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The Physical Examination in Pediatric and Adolescent Patients

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Abstract: The initial evaluation and examination of both the pediatric and adolescent patients provides the opportunity for the clinician to establish a relationship that will ensure the successful outcome of the visit. In the younger age group, cooperation of the child before performing an examination should be the focus at the first encounter. This cooperation will enable proper positioning and a systematic approach to examination and documentation of findings. Although the adolescent patients may be older and better able to understand the specifics of the examination, these patients present additional challenges for the examining practitioner.
Key words: pediatric, adolescent, physical examination, Tanner staging

Introduction

To become more familiar with the gynecologic pathology encountered in the pediatric and adolescent patient, proper technique for the performance of the physical examination and knowledge of normal anatomy become an essential part of patient evaluation. When meeting the patient for the first time, it is appropriate to explain to the patient and parents that the examination of the external genitalia, although not always required, is an integral part of the routine physical examination. In some cases, the pediatric assessment of the internal genitalia is indicated (Table 1). The opportunity for the clinician to establish an adequate relationship with their patient using non-traumatizing techniques during an office examination of a child or adolescent allows for the early diagnosis of common conditions found in this age group. Key components of any examination should be covered to the extent allowed by the patient, and in no way should the examination be forced upon the patient either by the physician or by the parent, as it may prevent successful future examinations in these patients.

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TABLE 1. Indications for Genital Examination in Pediatric Patient

Vaginal bleeding
Vaginal discharge
Vulvar trauma
Vulvovaginal cysts
High suspicion for solid masses
Suspicion for congenital anomalies
History or suspicion of sexual abuse

The Prepubertal Female

Cooperation of the child before performing an examination in this age group should be the focus at the first encounter. Allowing the child to have a sense of control and explaining what the examination will entail can be ways to enlist their cooperation and perform the examination with less difficulty. An effort must be made to prevent multiple examinations in a short period of time, as this may also play a role in the cooperation of the patient.

When approaching a prepubertal patient with a suspected gynecologic problem, as with any other condition, the physical examination should include a full assessment of other organ systems. Initiating the examination with an overall inspection will allow the young patient to feel more comfortable in the examination room setting and provide the opportunity to assess body habitus, hygiene, and presence of skin disorders. Proper documentation and review of the height and weight percentiles and breast development will contribute to the overall assessment of the child. The genitalia may be examined and should probably be carried out at the end of the examination once the patient is comfortable with the examiner.

Patient Positioning for the Examination

A number of positions have been described to allow adequate visualization of the area, and the most useful will be the one that facilitates the goal at hand; positioning becomes a key component to a successful pediatric gynecologic assessment with the age of the patient playing a role. Some times, more than 1 position may be required to have adequate visualization of the genitalia. The frog leg position is the most commonly used position in the younger patient and allows for the patient to have a direct view of the examiner and herself (Fig. 1). Using stirrups and the lithotomy position may assist in better visualization of the perineal area as a child grows older. Asking for mother's assistance with the examination can prove useful and placing her daughter between her legs may be of assistance. Combining the use of low-power magnification as with an otoscope or ophthalmoscope with the knee-chest position, often times allows for visualization of the lower and upper vagina.[1] This position may be especially helpful in those patients where a vaginal discharge or a foreign body may be a complaint. Some patients may not cooperate during the examination and an optimal evaluation of the genitalia is not possible despite our best efforts. In these patients, it is important to consider the acuity of the complaint and the clinical consequence of the pathology. This will allow a decision regarding a multivisit examination or if an examination under anesthesia is warranted.

When evaluating the newborn, attention must be provided to key characteristics of the external genitalia, which are a result of maternal estrogen stimulation. Becoming familiar with these characteristics is important for the practitioner when called upon to evaluate a newborn. These findings should not be considered abnormal and tend to regress in 6 to 8 weeks. The presence of vulvar edema, vaginal discharge, and breast enlargement are common in this age group; the hymen seems thick and may protrude to the

FIGURE 1. Five-year old demonstrating the supine "frog leg" position. With permission from McCann JJ, Kerns DL. *The Anatomy of Child and Adolescent Sexual Abuse: A CD-ROM Atlas/Reference*. St Louis, MO: InterCorp Inc; 1999.

introitus. This particular finding may persist for up to 2 years.[2]

The nonestrogenized nature of the hymeneal and vulvar tissue makes it sensitive to touch and easily torn with examination in the prepubertal female. Care should be taken to not cause trauma or pain in the area, as it will promptly make the remainder of the examination difficult to complete. The use of gentle lateral and downward traction improves visualization and does not disrupt the integrity of the normal prepubertal genitalia (Fig. 2). The description of vaginal notches, ridges, anal erythema, and skin tags are common and should not be confused with prior sexual abuse. Location of hymeneal notches and ridges may be important, as those present between the 5 and 7-o'clock positions may be related to prior abuse and may require further questioning.[3]

In some patients, the presenting symptom requires an evaluation of the internal pelvic organs. This task may prove difficult and should be attempted only in the cooperative patient to prevent trauma. This part of the examination is particularly important in cases of suspected vaginal foreign body, abnormal pubertal development, or lower abdominal pain in which the differential diagnosis includes a pelvic mass. The use of a rectoabdominal examination may assist in the palpation of the internal organs and possible pelvic masses.

To provide an adequate and consistent description of the examination, proper nomenclature of the female genitalia should be used. The use of a clock face method to delineate location of any abnormal findings may be the most helpful way of recording any abnormalities in the examination. A systematic approach describing each structure, including inspection and palpation characteristics, should be included. Components of such an examination include the assessment of pubertal development (Tanner stage), visualization and measurement of the clitoris, description of the labia majora and minora including any discolorations, pigmentations, or lesions. The urethra and the urethral meatus should also be

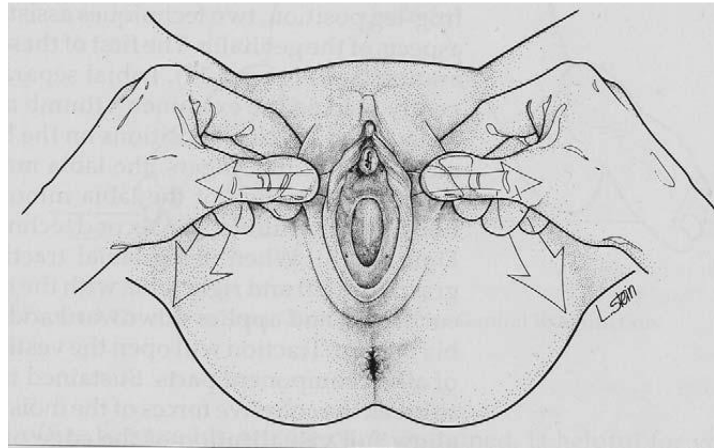

FIGURE 2. Examples of the technique of labial separation by lateral and downward traction for viewing the hymen of a prepubertal girl. With permission from the North American Society for Pediatric and Adolescent Gynecology (NASPAG) Yordan EF. The *PediGYN Teaching Slide Set. Birminghan, AL.*

reported. A proper description of the hymen, including type or shape, estrogen status, and abnormalities of configuration should be detailed. The prepubertal hymen is thin, red, and unestrogenized. At puberty, with estrogenization, it thickens, becomes pale pink, and is often more redundant in its configuration. Common normal appearances and variants are shown in Figures 3 and 4. Other findings including presence of hemangiomas or other vulvovaginal lesions should also be described. The presence and appearance of the cervix, if visualized in the knee-chest position, is also important to document.

Specimen Collection

The hymeneal aperture is small in this age group and the use of traditional cotton swabs creates discomfort because of their larger size. Certain patients will present with symptoms that require the collection of vaginal secretion samples. When cultures are indicated, the use of moistened small male urethral Dacron swabs may be used. It may also traumatize the surrounding tissue creating lesions that are not pathologic in nature, but may confuse the examining practitioner. Another helpful method is a catheter-within-a-catheter technique in which a 4-inch intravenous catheter is inserted into the proximal end of a No. 12 red rubber bladder catheter. This apparatus is then connected to a syringe with fluid and passed carefully into the vagina. The fluid is then inserted and aspirated multiple times to allow a good mixture of secretions.[4]

The presence of a foreign body in the vagina is a common presenting problem encountered in patients with a vaginal discharge. The use of a pediatric feeding tube connected to a 20-mL syringe may allow irrigation of the contents of the vagina and determine the nature of the foreign object, negating the use of speculums in these prepubertal patients in whom the small aperture of the hymen will not allow it and would be injured with instrumentation by a speculum.

Documenting the Examination

When documenting prepubertal girls' genital examinations, care should be undertaken to merely describe findings and

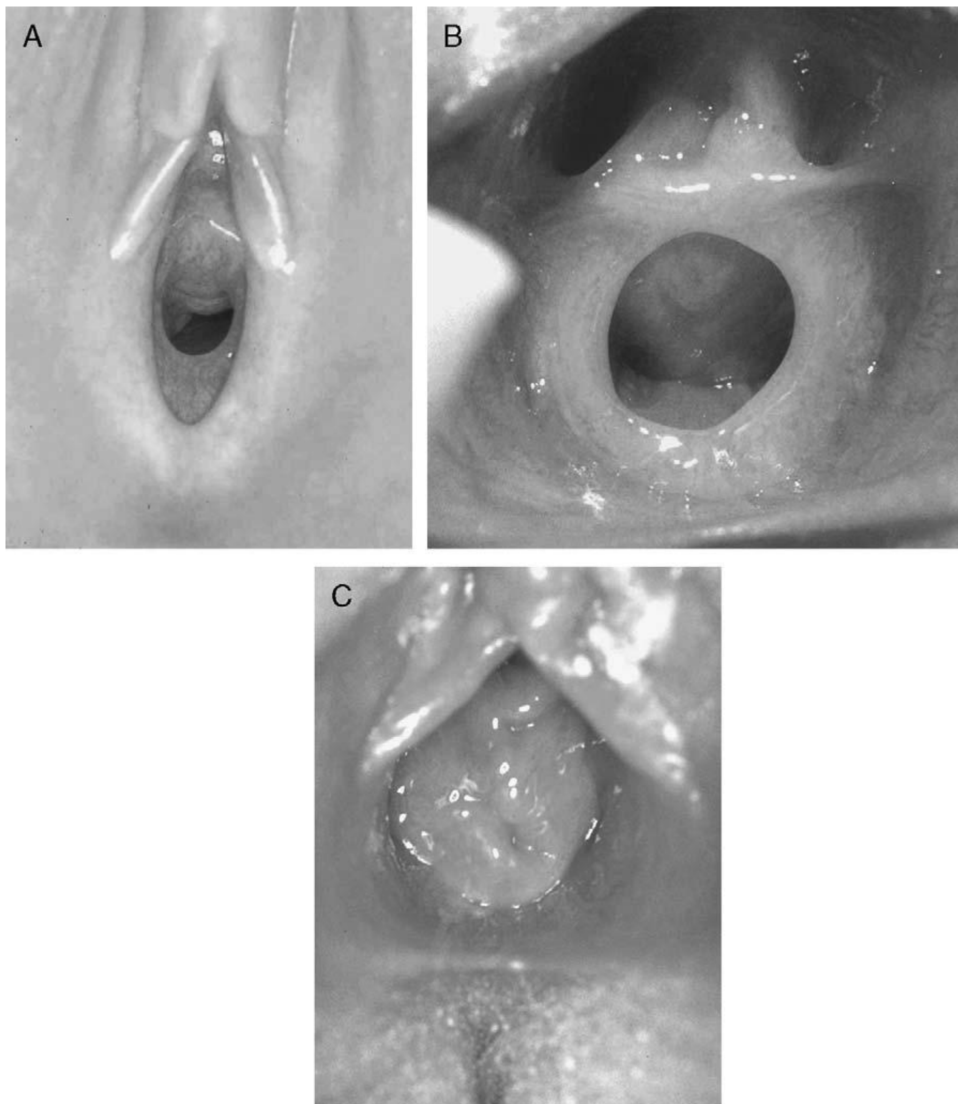

FIGURE 3. Types of hymens: crescentic (A), annular (B), and redundant (C). With permission from Perlman SE, Nakajima ST, Hertweck SP. *Clinical Protocols in Pediatric and Adolescent Gynecology*. London: Parthenon Publishing Group/Informa Health Care, 2004.

variations, and not to make diagnostic descriptions in the recording of the examination. Conclusions such as "an interrupted hymen suggestive of sexual abuse is seen" should be placed in the impression and plan portion of the documentation and not in the description of the findings. This will allow for a better interpersonal consistency when a second provider reviews and documents findings. Every effort should be made to be descriptive and not to pass judgment during the examination.

In some instances, the use of radiologic studies is necessary to complete the evaluation of these patients. To be able to interpret the findings of such studies, knowledge of the normal appearance of the ovaries and uterus is important and may play a role in evaluation. In the year 1984, Orsini and co-authors[5] described the normal ultrasonographic appearance

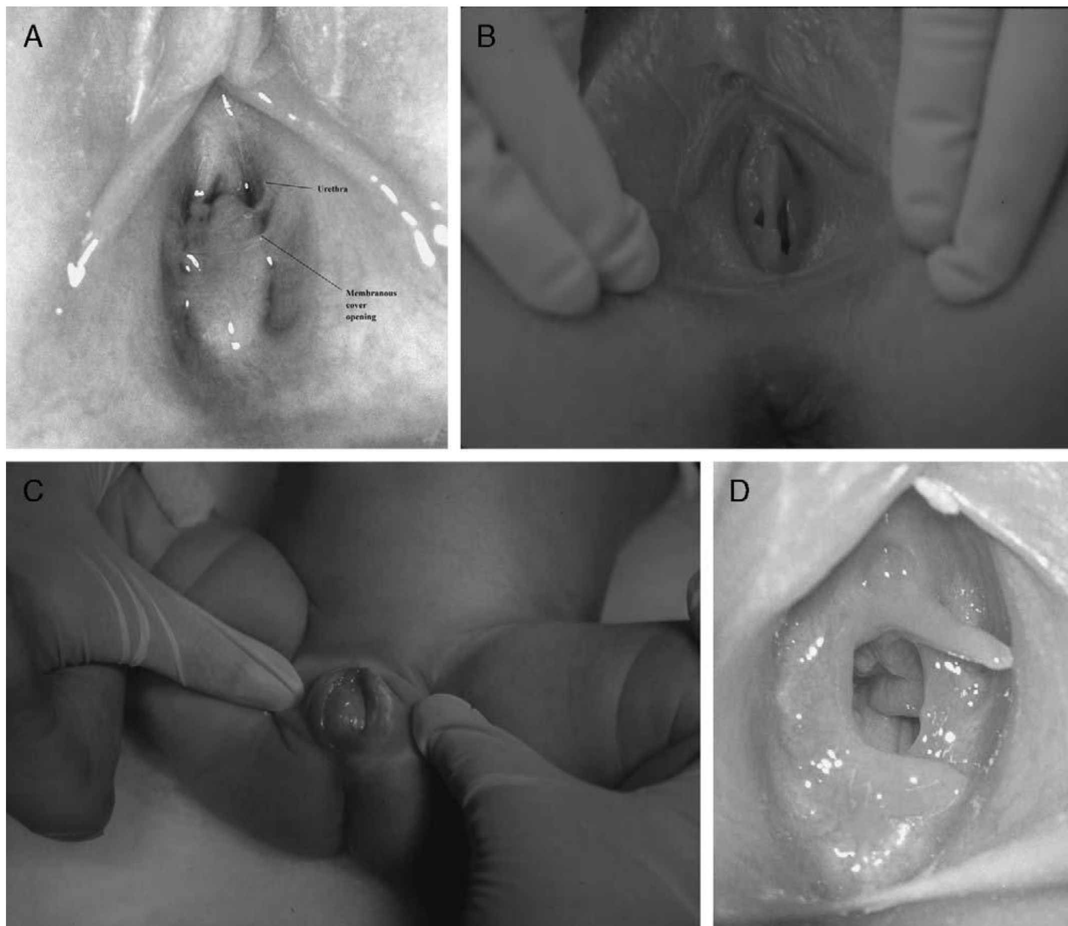

FIGURE 4. Variations in hymens: microperforate (A), septated (B), imperforate (C), and hymeneal tags (D). With permission from Perlman SE, Nakajima ST, Hertweck SP. *Clinical Protocols in Pediatric and Adolescent Gynecology*. London: Parthenon Publishing Group/Informa Health Care; 2004 and McCann JJ, Kerns DL. *The Anatomy of Child and Adolescent Sexual Abuse: A CD-ROM Atlas/Reference*. St Louis, MO: InterCorp Inc; 1999.

of the ovaries and uterus at different ages. Ultrasound is by far the most used method of evaluation of the female genitalia and is no different at this age. Their findings showed that most patients before they reach puberty will show an ovarian volume of 1 cm^3 or less and a uterine volume between 1 and 4 cm^3.

Adolescent Gynecologic Examination

Although the adolescent patient may be older and better able to understand the specifics of the examination, these patients present another challenge for the examining practitioner. The extreme variation in their psychosocial and sexual development contributes to the challenge. Teens develop at varying rates; while some are menarcheal at 10, others may just be starting their pubertal development at 13, therefore, careful interviewing and counseling should precede an examination. In these patients, the self-conscience about their own body may make the examination even more difficult to perform. Although some teens may like to know and see everything that will

happen, some would prefer not to look. These preferences should be taken into account to make the experience as minimally traumatizing as possible. The use of educational videos that explain the examination process and the common reasons why they are carried out may be of benefit when interacting with the patient. Delaying the genital examination, even with sexually active teens, may prevent them from having reservations about their examiner, and allow the rapport to be established easier.

As in other patients, preventive health care should be a part of the examination in this age group. As recommended by the American College of Obstetricians and Gynecologists (ACOG), the initial visit to the obstetrician gynecologist should occur between the ages of 13 and 15 years.[6] During this visit, important components of general health such as immunizations (including the Human Papilloma Virus vaccine), risk prevention, screening for tobacco and substance abuse, and depression and eating disorders including overweight should be completed. Opportunities to interact with the adolescent will present during these vaccination visits, which allows for the practitioner to improve its relationship with the parents and teens as other reproductive needs arise.

This examination does not necessarily need to include a pelvic examination. Table 2 lists common indications for a pelvic examination in the adolescent. After the initial gynecologic visit in sexually active teens, semiannual/annual visits should be scheduled thereafter. Sexually active teens should obtain sexually transmitted infections (STI) screening with each new sexual partner. With the development of urine and vaginal swab testing for gonorrhea and chlamydia, STI screening has become easier without the need for a pelvic examination. In patients who are not sexually active, a visit in each stage of adolescence may be preferred (early adolescence ages 13 to 15 y, middle adolescence ages 15 to 17 y, and late adolescence ages 17 to 19 y).[6–8]

TABLE 2. Common Indications for Pelvic Examination in the Adolescent

Indications
Precocious puberty
Delayed puberty
Pelvic pain
Suspicion of intra-abdominal disease
Dysfunctional vaginal bleeding
Undiagnosed vaginal discharge
History of vaginal intercourse

Adolescents are primarily interested in confidentiality from a consistent provider who will ask the questions that they would not answer otherwise (eg, STIs, contraception, acne, weight issues, menses, how their bodies work, and sexual behaviors like kissing, petting, and intercourse). To facilitate obtaining adequate screening for such issues and other risk taking behaviors, ACOG developed the Tool Kit for Teen Care, which contains a confidential screening questionnaire to be used with each visit and an adolescent specific history and physical examination record.[9]

After the initial history form is completed with both parent and teen together, taking the sensitive/confidential part of the history with the teen without the presence of the parent (eg, sexual history, dating, alcohol, drug, and substance use). With sensitive questions, it may be helpful to give a wide range of acceptable answers. For example, "some teens can talk about sex with their parents, others can not. How do you feel?" You may also create a context for questions as in "a lot of girls your age… how do you feel about that?" Using teen friendly language and easy to understand simple questions may improve the collection of information. Emphasizing to the parents that the information will be kept confidential and that open communication is encouraged between them should be stated. Whenever

possible, it is important to meet initially with the teen and her parents/guardian together to explain the concept of confidentiality and privacy. Review of local laws regarding the extent of available confidential services is necessary so as to not violate the parents and the teen's rights to information access and privacy.

Remember to begin with less sensitive issues like safety (eg, seat belt use) before affect and sexuality issues. Do not assume the patient understands the question and be specific when asking (ie, instead of "are you sexually active?" ask "have you ever had sex? Do you know what sex is? Do you know there are different kinds of sex?"). An in-depth sexual history should be an important component of the initial gynecologic visit. Tools for this purpose are available through a number of professional societies including ACOG, the North American Society for Pediatric Adolescent Gynecology (NASPAG), and the Society for Adolescent Medicine (SAM).

When indicated, before completing the initial gynecologic examination, take time to explain the process of the examination. In all patients, monitoring of height, weight, blood pressure, and body mass index should be performed. Examination of the neck (including a thyroid and lymph node assessment), evaluation of skin, and breast development should precede the pelvic examination. The external genitalia should be visualized, if allowed, in all patients that present for preventive care. This will allow determining any genital anomalies in this age group and making it the first step toward a pelvic examination. Patients may choose to delay their pelvic examination up to 3 years after the initiation of intercourse, although care should be taken to counsel them about the consequences of not detecting abnormalities in the female genitalia. Pap testing is recommended within 3 years of the onset of sexual activity. Asymptomatic patients who are not sexually active may delay their initial cervical cancer screening up to the age of 21 years but may still need a pelvic examination.[7] Annual pap testing should be considered in these patients beginning with the initial visit and in those patients with multiple partners, immune deficient conditions, and in whom follow-up is unlikely.

Proper equipment for this age group should be available. A Huffman (1/2 inch wide × 4 inch long) or Pederson speculum (7/8 inch wide × 4 inch long) with water-based lubricant may be of help in young patients and those who are not sexually active. The patient's use of tampons before their examination and the presence of menses may facilitate the use of a speculum, as they may be more comfortable with vaginal manipulation.

The use of a finger applying pressure to the perineal area, away from the introitus, allows for lessening or diffusing of the sensation from the examination ("extinction of stimuli") and may be of benefit in those undergoing their first pelvic examination. Once a finger has been placed in this area, the insertion of a speculum may be easier. Adequate visualization of the cervix and vagina can be obtained in these patients using these techniques. Once access to the cervix is obtained, the collection of screening cervical cytology and cultures may be undertaken as indicated. When attempting to palpate the internal organs, the use of a single-digit bimanual or rectovaginal examination should be attempted. The approach used will depend on the patients' preference, tolerance, and sexual history and also the pathology suspected.

All adolescents should be reassured that the examination, although uncomfortable, is not painful, and will not alter their anatomy. This may reassure those who may believe that the examination will alter their "virginity."

After the examination, it is helpful to meet again with the family and the patient together to explain the examination

findings and to further plan management. In the sexually active teen, if confidentiality is a concern, first discuss findings with the patient alone while in the examination room. Make a plan together about how to discuss with the parent/guardian before meeting with the family together. Ensure that the adolescent assumes the role of decision making and help to empower her to take charge of her own health care with her parents and your guidance and assistance. Encourage the patient to allow you to be the liaison between her and the family, stressing the benefits of informing everyone of her health care needs and the importance of communication; but overall, keep confidentiality consistent with your teen's desire.

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