

Menstrual Dysfunction in Teens

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Abstract

The first menstruation marks the moment in which a girl enters a completely new period of life and transforms into a woman biologically capable of achieving pregnancy and childbirth. By the time of maturation, puberty, in the girls between the 8th and 13th, it is coming to the so-called axial maturity - hypothalamus-pituitary-ovary. This period is often recognized by intense physical changes, i.e. by the development of the so-called secondary bodily traits - growth, body-shaped changes in girls, breast growth, hair growth on the vulva, and hair growth on axillary pits along with the first menstruation - menarche. The menstrual cycle includes the essence of women's reproductive life - the ability to achieve pregnancy and childbirth.

Keywords: Adolescence, Girl, Health, Dysfunction

Introduction

The adolescent patient is especially sensitive to long waits in crowded clinics at distances from home and to perfunctory disinterested inquiries, frequent changes of the staff and lack of privacy [1]. Such conditions will deter her from continuing care. Whenever possible there should be separate facilities for adolescent health care delivered by a staff sympathetic to the adolescent.

The usual problems prompting gynecologic care of the adolescent include: retarded or accelerated sexual development, menstrual dysfunction, pelvic pain, vaginitis or vulvitis, pregnancy, contraception, sexual counseling or evaluation of possible gynecologic neoplasia. Each of these possibilities raises concerns about underlying disease, an abnormality in female development, or sexual malfunction. These concerns are in addition to a basic fear of intrusion of privacy and anxiety over the pain associated with an examination.

The patient is for the first time sharing her feelings with an adult who may or may not represent father or mother. Most adolescents however are forthright, honest, and no manipulative. However, they still act as other patients who have perceptions of what the physician wants in the way of answers. Therefore, in interviewing the adolescent, one must be indirect. In talking to the adolescent patient, it is recommended that one not use their language which is for their peers. Questioning should be in simple lay language. If one uses words that are of the adolescent style, the patient will become uncomfortable and feel "put down."

In examining an adolescent for gynecologic purposes, it is important that the patient be placed at ease, the surroundings in which the examination is performed be pleasant and comfortable and that

the examination is done in such a manner that it becomes an educational experience for the patient. In doing this and in preparing the adolescent for a gynecologic examination, the physician should give an explanation of each step of the examination. It is not always necessary to perform a traditional gynecologic examination. This is especially true if the girl is not sexually active or has no specific complaints related to the internal genitalia. A bimanual recto abdominal examination often suffices. With experience, this can be revealing with regard to palpation of the uterus and adnexa.

Adolescence

Early adolescence is marked by the onset of pubertal biological processes that will culminate in anatomical sexual maturity and the ability to produce mature gametes [2]. There is a considerable body of knowledge about the biological and environmental factors associated with onset of puberty and its regulation by the pituitary-hypothalamic axis, as well as biosocial influences. In Western culture, the average age at thelarche (Tanner stage 2) is 10.4 years for Caucasian girls, 9.5 years for African-American girls and 9.8 years for Mexican-American girls. Caucasian boys in the West begin puberty, as marked by Tanner 2 stage penile growth and pubic hair distribution, at 12.0 years, African-American boys at 11.2 years and Mexican-American boys at 12.3 years. Typically, girls begin to menstruate by age 12 or 13, although there is a wide range of normal. Most girls will begin to menstruate by age 16 and most boys will ejaculate by age 15. It is important to emphasize the wide range of normal for these experiences among individual children and adolescents. These individual differences add to the complexity of understanding typical development and thus detecting statistical and/or clinical deviance.

In the sexual repertoire, early adolescents have a working knowledge of sexual intercourse, although they may not yet have experienced it. They also generally have some knowledge, at least academic,

about contraception and sexually transmitted diseases. With the onset of puberty, sexual fantasy plays an increasingly important role in sexual expression. Recalled onset of first sexual fantasy is generally between 11 and 13 years old, with men recalling earlier onset of fantasy than women.

Masturbation continues as the predominant sexual outlet in early and middle adolescence, although a significant number of adolescents engage in sexual intercourse for the first time at about age 12. Approximately 43% males and 37% females in this developmental stage masturbate.

Normal Menstrual Cycle

For cyclic menses to occur there must be a coordinated sequence of events beginning with the hypothalamic secretion of gonadotropin-releasing hormone (GnRH) [3]. In response to GnRH, the pituitary secretes follicle-stimulating hormone (FSH) and luteinizing hormone (LH) and the ovaries secrete estrogen, progesterone, active and inhibits. Ultimately, the endometrium of the uterus responds to estrogen and progesterone with stimulation and withdrawal, culminating in menses.

The menstrual cycle is governed by positive and negative feedback. In the beginning of a cycle, low levels of estradiol perpetuate a positive feedback mechanism and subsequently stimulate FSH and LH secretion. At higher levels, estradiol and progesterone create a negative feedback affect and suppress FSH and LH thereby preventing further follicular recruitment. Although the gonadotropins act synergistically, FSH primarily affects follicular growth and LH stimulates ovarian steroid biosynthesis.

A menstrual cycle is defined as the time from the first day of flow to the first day of the next period. Based on current understanding, the menstrual cycle may be described by the response of the pituitary, ovary and endometrium.

Ovarian Dysfunction

The causes of ovarian dysfunction in the adolescent are fascinating and varied [2]. They may range from the mild oligomenorrhea frequently encountered during the first 1-2 postmenarchal years to complete absence of pubertal development and menstrual function characteristic of the many forms of gonadal dysgenesis. Ovarian dysfunction in the adolescent encompasses the fairly common disorders leading to secondary amenorrhea as well as conditions, such as gonadal dysgenesis, structural anomalies of the female genital tract, and male pseudohermaphroditism, which lead to primary amenorrhea. A brief review of normal sexual differentiation and pubertal development is helpful before considering the numerous ways in which ovarian function may go awry.

Between the ages of 8 and 10 years, gonadotropin levels gradually start to rise. The rise is felt to occur as the result of a decreased sensitivity of the hypothalamus and pituitary to the negative feedback effect of the sex steroids. This results in an increased secretion of GnRH, FSH, and LH. The gonadotropins, in turn, then stimulate further estrogen production by the ovary. Ultimately, the ovarian sex steroids and the hypothalamic-pituitary axis achieve a new set point of the negative feedback mechanism. It has been estimated that the adult negative feedback system is 1/6th-1/15th less sensitive than the prepubertal system. It is interesting to note that young girls with gonadal dysgenesis also have a rise in gonadotropins

beginning around age 8, thus indicating that an intact gonad is not essential to this prepubertal gonadotropin rise. A unique alteration in the secretory pattern of gonadotropins is another characteristic of the prepubertal years. Marked enhancement of LH secretion occurs during sleep in the late prepubertal and pubertal years. This pattern also occurs in children with gonadal dysgenesis. One of the last steps in the maturation of the hypothalamic-pituitary-ovarian axis is the acquisition of positive feedback control by estrogen on gonadotropin release. This is essential for the normal midcycle surge of LH necessary for ovulation. In pre- and early pubertal girls, not only is the ovary unable to produce sufficient estrogen to trigger the LH surge, but it has also been demonstrated that the pituitary lacks the ability to respond to estrogen in a positive fashion.

The development of the secondary sex characteristics in young women is dependent upon secretion of estrogen by the ovaries and androgens produced by both the ovary and adrenals. Estrogens are responsible for breast development, alteration of body contour with increased fat deposition, accelerated linear growth, skeletal maturation, enlargement of the uterus and cervix, endometrial proliferation, alteration of the vaginal mucosa with increased glycogen deposition, lowering of vaginal pH and increased vaginal discharge. Androgens are responsible for the growth of pubic and axillary hair and to a lesser degree for the pubertal growth spurt. The earliest sign that puberty is about to begin is the initiation of breast budding.

Menstrual Dysfunction

Ovarian dysfunction in the adolescent covers a wide spectrum of disorders [4]. These range from mild oligomenorrhea to complete absence of menstruation. The oligomenorrhea exhibited by the adolescent may be a manifestation of an underlying hormonal disorder or rather, may simply be the result of an immature hypothalamic-pituitary-ovarian axis. Absent menstruation or amenorrhea may be further classified as primary or secondary amenorrhea. Secondary amenorrhea implies that the young girl has previously experienced at least one spontaneous menstrual flow and has subsequently developed amenorrhea. The disorders which can cause secondary amenorrhea in the adolescent are the same as those which are responsible for secondary amenorrhea in the older reproductive-aged woman. The adolescent, in addition may manifest primary amenorrhea or failure to initiate menstruation. Disorders leading to primary amenorrhea include all those responsible for secondary amenorrhea and in addition, include a whole host of developmental and anatomic anomalies, which are uniquely responsible for primary amenorrhea.

Menstrual dysfunction may be the result of failure of anyone of the components of the reproductive system. It may be the result of defect within the ovary preventing it from functioning properly. It may also be due to abnormal stimulation of the ovary either by the hypothalamus or pituitary. Finally, the hormonal interrelationships of the reproductive cycle may be perfectly in order, yet there may be an abnormality of the target organ or the outflow tract preventing the normal expression of the cyclic hormonal variation. It is useful to consider the various causes of menstrual dysfunction according to these three separate categories.

At the time of the initial pelvic examination of the adolescent with absent menstruation, several rare, but striking, anomalies of the vagina and lower reproductive tract may be recognized. A

fairly straightforward diagnosis is that of the imperforate hymen. Typically, the patient is an appropriately developed young woman who has complained of cyclic pain for several months duration. On examination there is a blue bulge at the vaginal introitus as a result of accumulation of menstrual blood within the vagina. Occasionally, the uterus may enlarge as a result of the formation of a hematometra. This condition is easily correctable by a simple surgical procedure.

Investigations of disorders of the menstrual cycle are very personal and when carried out in adolescence can involve health - care professionals input and parental involvement. In adults, menstrual cycle disorders affect sexual, interpersonal relationships, social and educational or work environments [5]. Adolescence is challenging for even the easiest-going of teenagers, but having menstrual-cycle-related conditions during an already taxing time on identity may pose extra challenges. Having a condition requires expert communication and reassurance. Cultural taboos, language barriers and parental or family history of difficulties, such as lack of communication, abuse or separation, may all play a role in the effectiveness of health - care professional - patient consultations. Ethically and morally consistent care including trust, consent, chaperoning, privacy and the avoidance of pain during investigations must all be respected. Aspects of symptom reporting need to be further investigated to weed out inconsistencies in the original complaint and reasons for referral and treatment, which is either not serious enough with many women suffering without receiving optimal treatment, or too serious, with hysterectomies leaving women reproductively compromised. Other conditions of the menstrual cycle include premenstrual dysphoria or premenstrual syndrome.

Sex Education

For most women, sexual activity means much more than potential or actual pregnancy [6]. Women and girls menstruate more months than they do not and most of them spend more time successfully avoiding pregnancy (not “failing to conceive”) than they do pregnant; most men spend more time experiencing their penises as sites of sexual arousal and pleasure than they do relying on their penises to facilitate conception with a woman partner.

Sex education’s formal and hidden lessons help to construct a picture of sex and sexuality as heterosexual, procreative, white, able-bodied and conventionally gendered. And because this construction happens under the rubric of “natural and factual,” the hidden lessons may be especially difficult to demystify; they are, after all, natural. The absence of a clitoris in a scientific, authoritative of the anatomical image is difficult to dispute. The absence of brown-skinned bodies may seem routine. When girls hear repeatedly that they will suffer significant emotional struggles attributable to hormonal changes and premenstrual syndrome, crying, moodiness and volatility may seem inevitable. Boys, however, may leave sex education having heard nothing about the mood changes they might experience and allowing for no emotional vulnerability in their experience of puberty and sexuality. Constructed though these alleged gender differences may be, the gilded wrapping of nature and facts may help them appear normal and inevitable. That appearance of stability helps to obscure sex education’s erasures and constructions.

Today’s teens are coming of age in a rapidly changing world in which sexual behaviors are in flux while norm changes lag behind [7]. Compared to their parents and grandparents, many face bleaker economic prospects and education beyond high school is more

important for making a living wage. These educational pressures, combined with greatly increased technology use, are changing teens’ leisure time and social interactions. As the typical ages for getting married and having children continue to rise into the late 20s and more young people enroll in college, many teens now anticipate having an extended period of “emerging adulthood”- an “age of independence” from their parents’ and home communities’ social control, before settling into adult roles. This experience depends a lot on social class and race, but for more privileged teens it means that high school is no longer the time to find a mate and get ready to start full-time work. With public attitudes shifting toward acceptance of gay and lesbian relationships, today’s teens are sometimes less constrained by heteronormative sexuality than their parents were. For some teens, “hooking up” is an available alternative to dating or long- term relationships and a hookup’s ambivalent meaning (it can be anything from a kiss to sexual intercourse) gives them some flexibility to keep their casual sexual activities private. Newer contraceptive options, such as hormone shots and today’s intrauterine devices (IUDs), provide more reliable protection from pregnancy and greater convenience, but their expense may mean getting parents’ permission or not being able to use them. The combination of these social trends means that many teens are under increasing pressure to do everything they can to ensure a bright future and to avoid serious relationships in high school, instead waiting many years to marry. At the same time, expectations of their sexual behavior are strict and their sexual options are broadening, incentivizing them to keep their sexual behavior secret. This is a recipe for complex norms, social control and negotiation strategies.

Conclusion

Amenorrhea is the absence of menstruation. It usually differ primary, when menstruation did not appear and secondary amenorrhea, when the bleeding was initially correct in the beginning and later bleeding be less frequent or completely absent. Amenorrhea is considered to occur if menstruation skips at least three cycles. The girl who does not receive the menstrual period until the 16th year should be submitted for review for doubt on the primary amenorrhea. Rare and weak menstrual cycles (oligomenores) are very common in early puberty and are not reason for concern. At the beginning of menstrual bleeding, cycles are usually not regulated in the first couple of years. Even normal cycles in adult women may vary every month for several days. In some women menstrual bleeding occurs every three weeks, with others every five weeks. The bleeding strength is also different, bleeding may be abundant or poor. Sometimes bleeding may be absent and subsequent bleeding may be abundant, which is most likely the result of a skip ovulation. It is worrying if the cycles take less than 21 days and bleeding more than eight to ten days or cycles vary considerably over a few months. Such cases point to ovulation problems. Adolescents need some time to ovulate and sometimes bleeding even stopped for several months. Every time when bleeding is late, it is necessary to check whether it is pregnancy, although any stressful situation may delay the bleeding. Ovulation disorders are usually caused by very irregular menstruation or frequent skip of menstrual cycles.

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