

Abnormalities of Menstruation

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Normal Menstruation

- Cyclic uterine bleeding starts by age 13 and continues until age 45-50
- Menstrual cycle length may vary between 21-35 days
- Duration of the menstrual period lasts from 3-7 days
- Average menstrual flow is 30-50 ml

Normal Menstruation

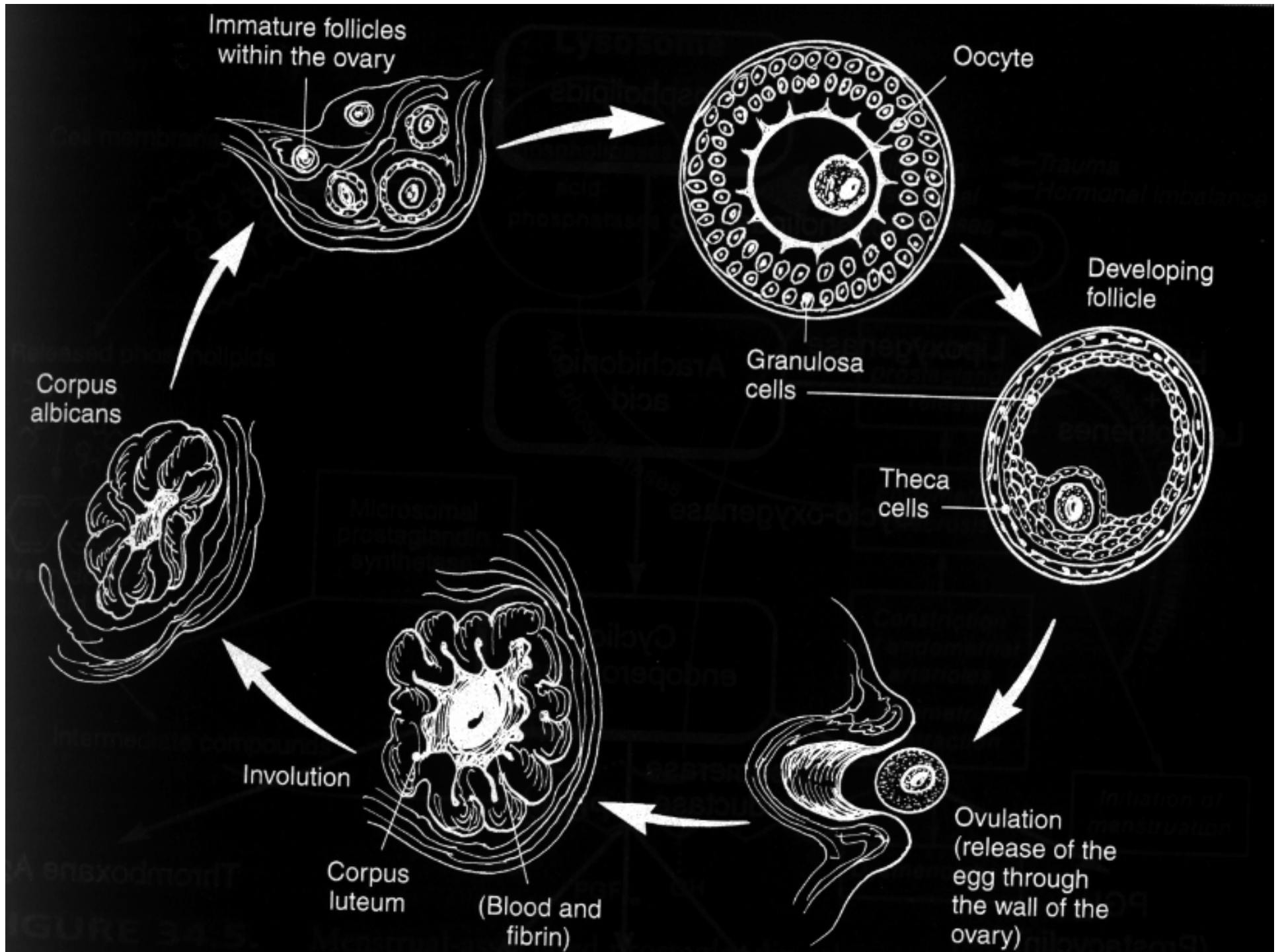
- Regulation of menstruation depends on the interaction of hormones
 - From the hypothalamus: gonadotropin releasing hormone (GnRH)
 - From the pituitary: follicle stimulating hormone (FSH), and luteinizing hormone (LH)
 - From the ovary: estradiol and progesterone

Normal Menstruation

- GnRH is released in pulses and stimulates the secretion of FSH and LH from the pituitary
- FSH and LH are released in pulses from the anterior pituitary
- Estradiol is secreted from the ovary in response to FSH
 - Estradiol will in turn decrease or inhibit FSH secretion from the pituitary

Reproductive Cycle

- Phase 1: Menstruation and Follicular Phase
 - During menstruation the endometrium is shed in response to the withdrawal of progesterone from the previous cycle
 - FSH rises 2 days before menstruation and causes a new follicles to mature
 - Estradiol rises during this time
 - The higher levels of estradiol lead to decreased FSH and increased LH

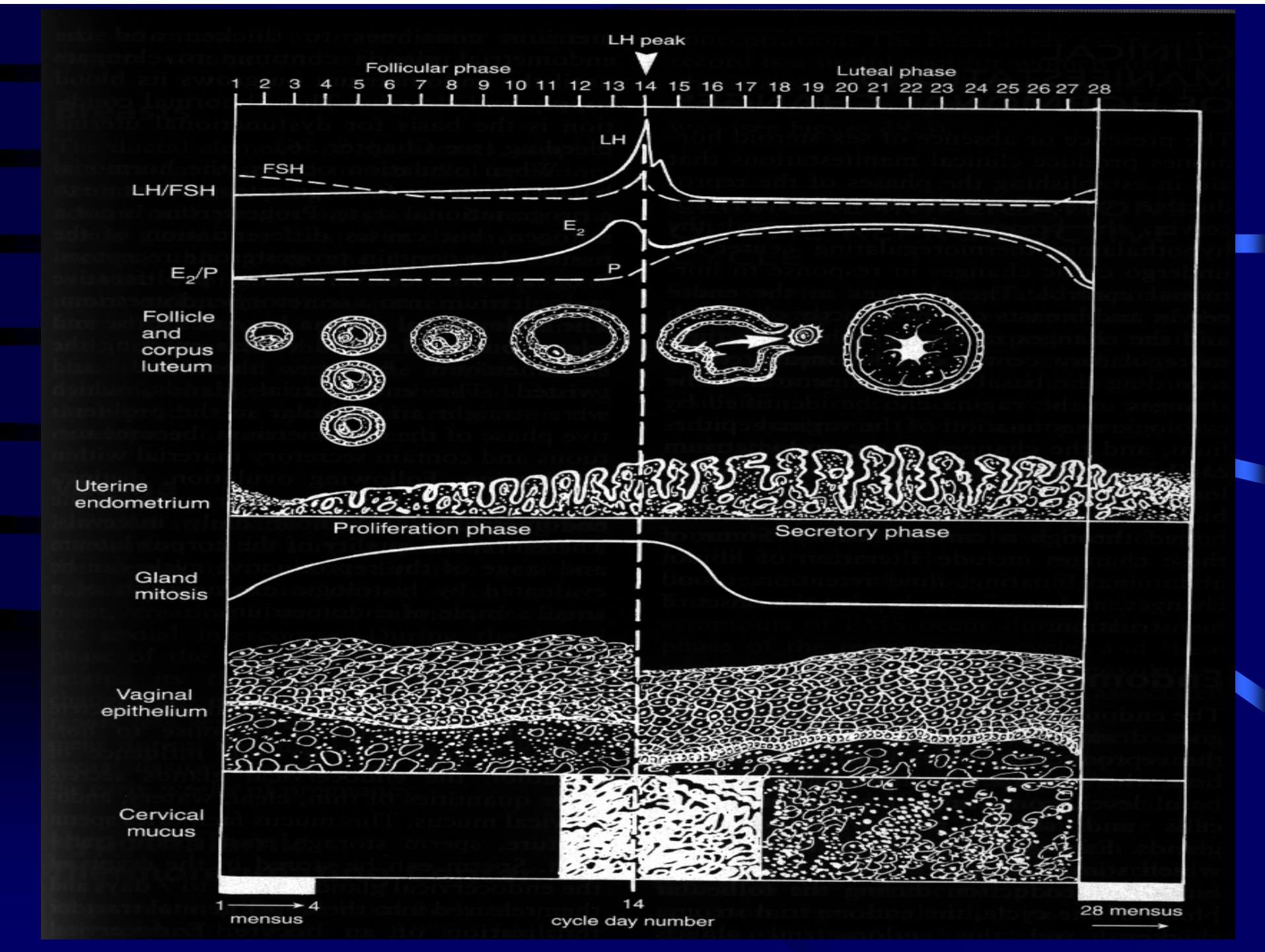


Reproductive Cycle

- Phase 2: Ovulation
 - LH rises sharply by day 11-13 of the menstrual cycle which stimulates one dominant follicle to rupture and release the oocyte
 - Many women will have a pain in their flank at the time of ovulation

Reproductive Cycle

- Phase 3: Luteal Phase
 - Cells in the follicle start to make progesterone and the corpus luteum is formed from the ruptured follicle
 - The corpus luteum produces progesterone for 11 days after ovulation
 - if fertilization of the oocyte takes place, the corpus luteum continues to make progesterone throughout the first trimester of pregnancy



Amenorrhea

- Primary amenorrhea: A young woman who has never menstruated
- Secondary amenorrhea: Woman who stops menstruating for at least 6 months

Amenorrhea

- Causes
 - Pregnancy: the most common cause
 - Hypothalamic-pituitary dysfunction
 - Ovarian dysfunction
 - Alteration of the genital outflow tract

Amenorrhea

- Hypothalamic-pituitary dysfunction
 - If the pulsatile secretion of GnRH is disrupted, FSH and LH will not be released and amenorrhea will result
 - Weight loss, large weight gain, brain tumors, head injuries and chronic medical illnesses can cause dysfunction of the hypothalamus or pituitary and lead to amenorrhea

Amenorrhea

- Ovarian failure
 - Ovarian follicles become resistant to FSH and LH or are exhausted
 - Women with ovarian failure will have hot flushes from estrogen deficiency
 - This is different than the women with hypothalamic or pituitary causes of amenorhea
 - Caused by chromosomal problems, autoimmune diseases (such as Lupus), or chemotherapy for cancer

Amenorrhea

- Obstruction of the Genital Outflow Tract
 - Congenital causes include imperforate hymen or absence of the uterus or vagina
 - Acquired causes include Asherman's syndrome which is scarring of the uterine cavity
 - usually caused by infection or dilation and curettage for retained pregnancy tissue

Amenorrhea

- Treatment
 - Make sure patient is not pregnant
 - Give progesterone for 10 days orally if anovulation from pituitary or hypothalamus is suspected
 - Patient should have a menstrual period within 7 days of finishing the medication
 - If ovarian failure is suspected, estrogen should be given with progesterone

Abnormal Uterine Bleeding

- Bleeding is either irregular, heavy or prolonged
- History should be helpful in determining whether patient is ovulating
 - If patient is ovulatory, she will have monthly bleeding episodes
 - If patient is not ovulatory, bleeding will occur at irregular and unpredictable intervals
- Have patient keep a menstrual calendar or diary

Abnormal Uterine Bleeding

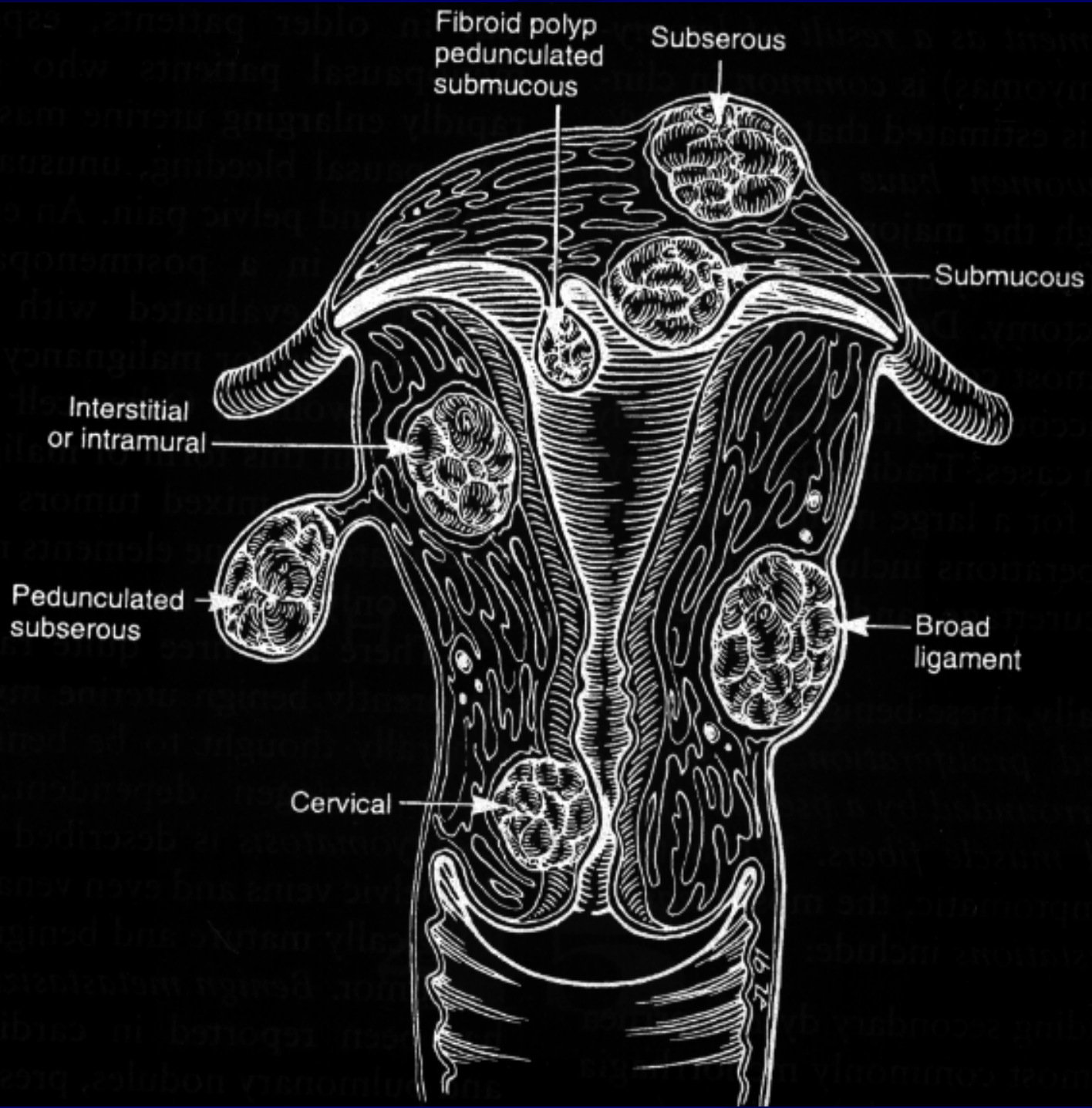
- Anovulatory bleeding
 - Caused by lack of progesterone production by the ovary
 - Patient will not have normal withdrawal bleeding monthly
 - Menses may be delayed for several months and then be very heavy
 - Hypothyroidism is commonly associated with heavy menses and intermenstrual bleeding
 - Examine thyroid, check thyroid function

Abnormal Uterine Bleeding

- Anovulatory bleeding
 - Patients who have long intervals between menses are at risk for developing hyperplasia of the endometrium
 - Treat these patients with progesterone monthly so they will have withdrawal bleeding

Abnormal Uterine Bleeding

- Ovulatory abnormal bleeding
 - Characterized by monthly menses that are heavy or prolonged
 - interval between periods is normal
 - if bleeding is heavy enough, iron deficiency anemia may develop
 - Causes
 - Uterine leiomyomas, uterine polyps, adenomyosis (growth of the endometrium into the myometrium), infection of the uterus, cancer of the cervix or endometrium



Abnormal Uterine Bleeding

- Diagnosis
 - Examine cervix, look for tumors or polyps or ulcers
 - Examine the uterus, evaluate the size and shape
 - an irregularly shaped, enlarged uterus occurs when leiomyomas are present
 - Biopsy the endometrium if possible to rule out cancer or polyps

Abnormal Uterine Bleeding

- Treatment
 - Give iron supplements if iron deficiency anemia is present
 - Use oral contraceptives or estrogen and progesterone together to reduce the amount and duration of bleeding
 - Removal of uterus is curative but reserved for the most serious cases