CHAPTER 19

Amenorrhea and Anovulation

When the temperature chart and biopsy show a lack of ovulation, more intensive investigation must be carried out to identify the cause, so that appropriate therapy might be instituted.

ETIOLOGY

Anovulation may result in either amenorrhea or anovulatory cycles. These two variables have a common etiologic background: amenorrhea often is a more advanced stage of anovulation. In amenorrhea, not only is follicle rupture inhibited, but ovarian secretion of estrogen is diminished to where insufficient stimulation of the endometrium never results in bleeding associated with episodic endometrial breakdown. With anovulatory cycles, on the other hand, although follicle rupture and corpus luteum function are inhibited, there still is sufficient ovarian stimulation and estrogen secretion to result in irregular proliferation and breakdown of the endometrium. This results in either grossly irregular uterine bleeding or periodic bleeding in cycles of short duration.

Both amenorrhea and anovulatory bleeding should be considered symptoms of an underlying endocrine imbalance. A normal hypothalamic-pituitary-ovarian-uterine axis must be intact and functioning to result in rhythmic ovarian stimulation, ovulation, and menstruation. Amenorrhea, itself, may result from a number of factors interfering with this process. These include genetic causes, nutritional deficiencies, emotional disturbances, systemic disease, and disturbances of the ovary, pituitary, thyroid, or adrenal glands. Defi-
ciencies, or inhibiting influences arising in any of these area, can block the necessary flow of nervous stimuli or hormones and bring about amenorrhea. The specific disease entities and the basic anatomic areas wherein they might exert their influence are outlined in Fig. 19-1. These areas are not always known and might not always be understood clearly; for example, the mechanism by which obesity brings about amenorrhea remains explained. Nor is it clear whether masculinizing tumors of the ovary or the adrenals, as well as functional adrenal overactivity, produce amenorrhea by inhibition of the hypothalamus and pituitary gland function by a direct effect upon the ovary, or by a combination of all of these. Nevertheless, an attempt to classify amenorrhea helps clinicians understand the problem better as they begin their diagnostic approach.

Anovulatory cycles indicate the presence of functioning endometrium, so the search for causes of anovulation lies in the hypothalamus, pituitary, or ovary, with the same possible factors, genetic, nutritional, emotional, as described for amenorrhea. Anovulatory cycles usually represent a lesser degree of interference with these normal pathways than does amenorrhea.

**DIAGNOSIS IN AMENORRHEA**

Besides indicating a logical approach to therapy, an accurate diagnosis of the cause of amenorrhea is imperative to rule out the presence of a serious