

CASE 107: A 6-YEAR-OLD WITH VAGINAL DISCHARGE

A 6 year old female is brought to your office for evaluation of malodorous blood-tinged vaginal discharge. The mother noted scant discharge on her daughter's underwear for one week. The child has not had any fever although she did have a stomach ache one week ago. There was no history of vomiting, diarrhea, constipation, or dysuria. The child has taken more frequent baths for the last three weeks because she is now participating in sports. She lives with her mother and sister; her parents are divorced but she does have weekend visits with her biological father. She has been a good student although after the divorce her school performance declined. The mother feels her daughter is currently doing well at school.

On physical examination the child is well nourished with stable vital signs. She is quiet, yet willing to answer questions. The head and neck, respiratory and cardiovascular examinations are normal. Her abdomen is soft and non tender. You order a urinalysis and urine culture; the urinalysis shows 10-15 white blood cells/HPF and 5-10 red blood cells/HPF. You culture the urine.

SELECT THE ONE BEST ANSWER

1. Which is an appropriate next step towards evaluating this patient:
 - a. Presumptive treatments with oral antibiotics until the culture results are confirmed.
 - b. Advise sitz baths without bubble bath and reassure that the discharge is nothing more than a response to irritation from the harsh soap.
 - c. Provide the child with a topical steroid and instruct to apply to any areas of vaginal redness.
 - d. Interview the mother and child with regard to concerns for sexual abuse.
 - e. Refer the child to an advocacy center or contact the child welfare system to evaluate for suspected abuse.

2. The differential diagnosis for vaginal bleeding in this age group includes all but the following:
 - a. Vulvovaginitis
 - b. Precocious puberty
 - c. Foreign body
 - d. Trauma
 - e. Labial adhesions

3. Which is a true statement regarding a genital examinations in prepubertal females?
 - a. Insufficient labial traction to adequately visualize the hymenal margins and vestibule is a common examination error.
 - b. Examination in the frog leg position with feet together is optimal to visualize the posterior hymenal area.
 - c. Sedation is often required to examine prepubertal girls.
 - d. Examination should be performed without a caretaker allowing the child an opportunity to make a disclosure or reduce embarrassment.

- e. Speculum examination is indicated if there is concern for a foreign body.
4. You interview the child and mother separately. The mother has noticed that the child has been quieter lately and not complaining of any vaginal or abdominal pain; she has no concerns about the father sexually abusing her child. You interview the child and she makes no disclosure regarding sexual abuse. A true statement regarding the presentation of child sexual abuse is:
 - a. Specific signs and symptoms for sexual abuse include rectal or genital bleeding, developmentally-unusual sexual behavior and the presence of a sexually transmitted disease.
 - b. A sexually transmitted disease in this child is diagnostic of child sexual abuse.
 - c. Sexual abuse represents 25% of all confirmed cases of child maltreatment.
 - d. Penetration defines child sexual abuse.
 - e. Sexual play is determined by the parents' standards of behavior.
 5. Which is a correct statement regarding findings indicative of child sexual abuse upon examination?
 - a. A fimbriated hymen is suspicious for child abuse.
 - b. Children who have experienced penetration will not have a finding on genital examination in majority of cases.
 - c. Hymenal diameter is a sensitive measure for child sexual abuse.
 - d. Hymenal tears are frequently seen in straddle injuries.
 - e. An intact hymen rules out child abuse.
 6. The normal patterns of the prepubertal hymen include all of the following except:
 - a. Crescentic
 - b. Fimbriated
 - c. Annular
 - d. Septate
 - e. Congenital absence of the hymen
 7. On examination of your 6 year-old patient you find that she is not cooperative to perform a thorough genital examination. You note that she has a malodorous discharge and some dried blood on her labia. At this point what would be the best management?
 - a. The examination is consistent with a straddle injury; reassure the mother that this is a normal injury for her child's age.
 - b. Obtain cultures for vaginal cultures for gonorrhea and chlamydia. Presumptively treat for a STD and contact the regional child welfare system.
 - c. Arrange for an exam under anesthesia.
 - d. Reassure mother this is a hygiene issue and schedule an appointment in two weeks.
 - e. Attempt re-examination with support staff that can hold the child in place.

8. You are now examining a different 6 year-old with a chief complaint of finding drops of blood on her underwear. There have been no complaints of dysuria, history of trauma, fevers or discharge. On genital examination you note a purplish doughnut-shaped mass that obscures the vaginal opening. Which of the following is true?
- This condition is mostly seen in Caucasian children.
 - Sudden or recurrent increases of intra-abdominal pressure are felt to be precursors for this condition.
 - The child should immediately be referred to an oncologist.
 - This is a prolapsed hymen and warrants immediate treatment by a gynecologist.
 - Surgery is required to correct this problem.
9. A 9 year-old is seen in your clinic for recurring abdominal pain. This pain is described as lasting for four months, intermittent, and periumbilical. She has had no history of fever, vomiting, mouth sores, weight loss, joint pain, or rashes although she has intermittent diarrhea. The pain does not interfere with her activity. Examination reveals a normally developing 6 year-old. The most correct choice is:
- Obtaining ESR, CBC, stool for occult blood, culture, ova and parasites, and urinalysis.
 - Referral to a regional child abuse advocacy center due to suspicions of child sexual abuse.
 - Empiric administration of an anti-reflux medication.
 - Order an upper GI to rule out juvenile peptic ulcer disease.
 - Referral to a psychiatrist for antidepressants.
10. In your clinic you have a 15 year-old female who presents with a 4 day history of nausea, vomiting and diffuse lower abdominal pain. She has had fever, no diarrhea and denies dysuria. She has a history of irritable bowel syndrome which has been under control per her mother. She denies sexual activity when her mother is in the room. Her menstrual cycles have been regular and she just started her menses about 1 week prior to this visit. On exam her neck is supple, she has no oral lesions and but she does have right upper quadrant pain and lower abdominal tenderness. You interview the patient alone and she admits to sexual activity. You perform a pelvic examination and she is tender on cervical and adnexal examination. You obtain cultures. The most likely diagnosis is:
- Chronic PID due to chlamydia infection.
 - Gonococcal cervicitis
 - Appendicitis
 - Mesenteric adenitis
 - Fitz-Hugh Curtis Syndrome
11. Which of the following is false statement regarding the Fitz-Hugh Curtis Syndrome?
- Perihepatitis or Fitz-Hugh Curtis Syndrome develops in 5% to 20% of woman with acute salpingitis.
 - Liver function tests are usually abnormal in Fitz-Hugh Curtis Syndrome.

- c. Causative agents include *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, anaerobes, and Mycoplasma.
 - d. Complaints of upper right quadrant pain due to Fitz-Hugh Curtis may continue weeks after the lower abdominal pain has resolved.
 - e. The risk of ectopic pregnancy due to tubal closure is a sequela of PID.
12. A 5 year-old is brought to your office with a complaint of vaginal discharge that can be seen on her underwear for one week. She has no fever, has had no rashes, but does complain that it hurts when she urinates, although she has no frequency or urgency. A true statement about vulvovaginitis in prepubertal girls is:
- a. Nonspecific vulvovaginitis accounts for the majority of vulvovaginitis in prepubertal girls and often is related to poor hygiene.
 - b. *Candida* is a common cause of prepubertal vulvovaginitis.
 - c. Specific pathogens for complaints of vulvovaginitis are mostly due to sexually transmitted diseases.
 - d. Estrogenization produces vaginal discharge seen in infants and prepubertal girls.
 - e. Immune evaluation should be considered in prepubertal girls who have a specific respiratory and enteric pathogen causing vulvovaginitis.
13. All of the following are diagnostic of child sexual abuse except:
- a. Culture positive gonorrhea infection.
 - b. Non-perinatally transmitted (or transfusion acquired) HIV or syphilis.
 - c. Disclosure by child of sexual abuse.
 - d. Condyloma acuminata (anogenital warts).
 - e. Documented presence of semen or sperm.
14. Which is a true statement about straddle injuries to children?
- a. Straddle injuries are seen in nonambulatory children.
 - b. Penetration in the majority of cases will exhibit hymenal injuries.
 - c. Bruising or laceration near or between the labia majora and minora can occur.
 - d. Straddle injuries often involve the posterior hymenal area.
 - e. Boys with straddle injuries often have anal tears.
15. A mother brings her 8 month-old female infant in to see you because she noted on examination of her daughter's vagina that she "does not look right down there." She is worried she was possibly sexually abused. You examine the child's genital area and note that she has labial adhesions. A true statement regarding labial adhesions is:
- a. The urethral opening is always obscured in labial adhesion.
 - b. If there is no urinary obstruction, topical estrogen is an optional treatment.
 - c. The child needs immediate referral to a urologist due the relationship of labial adhesions and urinary track anomalies.
 - d. Labial adhesions in this age group are most often due to sexual abuse.
 - e. The first line of treatment for labial adhesion is surgical.

16. A 9 year-old boy presents with a history of anal pain for three days. He has complained of a painful perianal rash, pain with defecation and his mother noted blood on his stool last night. Your history reveals that his 6 year-old sister just recovered from a sore throat and your interview with mother reveals no concerns for a traumatic injury or sexual abuse. On examination, the child is cooperative. The eyes, ears, throat, lung and skin examination are all normal. Examination of his anal region reveals a very erythematous perianal rash without ulcers. You also note one or two superficial rectal fissures. Which of the following is true?
- Streptococcal infection in the anogenital region is very suspicious of child sexual abuse and a report to child welfare is indicated.
 - Topical treatment with a steroid cream is indicated.
 - A rectal swab used for enteric pathogens will detect streptococcal infection.
 - Streptococcal skin infections are not painful.
 - Group A beta-hemolytic streptococci can cause balanitis and vulvovaginitis.
17. Anal dilatation is a concerning finding for suspected child sexual abuse. Which of the following is not true?
- Stool in the vault can cause anal dilatation.
 - A history of encopresis can be associated with anal dilatation.
 - A child who has been in the knee chest position for more than 30 seconds may have a dilated anal opening.
 - Digital examination of the anus most often is the method that can elucidate if there has been acute trauma.
 - Venous congestion is a normal finding on anal examination.
18. Which is a true statement regarding the role of the pediatrician in child sexual abuse evaluations?
- Each state has its own standards with regard to when a pediatrician must report a suspected case.
 - Pediatricians are advised to keep minimally detailed documentation in reported cases because, in court, information may be used to discount the doctor's findings.
 - The more explicit the record keeping the less likely a physician may have to testify in civil court where the legal standard for evidence is "preponderance of evidence."
 - If a pediatrician is concerned that a child is sexually abused based upon a behavioral change e.g. new onset enuresis in a 6 year old, or a nonspecific physical finding e.g. labial adhesion or vaginal rash, he or she is mandated to report their concern to regional authorities.
 - Referral to a child advocacy center or regional multidisciplinary teams should only occur when there is sufficient physical evidence to support child sexual abuse.

ANSWERS

1. d. The next appropriate step would be to interview the caretaker and child separately to elucidate if there are any concerns for sexual abuse in order aid you in your evaluation. Although at this point there are multiple etiologies to consider that can cause a vaginal discharge in this age group, the topic of sexual abuse must be explored with both the child and parent. It is in the purview of the pediatrician to do an initial screening with regard to the possibility of child sexual abuse before referral to a child advocacy center or specialists in the area of child sexual abuse. Vulvovaginitis is not usually blood tinged or malodorous, and topical treatment without examination is inappropriate.
2. e. In most of the cases of labial adhesions vaginal bleeding is not primary presentation.
3. a. Genital examination of the prepubertal child should have the caretaker in the room in most circumstances to provide support for the patient. Examination rarely should require sedation, and all attempts prior to the examination to explain the examination will often help the child to be cooperative. The physician should ensure that he or she can visualize the inner thighs, the labia majora and minora, clitoris, urethra and periurethral tissues, the hymen and the hymenal opening, the fossa navicularis and the posterior forchette. (Figure 107-1) Often it is advised that two positions are used to visualize all of the structures mentioned, both the supine frog leg position and the knee chest prone position work well. Examining the child prone in the knee-chest position greatly enhances the examiner's ability to visualize the posterior hymenal rim. A speculum exam is not indicated on a prepubertal child even if a foreign body is suspected.
4. a. 10% of confirmed cases of maltreatment in children are due to sexual abuse. Perinatal transmission of chlamydia and HPV, if detected in the newborn period, are not indicative of sexual abuse. The definition of child sexual abuse is not based upon penetration; it is operationally and developmentally defined. When children are engaged in sexual activities they don't understand, they are developmentally not prepared and they cannot give consent. These acts violate social taboos, and are proscribed by society's, not parental, standards.
5. b. A fimbriated hymen is a normal variant. The majority of children who are sexually abused have a normal examination without sign of trauma, scarring or obvious bleeding and/or discharge. Our current examination standards do not focus on the diameter of the hymenal opening but on findings specific to the hymenal ring and surrounding structures. Straddle injuries rarely involve the hymen but usually more lateral anatomic structures.
6. e. All girls are born with a hymen; congenital absence of the hymen has not been described.
7. c. Any child with a malodorous or blood-tinged discharge deserves a thorough examination. One approach could be to culture this child and if the cultures are negative to perform an exam under anesthesia. Another approach is a direct referral for performance of this procedure depending on your clinical suspicion.

8. b. Urethral prolapse most often occurs in African-American females. A common presentation is vaginal bleeding or spotting. Most of the time urethral prolapse is not associated with tenderness on examination and can be conservatively managed if the prolapsed area is non-necrotic with sitz baths and estrogen cream.
9. a. This child most likely has the syndrome of recurrent abdominal pain. The pain is very real to the patient. Criteria for diagnosis include recurrent pain for more than three months, usually female gender, age from 4-8 years, normal physical examination, growth and laboratory testing. The physician should explore with the family detection of stressors that could underlie this entity. Treatment is supportive and, obviously, trying to modify any perceived stressors.
10. e. The patient described in the vignette presents with a clinical picture for acute Pelvic Inflammatory Disease and, possibly, perihepatitis, the Fitz-Hugh Curtis Syndrome. Bilateral lower abdominal pain and tenderness on examination, cervical motion tenderness and adnexal tenderness may be present. There is usually a history of fever, and continuous abdominal pain. Very few patients with PID have unilateral tenderness. Such a finding would warrant consideration of other etiologies such as appendicitis, ectopic pregnancy or urinary tract disease. In general, symptomatic *N. gonorrhoeae* infection is more acute and severe and is usually associated with menses.
11. b. Liver function tests in Fitz-Hugh Curtis syndrome, a complication of acute PID, are usually normal. The risk of tubal closure and, therefore, ectopic pregnancy is significant. With repeated episodes of PID, the risk of infertility increases.
12. a. Nonspecific vulvovaginitis accounts for the majority of vulvovaginitis seen in prepubertal girls. It is related to poor hygiene but also due to the decreased estrogen level. The process is more atrophic in nature and the vulvar skin is more easily traumatized. Normal flora such as *Staphylococcus epidermitis*, alpha-hemolytic streptococci, diphtheroids, lactobacilli, and gram-negative bacteria may be isolated. Non-specific treatment involving good hygiene, protective ointments, no harsh soaps and sitz baths is initially tried to eradicate symptoms. Specific respiratory and enteric pathogens can cause vulvovaginitis (e.g. *Streptococcus pyogenes*, *S. pneumoniae*, *Staphylococcus aureus* and *Shigella spp*). *Candida spp* are unusual unless there has been some predisposing condition e.g. recent antibiotic therapy.
13. d. The presence of condyloma acuminata, anogenital warts, is suspicious for child sexual abuse if they were not perinatally transmitted. The classic lesions are irregular multidigitated wart like growths. Perinatal maternal-infant transmission has been documented but the time to presentation is variable, with reports up to around 20 months of age. The mode of transmission of HPV, the wart virus, is also unclear and the variable incubation period and sub-clinical presentation make it difficult to identify the contact source. Any child with the presentation of HPV infection warrants an in-depth family history and assessment for any risk of child-sexual abuse. A higher suspicion for

child- sexual abuse is warranted in children who present with new warts when older than two years of age.

14. c. Straddle injuries to the genital region of children are common and rarely involve penetration. In accidental straddle injuries there is often a history of a fall onto an object to cause a crush injury. Characteristically the injuries are localized to the labia minor and majora and rarely involve the hymenal area or posterior aspect of the forchette. Ecchymoses on the scrotum or a minor laceration to the penis or scrotum are associated injuries in boys. Straddle injuries are rare in non-ambulatory children, rarely involve major trauma and are rarely associated with coexisting anal trauma.
15. b. If there is no urinary obstruction, in addition to ongoing monitoring by the physician, topical estrogen treatment is an option.
16. e. Group A beta-hemolytic streptococci can cause perianal disease, vaginitis and balanitis. The diagnosis is made by history and culture of the throat and rectum. The culture request must indicate that GAS is suspected so that appropriate culture techniques are used. The pain, itching, and blood tinged stool are typical; there may also be a family history of recent streptococcal illness that could be the source of the infective organism. Nasopharyngeal carriers and autoinoculation are postulated as the mechanism by which the disease occurs. A throat culture in one study was positive 60% of the time in this type of scenario.
17. d. Venous congestion is a normal finding on anal examination. Stool in the anal vault, a history of encopresis, and a child who sits in the knee-chest position for a period of time will all have normal anal dilatation. A digital examination in a child who has been anally sexually abused often does not reveal any abnormal findings.
18. c. In the United States all pediatricians are required by law to report suspected cases of child sexual abuse. It is highly advised that pediatricians keep detailed records of their evaluation to assist the investigational agencies and for purposes of recreating findings. The more detailed the report, the more likely that a doctor may not have to testify in civil court. Pediatricians should report cases where they have an intermediate or high index of suspicion for child sexual abuse; consultation with regional experts is always encouraged.

SUGGESTED READING

Guidelines for the Evaluation of Sexual Abuse of Children: Subject Review, American Academy of Pediatrics, Committee on Child Abuse and Neglect, Pediatrics Vol. 103, No. 1 January 1999.

Reece RM, Ludwig S, et. al.: Child Abuse: *Medical Diagnosis and Management*. Philadelphia, Lippincott Williams and Wilkins, 2001.

Vandeven AM and Emans SJ: Vulvovaginitis in the Child and Adolescent. *Pediatrics in Review* 1993;14:141