Case Report

The Interpretation of Repeat Positive Results for Gonorrhea and Chlamydia in Children

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A B S T R A C T

Background: The diagnosis of gonorrhea and/or chlamydia in a prepubertal child beyond the neonatal period is confirmatory of mucosal contact with infective bodily secretions and therefore highly concerning for sexual abuse. When such a diagnosis is made, a report to protective authorities is warranted so that safety and potential criminal activity may be evaluated concurrent with the medical management. Occasionally, despite perceived adequate medical management and protective safety plans, a child may present with a repeat positive result for sexually transmitted infections. In this scenario, it is important for medical providers to carefully consider and be aware of the possible reasons for the repeat positive result: (1) treatment failure, (2) a new infection from repeated abuse, or (3) a false-positive result due to the limitations of nonculture testing.

Case: Prepubertal sisters were diagnosed with gonorrhea and Chlamydia and treated with antibiotics, and the individual identified as having sexually abused them was removed from the home.

Summary and Conclusion: Over a 4-month period, both children continued to have positive testing for chlamydia via the nucleic acid amplification test and/or culture. Concurrent with using alternate antibiotic treatment options, protective authorities were alerted to the fact that this was likely a reinfection. The investigative team later determined that a second adult, who tested positive for gonorrhea and chlamydia, was also sexually abusing both girls. Disclosures of abuse regarding both adult individuals were deemed credible by authorities and supported with collateral information.

Key Words: Sexual abuse, Child abuse, Follow-up in sexual abuse, Gonorrhea, Chlamydia, Delayed disclosure, Treatment failure, Warts, Human papilloma virus, HPV, Cultures, Nucleic acid amplification test (NAAT), Sibling testing with sexually transmitted infections (STIs), Time frame for chlamydia, Time frame for gonorrhea

Introduction

The diagnosis of gonorrhea and/or chlamydia is confirmatory of mucosal contact with infective bodily secretions.[1] Outside of the time period when perinatally acquired infection can occur, the diagnosis of gonorrhea and/or chlamydia in a prepubertal child is indicative of intimate anogenital contact.[2] Continued follow-up of these patients after treatment is important to address treatment success and explore the possibility of continued abuse. Interpretation of repeat positive results can also be complicated by the various testing methods available and the length of time that testing may remain positive after successful treatment. For these reasons, children with positive results for sexually transmitted infections (STIs) require close follow-up. It is essential for medical providers conducting assessments on children who may have been abused to understand testing ramifications and how this may relate to child safety. When available, consultation with a child abuse pediatrician or infectious disease specialist may be of great value for a practitioner unfamiliar with these complex cases. Concurrently, the significance of these results should be communicated to investigative authorities in a manner that is understandable to assist in their investigation and safety planning of the child's environment.

Case

A 7-year-old girl presented to her pediatrician with vaginal discharge and dysuria, and a nucleic acid amplification test (NAAT) (Qiagen [Quest Laboratories, Madison, NJ] HC2 *Chlamydia trachomatis* and *Neisseria gonorrhea* amplified DNA assay) and a genital culture were performed. Subsequently, a report to protective authorities was made, prompting referral for a forensic interview the following morning, during which the child disclosed only digital/vaginal contact by an adult male relative (adult 1) with caregiving responsibilities who lived in the home. This individual was immediately removed and had no further contact with the patient or her siblings. On the day of the forensic interview, the girl had a medical evaluation with physical examination by a child abuse pediatrics (CAP) fellow, which demonstrated copious yellow-green vaginal discharge obscuring the structures of the vaginal vestibule. Cultures for gonorrhea and chlamydia, as well as blood testing for HIV, hepatitis B, hepatitis C, and syphilis, were performed.

The day after this examination, the original NAAT and vaginal culture results were positive for gonorrhea, and the pediatrician referred the patient to a local emergency

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department, where she received only ceftriaxone.[3] Three days after treatment, her vaginal discharge was fully resolved and she had a normal genital examination via colposcopy performed by the CAP fellow. Given the high incidence of coinfection with chlamydia when gonorrhea has been diagnosed and given the lack of antibiotics to address that possibility, the CAP fellow retested the index patient for chlamydia via vaginal culture and treated presumptively for chlamydia with oral azithromycin.[3,4] Subsequently, the chlamydia culture returned with a positive result. Four weeks following this treatment, the patient had follow-up laboratory testing via urine NAAT, which was negative for both gonorrhea and chlamydia.

The patient's 6-year-old sister presented for a medical evaluation by a board-certified child abuse pediatrician 7 days after the index patient's initial presentation. She had significant developmental communication delays precluding a forensic interview. This child also had a yellow-green vaginal discharge and an otherwise normal genitourinary/anal examination. Vaginal cultures and urine NAAT (Aptima [Quest Laboratories, Madison, NJ] Combo 2 RNA TMA) for gonorrhea and chlamydia, as well as blood testing for HIV, hepatitis B, hepatitis C, and syphilis, were performed. Her urine NAAT was positive for both gonorrhea and Chlamydia, and her vaginal gonorrhea culture was positive (chlamydia culture was negative). She was treated with intramuscular ceftriaxone and oral azithromycin, as observed by nursing staff in the emergency department, thereby ensuring adequate dosage and consumption of medication.

At the 6-year-old sibling's 5-week follow-up, testing via urine NAAT (Aptima Combo 2 RNA TMA) and cultures were again positive for Chlamydia, and she was treated with intravenous [IV] azithromycin and IV ceftriaxone. Results of follow-up testing via urine NAAT (Aptima Combo 2 RNA TMA) after treatment were negative.

The repeat positive culture and NAAT in the 6-year-old sister raised concern for ongoing abuse by another individual given that adult 1 was confirmed to have been incarcerated since the original diagnosis. Due to this possibility, the mother and children moved to a new

Case	Item	Day															
		1	3	4	7	10	11	17	44	50	52	67	100	102	109	119	133-298
1	Exposure		* A								* B						
	GC culture	+	–														–
	GC NAAT	+							–				–				–
	GC treatment			IM CTX										IV CTX			
	Chl culture		–					+									–
	Chl NAAT	–							–				+				–
	Chl treatment			Not given				Oral AZ						IV AZ, home 7 days PO levofloxacine	Finished levofloxacine		
2	GC culture					+				–							–
	GC NAAT					+			–	–		–	–				–
	GC treatment						IM CTX			IM CTX				IM CTX			
	Chl culture					–				+							–
	Chl NAAT					+			+	+		–	+			–	–
	Chl treatment						Oral AZ			IV AZ				IV AZ, home 7 days PO levofloxacine	Failed Levofloxacin Started 10 days IV ciprofloxacin	10 days IV ciprofloxacin Inpatient	

Fig. 1. Detailed timeline of symptoms, testing, treatment, and exposure for both children. AZ, azithromycin; Chl, chlamydia; CTX, ceftriaxone; GC, gonorrhea; IM, intramusclar; IV, intravenous; NAAT, nucleic acid amplification test; 1, index patient; 2, sibling; A, last exposure to adult 1; B, last exposure to adult 2.