

## MEDICINE

# Evaluating Sexually Transmitted Diseases In Children

—by Robert Shapiro

### Introduction

When a sexually transmitted infection (STD) is diagnosed in a child, sexual abuse must be considered and evaluated. Although there is no consensus among experts regarding the certainty of abuse when an STD is found, there is less controversy about some STDs than others. For example, most experts agree that infections beyond the neonatal period from *Neisseria gonorrhoeae* and *Chlamydia trachomatis* are primarily transmitted by sexual contact and that a determination of sexual abuse should be made whenever these infections are diagnosed. However, there is widespread disagreement over the probability of non-sexual transmission of *Condyloma acuminata* (genital warts). This uncertainty creates difficulties for those who investigate abuse allegations and for those who are mandated to protect the child. When there is an infection but there are no physical signs of abuse nor any history of abuse, investigators must assess the potential risk to the child while recognizing that medical opinion may vary.

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Although many studies have examined the prevalence of sexual abuse and STDs, the research is limited by a number of barriers, including the difficulty in diagnosing sexual abuse, long incubation periods for some infections, low overall prevalence of infection among sexually abused children, and asymptomatic infections that may persist from birth. Some studies identify a high prevalence of STDs in abused children, while others find the prevalence to be low. Some studies cite a very high relationship between infection and abuse, while others report low correlation. These differences are partly explained by the difficulties in studying this subject, as described above. Variations in the prevalence of STDs in each community may also cause differences in the prevalence of STDs in children. It is important to recognize that there is still much to be learned about this subject, and that harm to a child and family can result both from

overconfidence about the diagnosis of abuse and from paralyzing indecision.

An STD in a child may be symptomatic or asymptomatic. For example, genital warts can usually be diagnosed by findings on physical examination alone, but chlamydia is frequently asymptomatic and can only be diagnosed if appropriate cultures are obtained. In prepubertal girls, common genital tract symptoms such as dysuria, itching, redness and pain, are very non-specific and do not indicate an STD. Most girls with these complaints have no specific infection diagnosed, nor are these symptoms sensitive indicators of abuse. Because of the important legal and social conse-

quences of finding an STD, cultures are often obtained in asymptomatic patients who are evaluated for abuse even though the prevalence of infection is very low. Microbiology labs handling these specimens must be certain of their results and, when necessary, carry out additional tests to guarantee that no infections are reported mistakenly. This article will review the typical presentation of specific STDs, diagnosis, treatment, and information about sexual and non-sexual transmission.

### Specific infectious agents

#### *Neisseria gonorrhoeae*

*Neisseria gonorrhoeae* is the most common STD diagnosed in sexually abused children. At Children's Hospital Medical Center in Cincinnati (CHMC), the prevalence of gonorrhea in prepubertal children evaluated for sexual abuse is about 2%. The prevalence is higher in adolescents, about 5%. Although asymptomatic infection is common in adolescents, it is our experience that almost all prepubertal children with vaginal gonorrhea have vaginal discharge when examined. In a prospective study recently completed at CHMC, no cases of gonorrhea were diagnosed in asymptomatic prepubertal girls evaluated for sexual abuse, but the prevalence of gonorrhea in girls with vaginal discharge was 11%. In another relevant CHMC study, prepubertal girls who were evaluated for complaints of vaginal discharge but in whom sexual abuse was not suspected were cultured for STDs. The prevalence of gonorrhea in these symptomatic girls was 9% and all of these girls were thought to be victims of sexual abuse. We recommend therefore that all prepubertal girls with vaginal discharge on exam must be cultured for gonorrhea, whether sexual abuse initially is suspected or not. Those girls who test positive for gonorrhea must then be reported for alleged sexual abuse to the mandated agencies.

Pharyngeal and rectal gonorrhea infections are often asymptomatic but are much less common. Most reports of asymptomatic vaginal infection in young children come from studies of children who were close contacts of children with gonorrhea infection. A prevalence of 15%-50% has been identified for gonorrhea infection in this group of "close contact" children. Therefore, when a child has been diagnosed with gonorrhea, all other children living in the same household, as well as close playmates who may also have been abused, should be cultured for gonorrhea.

The prevalence of gonorrhea in asymptomatic prepubertal children is very low and the decision to culture should be made on a case-by-case basis. Factors which may influence a decision to obtain cultures include the type of sexual abuse, SID history and risk factors of the perpetrator, and the overall prevalence of gonorrhoeae in the community. In adolescents, cultures for gonorrhea should

*continued on next page*

# Medicine

—by Robert Shapiro

continued from page 11

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always be obtained. Children evaluated within 72 hours of an assault may need to be re-evaluated in 2 weeks because infections transmitted at the time of assault may not yet have reached sufficient concentrations to yield a positive test.

Cervical cultures are recommended for adolescents, but not for prepubertal girls. When discharge is present, a culture of the discharge is sufficient. If no discharge is present, the mucosa just proximal or distal to the hymen should be swabbed with a moistened calgiswab. I have found that by moistening the calgiswab with non-bacteriostatic saline, the test will be more comfortable for the child. Specimens must be plated immediately on Thayer-Martin media or chocolate blood agar. If gonorrhoeae is found, the lab must perform at least two additional tests to confirm the accuracy of the diagnosis.

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of gonorrhea beyond the neonatal period and asymptomatic, persistent neonatal infection is not thought to occur. Experts agree, therefore, that any child who is not sexually active and who is infected with gonorrhea is almost certainly a victim of sexual abuse.

For treatment of uncomplicated gonorrhea infection, a single 125mg IM injection of Ceftriaxone can be given to children of all ages. Ceftriaxone is effective against vaginal, rectal, urethral, and pharyngeal infection. It is also effective for the treatment of incubating syphilis. It may be mixed with 1% lidocaine to reduce the discomfort of injection. Oral Cefixime, 400mg, is an alternative to IM treatment but its effectiveness against pharyngeal infection has not been extensively studied. Penicillin is no longer recommended because of the high prevalence of penicillinase-producing *N. gonorrhoea* (PPNG). Patients who are allergic to cephalosporins should receive Spectinomycin. Although the Center for Disease Control and Prevention (CDCP) no longer recommends follow-up cultures for adults with gonorrhea, infected children should be re-cultured to demonstrate a cure. These follow-up cultures may become significant if the patient, on a future date, must be re-evaluated for abuse.

## ***Chlamydia trachomatis***

Chlamydia is the second most prevalent STD diagnosed in sexually abused children. At CHMC, almost all cases of chlamydia have been diagnosed in adolescent patients. In our studies, the prevalence of chlamydia among sexually abused patients is 0.8% in prepubertal children and over 9% in adolescents. In all age groups, chlamydia is often an asymptomatic infection and, in prepubertal children, ascending infection is very unusual. Because

of the low prevalence in prepubertal children, the decision to culture should be made on a case-by-case basis. Factors that may influence this decision are the same as for gonorrhoeae. Cultures obtained within 72 hours of an acute assault will need to be repeated in two weeks because infection transmitted at the time of assault will not yield a positive test.

Children tested for chlamydia infection must be cultured to make an accurate diagnosis. Enzyme immunoassay, direct fluorescent antibody tests, and DNA probes of recto-vaginal specimens are inaccurate. Pharyngeal infection is quite rare, and there is no need to culture the pharynx. Successful recovery of the organism requires the culture of infected epithelial cells. Therefore, culture of a discharge alone is inadequate. The culture method described in the section above on gonorrhoeae should be followed except that the calgiswab must be gently scraped against the mucosa so that cells are obtained. In addition, certain culture materials are toxic to chlamydia and may prevent recovery of the organism. Specifically, swabs made with wood should be avoided. Calgiswabs (calcium alginate swabs on metal wires) are the most commonly used swabs used for chlamydia testing. Specimens must be placed on ice in an appropriate transport media immediately and transported quickly to the microbiology lab.

As with gonorrhoeae infection, most experts agree that any child who is not sexually active and who is infected with chlamydia has almost certainly been sexually abused. However, unlike gonorrhea, asymptomatic neonatal infection may persist, possibly for up to 3 years or longer. The likelihood of infection through non-sexual transmission outside of this period is very unlikely and has never been documented.

In children over 8 years old, treatment with Doxycycline 100mg BID x 7 days is effective. Azithromycin, 1 gram orally, is an alternative to Doxycycline. Although Azithromycin therapy requires only a single dose, it is more expensive than Doxycycline and it is not approved for children under 15 years. In children under 8 years, Erythromycin 50mg/kg/day (max 2 grams) divided into 4 doses for 10-14 days is recommended. Follow-up cultures should be obtained 2-3 weeks after the completion of treatment.

## **Syphilis**

There have been very few reports of syphilis in sexually abused children. However, the prevalence of syphilis in the adult and adolescent population is increasing nationally. In the future, we may see more infections in abused children as well. The highest number of cases reported in the literature are in children who have been diagnosed with other STDs; it is reasonable therefore to test for syphilis

continued on next page

# Medicine

—by Robert Shapiro  
continued from page 12

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in any child who has been diagnosed with an STD. Syphilis testing should be obtained in all children with a genital ulcer or chancre and in those who show signs of secondary syphilis infection (rash, mucocutaneous lesions, and adenopathy). Darkfield examination of lesions or serologic testing of serum is required for the diagnosis. Both nontreponemal and treponemal serologic tests must be done to make a diagnosis of syphilis. After an acute assault, repeat testing is necessary 12 weeks later because initial serum titers will be low.

Non-sexual transmission of syphilis has never been documented outside of the neonatal period. Child abuse is presumed to have occurred if syphilis is diagnosed after the newborn period in a patient who is not sexually active.

Benzathine penicillin G, 50,000 units/kg IM (max 2.4 million units) x1 is the treatment for syphilis. There are other important management considerations in treating the child with syphilis that are beyond the scope of this article.

### **Condyloma acuminata (genital warts)**

There has been much controversy over the prevalence of non-sexual transmission of ano-genital warts. Over the last 10 years, studies linking recto-genital warts with sexual abuse have shown an association ranging from 3% to nearly 100%. Many of the studies are limited by small numbers of patients studied and by incomplete sexual abuse evaluations. Many clinicians believe that children

can get recto-genital condylomata by means other than sexual abuse, including perinatal infection, autoinoculation, non-sexual contact, or by fomites. Perinatal infection can be difficult to exclude in some cases because the incubation period may be 2 years or longer. However, recto-genital warts are most often transmitted through sexual contact in the adult population and when diagnosed in children may indicate sexual contact and abuse. Therefore, it is important that children with recto-vaginal warts be evaluated for sexual abuse. The extent of this evaluation should minimally include a disclosure interview and physical examination. The decision to report al-

leged sexual abuse and to obtain tests for other STDs should be made on a case by case basis.

The diagnosis of condylomata can usually be made by physical examination alone, but a biopsy can be obtained when the diagnosis is in doubt. Treatment options include local application of podophyllin, surgery, and cryotherapy.

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### **Trichomonas**

Trichomonas infection is caused by the protozoan *T. vaginalis*. Infection in males is often asymptomatic but it frequently causes a malodorous discharge in females. Infection in prepubertal children is occasionally found and may cause a discharge. Perinatal transmission does occur but persistent infection is thought to be unlikely past the first few months of life. Trichomonas can theoretically be spread through fomites such as shared towels, but this has never been documented. The most likely transmission of trichomonas to a child is by sexual contact.

The diagnosis is made by wet prep examination of vaginal secretions or by microscopic examination of the urine. Culture techniques are now available and may be superior to wet prep and urine analysis. Treatment with Flagyl (metronidazole) 40mg/kg (maximum 2 grams) PO given in a single dose should be effective in 95% of individuals.

### **Laboratory evaluation for STDs**

The CDCP 1993 *Sexually Transmitted Diseases Treatment Guidelines* states that the "decision to evaluate the child for STDs must be made on an individual basis. Situations involving a high risk for STDs and a strong indication for testing include the following: 1) A suspected offender is known to have an STD or to be at high risk for STDs (e.g., multiple partners or past history of STD), 2) The child has symptoms or signs of an STD, 3) There is a high STD prevalence in the community" (1). Many authorities recommend culturing all children who give a history of contact with the perpetrator's genitalia as well as children too young to provide a detailed history of the abuse. It is my impression that past experience and local STD rates influence individual practitioners to develop a specific protocol that best serves their patients. There appears to be a trend to culture fewer patients compared with past practices.

When screening for STDs, consideration should be given to the risk of Hepatitis B infection as well as HIV. Hepatitis, HIV and syphilis testing may all need to be repeated if initial screening is negative and the patient was seen soon after the assault. Follow-up for RPR testing can be obtained in 12 weeks and repeat HIV testing can be obtained in 3 to 6 months.

### **Prophylactic Treatment**

Prophylaxis for STDs is not recommended in prepubertal children because of the low prevalence. Exceptions to this rule might include symptomatic children or children assaulted by a perpetrator who is known to have an STD. Prophylaxis for adolescent victims should always be considered along with pregnancy.

continued on next page

# Medicine

—by Robert Shapiro

continued from page 13

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## ANNOUNCEMENT

### NTPETA MOVES INTO NEW TRAINING PHASE

A model training program, NIPETA, funded by the National Center on Child Abuse and Neglect (NCCAN), has developed an accessible, affordable curriculum for therapists who treat sexually abused children. NIPETA is the acronym for the National Training Program on Effective Treatment Approaches in Child Sexual Abuse, funded by NCCAN, presented by the National Children's Advocacy Center, and hosted by a number of regional community-based organizations across the country.

Now, following each regional NTPETA training, participants will have the chance to ask

additional questions of a recognized expert in the field during a follow-up teleconference. Experts donating their time to answer participants' questions during teleconferences include Ethel Amacher, Barbara Boat, Mark Chaffin, Jan Hindman, Eliana Gil, and Kee MacFarlane. The teleconferences last approximately one hour and are free to the first ten sites for which registrations are received.

In addition, NIPETA will present three satellite video conferences on specific topics related to child sexual abuse treatment.

For further information about participating or serving as a site coordinator, call 1-800-239-9939.

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## THANK YOU!

APSAC is delighted to thank the sixth grade class of Ms. Kathleen Holleran at the Roycemore School in Evanston, Illinois, for a whopping donation of \$230.00. Ms. Holleran's students held a bake sale and a car wash, and donated all of their proceeds to APSAC, in the hope of helping abused children. We think Ms. Holleran's class sets an example for sixth graders everywhere!

## HELP APSAC GROW

Do you belong to another professional organization—national or local—which shares APSAC's interest in child maltreatment? Would those colleagues benefit from knowing more about APSAC and the work we do? Contact the national office for information that can be distributed to other groups. Phone 312-554-0166 or Fax 312-554-0919