Amenorrhea

Amenorrhea '

Type of amenorrhea and definition

Primary amenorrhea: the absence of menstrual cycle at the age of 14 without secondary sexual characteristics, or at the age 16 with secondary sexual characteristics

Secondary amenorrhea: the absence of menstrual cycle for 3 consecutive month in women with previously regular cycle or 6 month in women with irregular cycle.

Physiological amenorrhea causes: menopause, pre-menarche, pregnancy.

Breast present

Uterus present

Imperforated hymen (A)(B)

Transverse vaginal septum

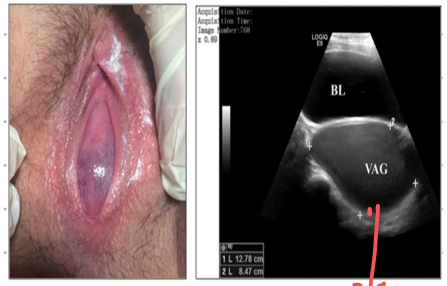
Cervical atresia (no cervix)

Pregnancy before menses

Anorexia nervosa

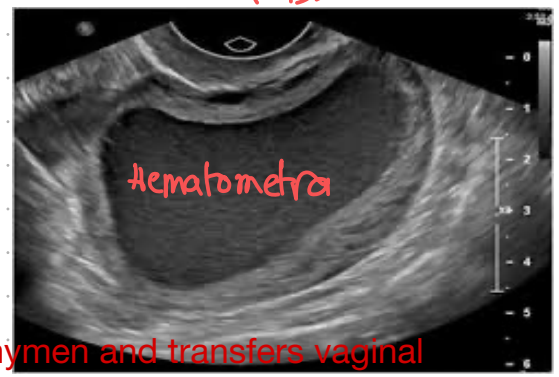
Excessive exercise

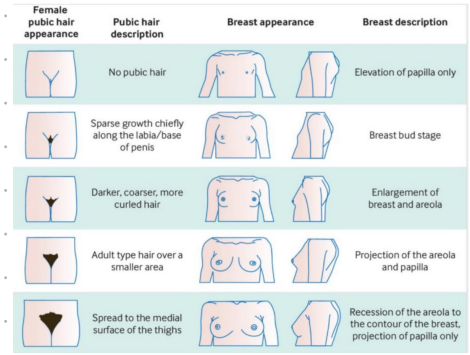
(A)



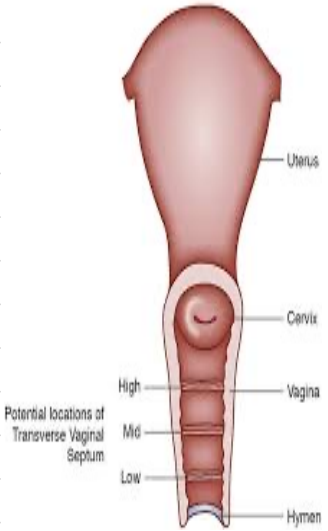
Hematocolops

Primary amenorrhea (B)





Thelarche is followed by pubarche (pubic hair development), growth spurt, and menarche



Clinical presentation of imperforate of hymen and transfers vaginal septum:

Cyclical lower abdominal pain and primary amenorrhea with secondary sexual characteristics

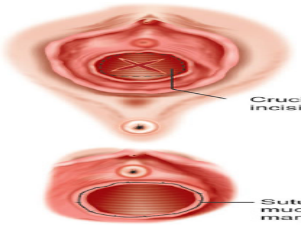
On physical exam: presence of secondary sexual characteristics, distended abdomen , enlarged uterus, bluish thin bulging hymen (specific in imperforated hymen)

On us hematometra, hematocolops , hematosalpinx

Treatment: hymenectomy (curciate incision in the hyemen in our society should be under parent should be consented and forensic should be present to give her medical report of the procedure)

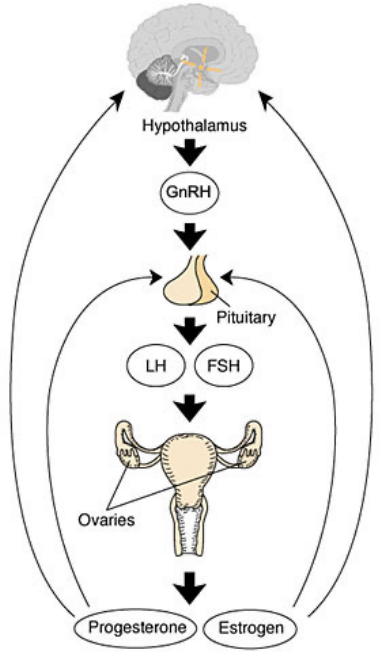
Resection of the septum from the vagina route

Cause of transverse vaginal septum: Failure of fusion of the mullerin duct and urogenital sinus



Cervical stenosis: same picture as imperforated hymen, except on us only hematometra seen, no hematocolpos as blood didn't reach vaginal and on exam normal vagina and hymen.

Treatment: trial to create a cervix high faliure and mortaltiy or TAH



This tract should be intact for the menstrual cycle

Primary amenorrhea

Uterus absent
Breast present

Table II-11-1. Müllerian Agenesis versus Androgen Insensitivity

Breasts Present/ Uterus Absent	Müllerian Agenesis (46,XX)	Androgen Insensitivity (46,XY)
Uterus absent?	Idiopathic	MIF
Estrogen from?	Ovaries	Testes
Pubic hair?	Present	Absent
Testosterone level?	Female	Male
Treatment	No hormones Create vagina IVF—surrogate	Estrogen Create vagina Remove testes

Definition of abbreviations: MIF, Müllerian inhibitory factor.

The patient with (mullerian agenesis) had no upper vagina, no cervix, no uterus, no fallopian tube
But the had lower vagina as it came from urogenital sinus, and had ovaries which came from genital ridge

How to differentiate between them ? Karyotyping and testosterone level.

Primary amenorrhea

Uterus present
Breast absent

Table II-11-2. Gonadal Dysgenesis versus HP Axis Failure

Breasts Absent/ Uterus Present	Gonadal Dysgenesis (45,X)	HP Axis Failure (46,XX)
FSH	↑	↓
Why no estrogen?	No ovarian follicles	Follicles not stimulated
Ovaries?	"Streak"	Normal
Treatment pregnancy	E + P Egg donor	E + P Induce ovulation (HMG)
Diagnostic test?	Karyotyping	CNS imaging

Definition of abbreviations: E + P, estrogen and progestin; HMG, human menopausal gonadotropin.

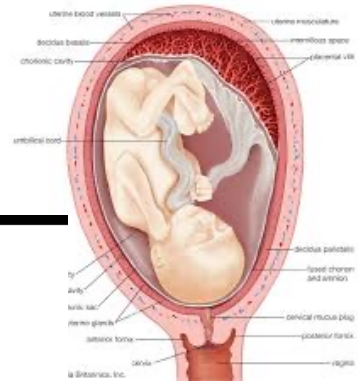
Kallman (failure to produce GnRH, anosmia
Excessive exercise, anoroxia nervosa, stress,anxiety
Brain tumor, radiation, chemotherapy, surgery,medication

Treatment of the cause

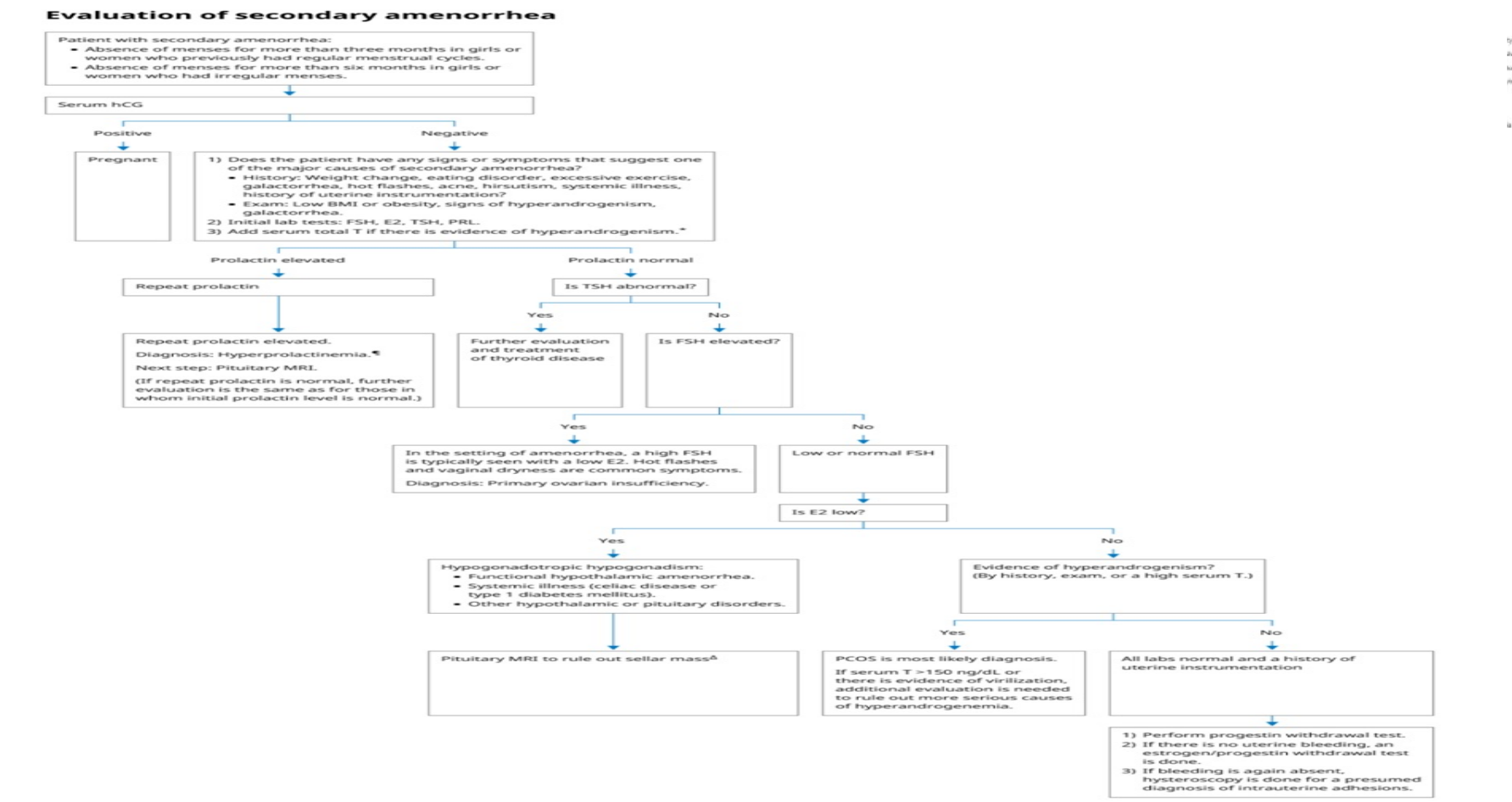
Secondary amenorrhea

Secondary amenorrhea: the absence of menstrual cycle for 3 consecutive month in women with previously regular cycle or 6 month in women with irregular cycle.

In secondary amenorrhea you should always rule out pregnancy



hypogonadotropic (suggesting hypothalamic or pituitary dysfunction)
hypergonadotropic (suggesting ovarian follicular failure),
eugonadotropic (suggesting pregnancy, anovulation, or uterine or outflow tract pathology).



This algorithm offers a stepwise approach to the evaluation of secondary amenorrhea. For further details, refer to additional UpToDate content on the causes, evaluation, and treatment of secondary amenorrhea.

BMI: body mass index; E2: estradiol; FSH: follicle-stimulating hormone; hCG: human chorionic gonadotropin; MRI: magnetic resonance imaging; PCOS: polycystic ovary syndrome; PRL: prolactin; T: testosterone; TSH: thyroid-stimulating hormone.

* Many clinicians also measure serum 17-hydroxyprogesterone at the initial visit to rule out nonclassic 21-hydroxylase deficiency. Some also measure serum dehydroepiandrosterone sulfate (DHEAS).

¶ Mild hyperprolactinemia can sometimes be seen with hypothyroidism. Euthyroidism should be confirmed before performing MRI.

△ Pituitary MRI not required in those with clear explanation for their hypogonadotropic amenorrhea, eg, eating disorder, excessive exercise, celiac disease, or type 1 diabetes mellitus.