

SECONDARY AMENORRHEA

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Absence of menses for more than three months in females who previously had regular menstrual cycles or six months in females who had irregular menses.

CAUSES

Physiological : Pregnancy.

Is the most common cause of secondary amenorrhea.

Pathological :

- 1) Hypothalamus : 35% (almost all functional hypothalamic amenorrhea)
- 2) Pituitary – 17%(13% hyperprolactinemia, 1.5% "empty sella," 1.5 % Sheehan syndrome, 1 % Cushing syndrome)
- 3) Ovary – 40 percent (30 % polycystic ovary syndrome [PCOS], 10 % primary ovarian insufficiency [POI])
- 4) Uterus – 7 % (all due to intrauterine adhesions)
- 5) Other – 1 % (congenital adrenal hyperplasia, ovarian and adrenal tumors, hypothyroidism)

Primary ovarian insufficiency (premature ovarian failure)

The depletion of oocytes **before age 40 years** is called primary ovarian insufficiency (POI, or premature ovarian failure). Most females experience **intermittent** follicular development, estradiol production, LH surges, ovulation, and menstrual bleeding between months of hypoestrogenemia. When POI is complete, lack of ovarian function leads to estrogen deficiency, endometrial atrophy, and cessation of menstruation. Despite the intermittent ovarian function, conception is rare once a diagnosis of POI has been made.

Loss of the negative feedback effect of estradiol and inhibin on the hypothalamus and pituitary results in **high serum FSH concentrations**, which distinguishes ovarian insufficiency from hypothalamic amenorrhea (low or normal FSH).

Most cases of unknown cause.

Intrauterine adhesions (Asherman syndrome)

Are the only uterine cause of secondary amenorrhea. This syndrome results from acquired scarring of the endometrial lining, usually secondary to postpartum hemorrhage or endometrial infection followed by instrumentation such as a dilatation and curettage. This abnormality prevents the normal build-up and shedding of endometrial cells, leading to very light or absent menses.

Sheehan syndrome

Which is also called post-partum pituitary necrosis refers to the **necrosis of cells of the anterior pituitary gland following significant post-partum bleeding, hypovolemia, and shock.**

-The first and most common symptom of Sheehan syndrome is the absence of lactation, also known as agalactorrhea.

- Other symptoms are associated with loss of pituitary gland hormone production and may include amenorrhea or oligomenorrhea, hot flashes, and/or decreased sex drive. Symptoms of hypothyroidism such as fatigue, bradycardia, hypotension, weight gain, and constipation may occur months later, along with the loss of axillary and pubic hair. Adrenal insufficiency can also occur with symptoms of fatigue and weight loss.

-Pathophysiology

An increase in pituitary volume and cell count occur in pregnant women in the weeks preceding delivery. This increase is caused principally by hyperplasia of prolactin-producing cells (lactotrophs) and hyperplasia of other cells in the anterior pituitary gland. This hyperplasia leads to increased nutritional and metabolic demand by the anterior pituitary gland as a whole, but the blood supply that feeds the anterior pituitary does not increase. The blood supply that feeds the anterior pituitary gland is a relatively low-pressure system. It is theorized that this is the mechanism that makes the pituitary cells more susceptible to ischemia. Consequently, the cells of the anterior pituitary are more prone to necrosis in pregnancies complicated by significant postpartum hemorrhage. The posterior pituitary gland has its blood supply which functions under higher pressure than the anterior pituitary, so it is not usually affected by shock or hypovolemia.

- May present as pan-hypopituitarism or as selective loss of pituitary function

EVALUATION

A pregnancy test is recommended as a first step to rule out pregnancy.

Hormonal profile : FSH,LH,E2,TESTODTERONE,DHEAS2,TSH,PROLACTIN, 17-hydroxyprogesterone

Additional evaluation : ULTRASOUND,MRI, HSG,HYSTEROSCOPY,.....

MANAGEMENT

Goals — The overall goals of management in women with secondary amenorrhea include:

- Correcting the underlying pathology, if possible.
- Helping the woman to achieve fertility, if desired.
- Preventing complications of the disease process (eg, estrogen replacement to prevent osteoporosis); or in polycystic ovary syndrome (PCOS), management of obesity, hirsutism, oligomenorrhea, and metabolic disorders

Functional hypothalamic amenorrhea

Lifestyle changes (reduced exercise, stress, increased caloric intake)

Cognitive behavioral therapy (CBT)

Primary ovarian insufficiency (premature ovarian failure)

Should receive estrogen therapy for prevention of bone loss.

Intrauterine adhesions

Hysteroscopic lysis of adhesions followed by a course of estrogen treatment to stimulate regrowth of endometrial tissue.