to test may also be influenced by physician experience, presence of hymenal trauma, and the local epidemiology of STDs.

Having a vaginal discharge would meet the selective criteria of the AAP Committee on Child Abuse and Neglect and those of Siegel et al for doing a vaginal culture. The question of whether or not to limit performing vaginal cultures for *N gonorrhoeae* is really confined to whether or not to culture all preteenaged girls being evaluated for sexual abuse who do not have a vaginal discharge, or limiting it to certain situations when they do not have a vaginal discharge. A vaginal gonococcal infection in a girl under age 13 years without a vaginal discharge is an uncommon situation, being found in only 5% of 84 girls with vaginal gonococcal infections in our study. The strength of our study was that it contained preteenaged girls with the rare situation of having a vaginal gonococcal infection without a discharge. This enabled us to examine the selective criteria in these important cases. Despite of its size, the weakness of our study is that there were only four such cases, making it hard to generalize our results to the population at large. There are three published reports with a total of nine cases of asymptomatic preteenaged girls with vaginal gonococcal infections.<sup>6-8</sup> It is unclear in these reports if asymptomatic means no vaginal discharge. Assuming it does, these cases include one reported by Tunnessen and Jastremski, a two-year-old girl detected when they evaluated the siblings of a 5-year-old girl with a vaginal gonococcal infection and a discharge, and two reported by Sgroi, sisters ages 5 and 8 years old who were detected when evaluating the household where a nonrelated 5-year-old girl with vaginal and conjunctival gonococcal infections (both with a discharge) had stayed for one week. None of these three children had a history of sexual contact.<sup>6,7</sup> Six asymptomatic girls <10 years old were reported by Folland et al<sup>8</sup> They were identified because three were sexual contacts of children with symptomatic gonococcal infections, two were relatives of children with symptomatic gonococcal infections, and one was an associate of children with asymptomatic gonococcal infection. These nine girls would have been cultured using the AAP Committee on Child Abuse and Neglect selective criteria. They all would have been cultured using Siegel et al's selective criteria if the two cases of Sgroi's (unrelated household contacts of a child with gonorrhea) and three cases of Folland et al's (two child relatives and a child associate of children with gonorrhea) would have been considered siblings by Siegel et al.<sup>2,7,8</sup> Dejong, in a study of gonococcal infections in girls younger than 14 years old, reported that 5 of 15 girls with vaginal gonococcal infections did not have a vaginal discharge.<sup>9</sup> All were sexually abused. It is not stated if these five girls were preteenaged, if they had other venereal diseases, if other siblings in the family had venereal diseases, if there was genital contact, or anything about their perpetrators, making it hard to apply the selective criteria of the AAP Committee on Child Abuse and Neglect or those of Siegel et al to these cases.<sup>1,2</sup> It will take many large studies to collect

enough preteenage girls with vaginal gonococcal infections without a discharge to be certain selective criteria for culturing girls in this group are very accurate.

### CONCLUSIONS

In our study, all 84 girls with vaginal gonococcal infections would have been detected if we had only done vaginal cultures on girls being evaluated for sexual abuse who met the selective culturing criteria of the AAP Committee on Child Abuse and Neglect or the more selective culturing criteria of Siegel et al (Table 1).<sup>1,2</sup> In our review of published studies containing preteenaged girls with vaginal gonococcal infections, all these girls would have been cultured using the selective criteria of the AAP Committee on Child Abuse and Neglect as we interpreted it.<sup>1,6-8</sup> All also would have been cultured using the selective criteria of Siegel et al if these criteria are extended to not only include having a sibling with a STD, but also child relatives, child household contacts, and child associates with a STD.

All girls being evaluated for sexual abuse and having a vaginal discharge should have a vaginal culture performed for *N gonorrhoeae*. With the current state of knowledge about gonococcal vaginal infections without a vaginal discharge being so limited, the final decision as to whether to obtain gonococcal vaginal cultures on all preteenaged girls being evaluated for sexual abuse who do not have a vaginal discharge, or to limit culturing based on selective criteria suggested by the AAP Committee on Child Abuse and Neglect, or those suggested by Siegel et al (but modified to also include child household contacts, child relatives, or child associates with a STD),

will be based on whether one is willing to risk missing the rare case of a girl with a vaginal gonococcal infection that does not have a discharge and may possibly not fit the selected criteria chosen.<sup>1,2</sup> It is a decision each physician will have to make individually, depending on what he or she feels is best when balancing what the detrimental effect of missing a rare case of a vaginal gonococcal infection without a discharge will be on that child versus the beneficial effect of not doing vaginal cultures on many children who do not need them.

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