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CLINICAL ENDOCRINOLOGY



Chapter 8: Normal and Abnormal Sexual Development



Chapter 9: Normal and Abnormal Growth and Pubertal Development



Chapter 10: Amenorrhea



Chapter 11: Chronic Anovulation and the Polycystic Ovary Syndrome



Chapter 12: Hirsutism



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Chapter 17: Menopause Transition and Menopause Hormone Therapy



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Amenorrhea

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Disorders in gynecologic endocrinology can present a challenge to clinicians like that of amenorrhea. The variety, and complexity of diseases and disorders that must be considered can seem daunting and, in many cases, include unfamiliar organ systems. Moreover, some diagnostic possibilities can have serious consequences, and must be recognized and treated effectively. Consequently, other clinicians and experienced clinicians may view the evaluation as too complicated and time-consuming or may doubt their ability to perform or interpret the evaluation. However, when approached logically and systematically, the systematic evaluation of amenorrhea truly is straightforward, requiring thorough history taking and a finite number of laboratory tests and procedures already familiar to almost all clinicians. With few exceptions, an evaluation can be performed quickly and without great expense.

The purpose of this chapter is to provide a systematic approach for the evaluation of amenorrhea that will yield a correct diagnosis, no matter how common or uncommon the cause. Once a diagnosis is established, additional supporting evidence and the assistance of appropriate specialists (e.g., neurosurgeon, internist, endocrinologist, gynecologist) can be obtained, when necessary. However, the majority of women with amenorrhea have relatively simple problems—polycystic ovary syndrome (PCOS), hypothalamic amenorrhea, hyperprolactinemia, and ovarian dysfunction—all of which can be managed easily by the primary care provider after an initial consultation with a specialist.

The diagnostic evaluation described here is not new. With some modifications, it has been applied successfully for several decades. Before describing the evaluation in detail, amenorrhea first must be defined, so as to identify patients who warrant an evaluation. A brief preliminary review of the physiologic mechanisms involved in menstruation (discussed in detail in Chapter 5) provides the framework necessary to understand and follow the logical design of the diagnostic evaluation.

DEFINITION OF AMENORRHEA

The age at which menarche should be expected varies with individual differences in the age at the onset of puberty. The normal pubertal progression is discussed in detail in Chapter 9 and is only briefly summarized here. In general, the first menses should occur within 2–3 years after the initiation of pubertal development. In most young girls (approximately 80%), the first sign of puberty is an acceleration of growth (the growth spurt), followed by breast budding (thelarche) and the appearance of pubic hair (adrenarche). In the remainder (approximately 20%), adrenarche precedes thelarche by a brief interval, but the two events typically are closely linked. Consequently, menarche can occur as early as age 10 (when puberty begins at age 8) and rarely occurs later than age 16 (when puberty begins at age 13). On average, the mean ages for thelarche, adrenarche, and menarche in girls of African ancestry are 6–12 months earlier than in Caucasian girls. Once normal menstrual cycles have been established, menses should occur at regular intervals ranging between 25 and 35 days. The term amenorrhea refers to “absence of menses.” Patients fulfilling any of the following criteria should be evaluated for amenorrhea:

- No menses by age 14 in the absence of growth or development of secondary sexual characteristics
- No menses by age 16 regardless of the presence of normal growth and development of secondary sexual characteristics
- In women who have menstruated previously, no menses for an interval of time equivalent to a total of at least three previous cycles or no menses over a 6-month period

Having affirmed the traditional definition of amenorrhea, it is important to point out that unduly strict adherence to these criteria with a disregard to the overall clinical

