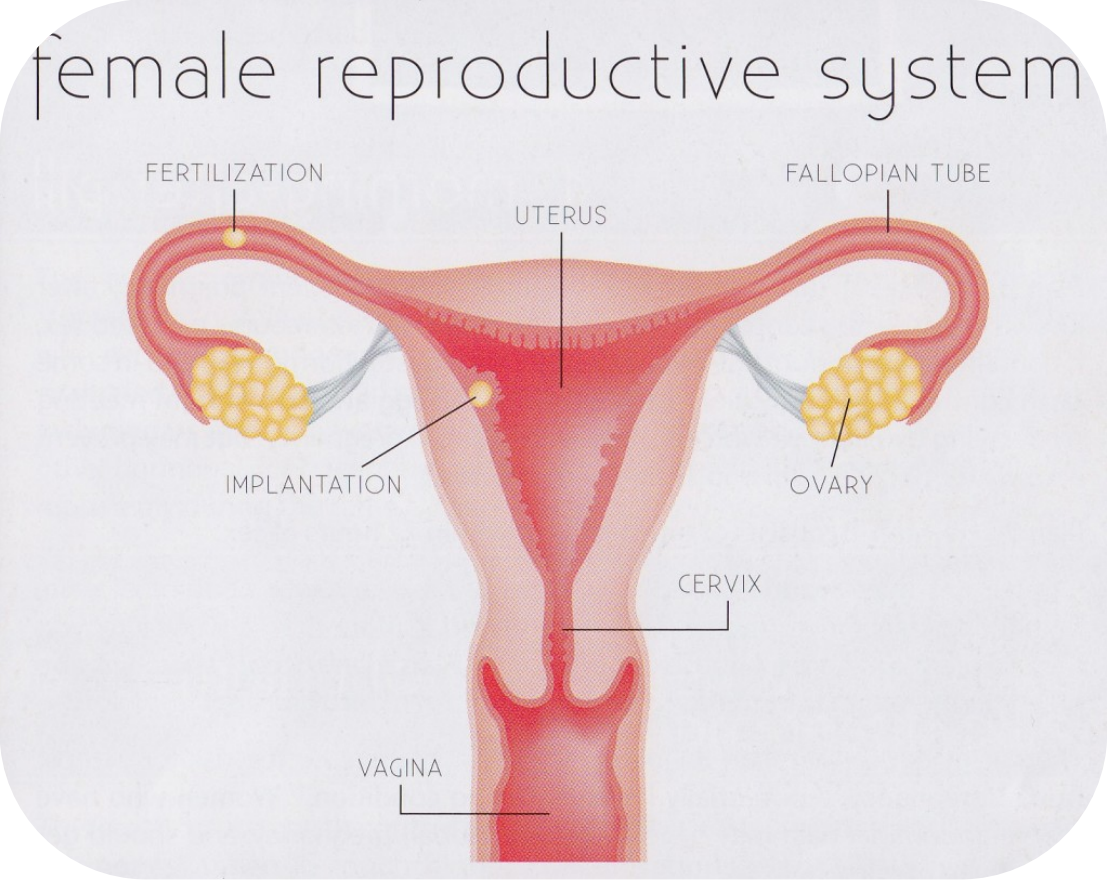
REPRODUCTIVE SYSTEM
2ND WEEK



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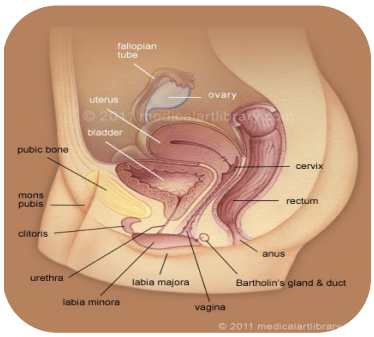


Anatomy

[2] Female reproductive system

which of the following is a Reflection of peritoneum from rectum to upper part of posterior surface of vagina ?

A. -Rectouterine (Douglas) pouch
B. -Uterovesical (vesicouterine) pouch
C. -Broad ligament of uterus

Ans: A

The overies attached to the broad ligment by ?

A. -fimbriae
B. -mesovarium
C. -ligament of ovary

Ans: B

which of the following is the narrowest part of the uterine tubes is ?

A. -Infundibulum
B. -Ampulla
C. -Isthmus
D. -Intramural part

Ans: C

which of the following parts of the uterus has no cavity ?

A. –Fundus
B. –Body
C. –Cervix

Ans: A

when does the long axis of whole uterus is bent forward on long axis of vagina this position of uterus is ?

A. -RETROVERTED UTERUS
B. -ANTEFLEXED UTERUS
C. -ANTEVERTED UTERUS

Ans: C

which of the following is the blood supply of the ovaries ?

A. abdomenal aorta
B. iliac artery
C. renal artery

Ans: A

[3] Female Perineum and External Genitalia

Q1)All of the following choices concerning Boundaries of Perineum are correct except?

A. ischialtuberositiesligament is clocated lateral to ***Perineum***
B. sacral vertebrae is located posteriorly to ***Perineum***
C. Coccyx vertebrae is located posteriorlyto ***Perineum***
D. Symphysis pubis is located anteriorly to ***Perineum***

Ans:B

Q2) Which one of the following is not a muscle ofUrogenital Diaphragm?

A. Superficial transverse perineal muscles
B. Sphincter urethrae
C. deep transverse perineal muscles
D. A-C

Ans:A

Q3) Which one of the following is wrongconcerning SuperficialPerineal Pouch?

a) Superficial Perineal Pouch is superior to membranous layer of superficial fascia.
b) Theperineal membrane is located superiorly to Superficial Perineal Pouch
c)ischiopubic rami is located laterally to Superficial Perineal Pouch
d)ischialtuberositiesis located laterally to Superficial Perineal Pouch

ans:d

q4) Which one of the following is wrong concerning Anal Canal?

A. Anal canal is posterior to Perineal body and urogenital diaphragm
B. lower part of vagina is anterior to anal canal
C. Anal Canal is anterior to Anococcygeal body
D. Ischiorectal fossae lateral to anal canal

Ans:C

Q5)which one of the following is a content of Ischiorectal Fossa?

A)Inferior rectal vein
B)Inferior rectal artery.
C)Inferior rectal nerve
D)Superior rectal artery
E)Superior rectal vein

ANS:c

Development of female reproductive system

Q1) At which week gonad acquires the female morphological characteristics?

A. 5th week
B. 6th week
C. 7th week
D. 4th week
E. 10th week

ans:C

Note: choice "A" is the time for *Genital (Gonadal) Ridge to appear*
While choice"B" is the time for Primordial germ cells to migrate to the Gonadal Ridges, choice "D" Primordial germ cells appear early in the 4th week among the Endodermal cell
4th wk early appearance of primordial germ cell→ 5th Gonadal) Ridge to appear
6th week for *Primordial germ cells to migrate finally, 7th* weekgonad become the female morphological Characteristics

#The ovary is identifiable histologically at the 10th week

Q2)Oogoniumderived from which one of the following ?

A. surface epithelium (Sex Cord)
B. intermediate mesoderm
C. nephrogenic cord
D. Primitive Germ Cell.

Ans:D

Note: "A" is precursor of ***Follicular Cells , "B" origin of Gonadal) Ridge***

Q3)Lower Portion of Vagina is derived from which one following ?

A. Paramesonephric Ducts
B. UterovaginalPrimordium
C. Uterine Tubes
D. the Urogenital Sinus
E. splanchinic mesoderm

ans:D

Note: B & C are ***derived from "A"*** Paramesonephric Ducts,
"E" is the origin of ***endometrial stroma and myometrium***

Q4) when does the Genital (Gonadal) Ridge appears ?

A. - fifth week
B. - fifth month
C. - sixth week

Ans: A

which of the following have an Inductive Influence on the differentiation of the gonad into ovary or testis ?

A. The primordial germ cells

B. urogenital sinus
C. Genital Tubercle

Ans:A

which of the following is the time of the ovary to identifiable ?

A. tenth week
B. first week
C. seventh week

Ans: A

which of the following is the time of external genitalia to be fully differentiated ?

A. 12th week
B. 9th week
C. 7th week

Ans: A

ANATOMY OF THE PELVIS

Q1) which one of the following structure is laterally to pelvic inlet ?

A. ischiopubic ramus
B. ala of sacrum
C. Sacral promontory
D. Ileopectineal lines.

Ans:D

Q2)Which one of the following muscle form the posterior wall of pelvic ?

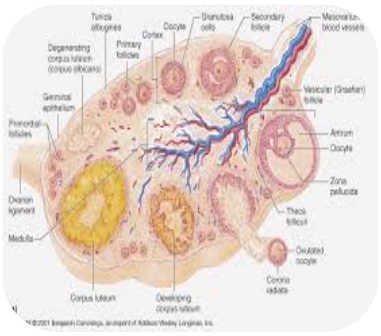
A. piriformis muscles
B. Obturator internus
C. semimembranosus
D. semitendinous

ans:A

Q3) **Coccygeus Muscle supply by wich one of the following nerve ?**

A. Perineal branch of the pudendal nerve.
B. Perineal branch of the second sacral nerve
C. Fourth and fifth sacral nerves.
D. A&c

Ans:c



Histology

Q1)In which one of the following stages does theca follicledifferentiate ?

A. **Secondary (Antral) Follicles**
B. **Multilaminar primary follicles**
C. **Unilaminar primary follicles**
D. **Primordial Follicles**

Ans:a

Q2)Which one of the following choices concerning Corpus Luteum are correct?

A. Corpus luteum of menstruation persists for six months.
B. Granulosa lutein cells are secrete progesterone
C. Theca lutein cells are secrete estrogen
D. corpusluteum of menstruation formed by involution of corpus luteum
E. a-d
F. b-c
G. all

ans:F

Q3)Which one of the following choices regarding to Ciliated cells Of Oviducts "Fallopian Tubes" are correct ?

A. **called peg cells &Secretory cells**
B. **Non-secretory**
C. **Apices bulge above nonciliated cells**
D. **Cilia beat toward uterus**
E. **Their apices contain nutritive material to nourish gametes**
F. **b-d**
G. **a-c-e**

ans:F

Note: G →NON Ciliated cells

Q4) The following statementsconcerning blood supply of uterus are correct except ?

A. **Coiled arterie has cyclic changes**
B. **Straight arteries has no cyclic changes**
C. **Straight arteriesextend into the functional zone**
D. **Coiled arteries terminate in the functional zone**

Ans:c

Q5) the lining epithelium of the Uterine Cervix at external osis ?

A. stratified squamous non-keratinized epithelium
B. stratified squamous keratinized epithelium
C. simple columnar mucus-secreting epithelium
D. a-d

ans:a
note: choice "C" the lining epithelium of **Uterine Cervix at cervical canal**

q6)All of the following are content of Placental Barrier except ?

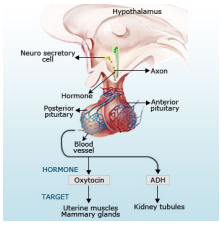
A. The basement membrane of the trophoblast
B. Thetrophoblast covering the villus
c.The endothelium of foetal capillaries
d.The basement membrane of foetal capillaries
e.The C.T. core of the **decidua basalis**

ans:E

Q7)the lining epithelium of lactiferous ducts is ?

A. stratified columnar epithelium
B. simple columnar epithelium
C. simple cuboidal epithelium
D. a-c

ans:A
Note: "c" is lining epithelium of separated ducts Within the lobules of Resting Mammary Gland



Physiology

[3] Physiology of ovarian cycle .

Q1:Which hormone is the Corpus Luteum responsible for producing?
A) estrogen
B) Progesterone
C) Follicle Stimulating Hormone
D) Luteinizing hormone

Answer B

Q2:Which of the following are functions of Luteinizing Hormone (LH)?
A) Formation & maintenance of the Corpus Luteum
B) Thinning of the Graafian follicles membrane
C) Stimulation of follicle development
D) Stimulation of GnRH production

Answer A, B

Q3:Which one of the following is the primary source of progesterone in the later stages of pregnancy?
A) Fetus
B) Endometrium
C) Corpus Luteum
D) Placenta

Answer D

Q4:Which of the following are effects of increased levels of estrogen in the follicular phase of the menstrual cycle?
A) Hair thinning
B) Thickening of cervical mucous
C) Thinning of cervical mucous
D) Thickening of the endometrium

Answer D

Q5:Which one of the following is not true regarding ovulation ?

A. it occurs 14 days after menstruation
B. FSH increase 2-3 fold cause follicular swelling before ovulation
C. Stigma cause oozing of fluid and ova which is surrounded by corona radiata
D. LH cause granulosa and theca cell to secret estrogen while progesterone start to fall

Answer D

Q6:Which one of the following is true regarding follicular phase ?

A. LH increase slightly more earlier than FSH
B. Theca interna is a vascular connective tissue secrete estrogen and progesterone
C. Follicular fluid rich in progesterone and accumulate forming antrum
D. During each cycle (5-11) follicle continue to grow reaching the maturity
E. The ova enlarge and become embedded at one pole of the follicle

Answer E

Q7:To initiate ovulation :

A. Rapid growth of blood vessels and prostaglandin secretion
B. Large quantity of LH inhibit progesterone secretion
C. Proteolytic enzymes secreted by theca interna

Answer A

Q8:One day before ovulation :

A. The wall of the follicle become stronger
B. Estrogen increase and progesterone drop
C. Estrogen drop and progesterone increase

Answer C

Q9: regarding corpus luteum ?

A. It is formed by granulosa and theca cells
B. 7 days after ovulation it is replaced by corpus albicans
C. Theca cells has extensive endoplasmic reticulum & produce estrogen

Answer A

[4] Physiology of Uterine cycle

Q1: At which stage in the uterine cycle does the proliferative phase occur?

A) Days 1-5
B) Days 5-14
C) Days 15-28

Answer B

Q2:At which stage in the uterine cycle does the secretory phase occur?

A) Days 1-5
B) Days 5-14
C) Days 14-28

Answer C

Q3:Which of the following are effects of increased levels of estrogen in the follicular phase of the menstrual cycle?

A. Hair thinning
B. Thickening of cervical mucous
C. Thinning of cervical mucous
D. Thickening of the endometrium
E. D&C

Answer E

Q4:Menstruationoccure as a result of ?

A. Very high estrogen
B. necrosis of the deep layer of endometrium
C. Involution of the corpus luteum
D. Very high progesterone
E. Fertilized ovum

Answer C

Q5:Which one of the following occur during menstrual phase ?

A. Leukocyte release with necrotic material
B. Within 14 days become Re- epithelialized
C. Normally there is blood clotting

Answer A

Q6:During postovulatory phase:

A. There is positive feedback increase FSH & LH
B. Corpus leutem secret estrogen progesterone &inhibin
C. Placenta secret estrogen progesterone &inhibin

Answer B

Q7: What is the possible cause of LH surge ?

A. Estrogen has positive feedback stimulate FSH & LH
B. granulosa cell secret small amount of progesterone
C. A&B

Answer C

Q8:At which stage of the uterine cycle does the menstrual phase occur?
A) Days 1-5
B) Days 5-14
C) Days 14-28
Answer A

Q9: regarding menopause :
A. Low level of FSH & LH
B. Extreme skin flushing
C. Uterine hypertrophy

Answer B

[5] Physiology (Puberty in both sex):

Q1: Girls begin puberty at ages:
A-10–11
B- 11-12
C- 12-13
D-13-14
Answer: A

Q2: The mean age of Secondary sexual characteristiecs in boys is:
A- 10.5
B- 11.5- 12
C- 13.5 – 15.5
D- 15.5
Answer: B

Q3: The first sign of puberty in girls is:
A- Menarche
B- Breast enlargement
C- Pubic hair
D- Axillary hair
Answer: B

Q4: Which of the following hormones cause retention of minerals:
A- Estrogen
B- Insulin
C- Androgens
D-Progesterone
Answer: C

Q5: Regarding Pubertal stages in male, in which of the following stages the penis increases in length:
A- P2
B- P3
C- P4
D- P5
Answer: B

Biochemistry

[1] (CAH and TFS):

Q1: Congenital Adrenal Hyperplasia is mainly the result of:

A- Defect in steroid synthesis
B- Defect in glucose metabolism
C- Defect in the Adrenal gland
D- Defect in the*SRY* region of the Y chromosome

Answer: A

Q2: CAH Syndromes result in deficiency of any of these enzymes except:

A-3 β-Hydroxysteroid dehydrogenase
B-21 α-Hydroxylase
C- 3 α-Hydroxylase
D- 11 β- Hydroxylase

Answer:C

Q3: In case if there is 21 α-Hydroxylase Deficiency, which of following is correct:

A- High serum level of 17-hydroxyprogesterone
B- High Urine level of 17-hydroxyprogesterone
C- Low Serum level of 17-hydroxyprogesterone
D- Low Urine level of 17-hydroxyprogesterone

Answer: A

Q4: The Testicular Feminization Syndromekaryotype is:

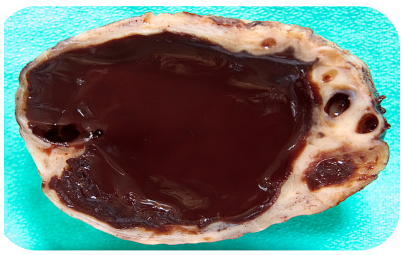
A- 46,XX
B-46,XY
C- 45,XY
D- 44,XY

Answer: B

Q5: You do a Pelvic ultrasound to the patient who is suffering from Testicular Feminization Syndrome what can you reasonably expect to see:

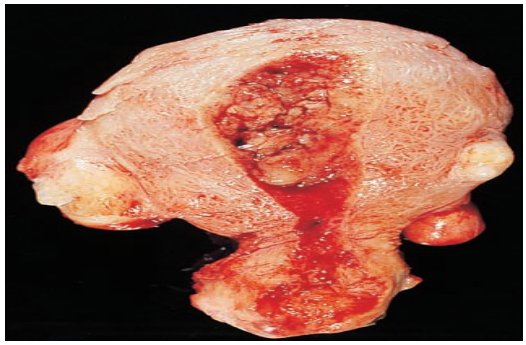
A- Fallopian tubes only
B- Uterus only
C- fallopian tubes, a uterus and vagina
D-Absence of fallopian tubes and uterus

Answer: D



[3] The Uterine Corpus

A 50-year-old nulliparous woman with a history of diabetes complains that her menstrual blood flow is more abundant than usual. During the last two menstrual cycles, she noticed spotting throughout the entire cycle. The patient is obese (BMI = 32 kg/m2), and her blood pressure is 160/100 mm Hg. An ultrasound examination reveals a thickened endometrial stripe with a polypoid mass in the uterine fundus. The patient undergoes a hysterectomy. The uterus is opened to reveal a partially necrotic mass (shown in the image). A biopsy of the mass shows moderately differentiated adenocarcinoma. Which of the following represents the most likely precursor of this patient's malignant disease?

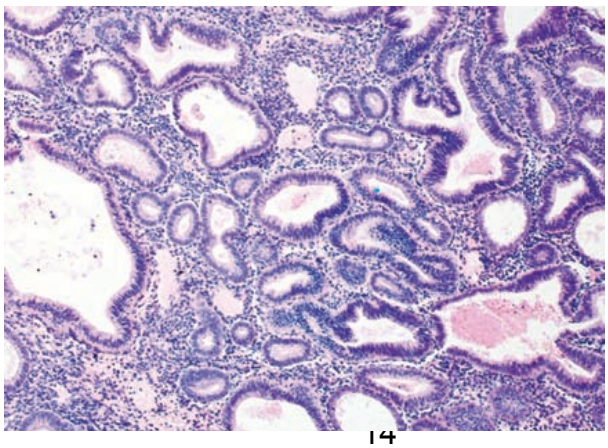


(A) Adenomyosis
(B) Atypical hyperplasia
(C) Chronic endometritis
(D) Complex hyperplasia
(E) Glandular metaplasia

The answer is B: Atypical hyperplasia.

Endometrial hyperplasia refers to a spectrum that ranges from simple glandular crowding to conspicuous proliferation of atypical glands, which are difficult to distinguish from early carcinoma. The risk of developing endometrial cancer increases with progressively higher degrees of endometrial hyperplasia. The progression from *hyperplasia free of atypia* (complex type, choice D) to invasive cancer requires some 10 years, but the corresponding time for *hyperplasia with atypia* is only 4 years.
Adenomyosis (choice A) and chronic endometritis (choice C) are not premalignant conditions.
Diagnosis: Endometrial adenocarcinoma

A 45-year-old obese woman (BMI = 32 kg/m2) with a history of diabetes and poorly controlled hypertension complains of increased menstrual blood flow of 3 months in duration. An endometrial biopsy is shown in the image. Which of the following most likely accounts for the pathogenesis of endometrial hyperplasia in this patient?



(A) Excess estrogen stimulation
(B) Exposure to exogenous progestational agents

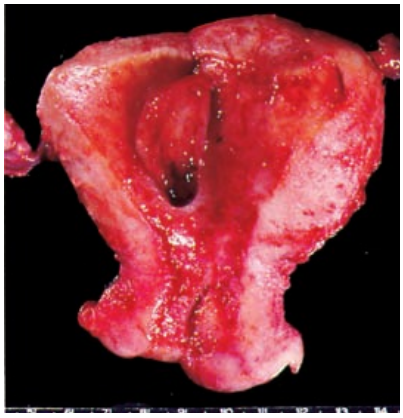
(C) History of chronic endometritis
(D) History of oral contraceptive use
(E) Prenatal exposure to diethylstilbestrol

The answer is A: Excess estrogen stimulation.
Endometrial hyperplasia and adenocarcinoma are frequently associated with exogenous or endogenous estrogen excess. For example, endometrial hyperplasia may result from anovulatory cycles, polycystic ovary syndrome, an estrogen-producing tumor, or **obesity**.
The other choices do not predispose to endometrial hyperplasia.
Diagnosis: Endometrial hyperplasia

A 33-year-old woman with a history of menorrhagia presents with a 6-month history of increasing fatigue. A CBC reveals a hypochromic, microcytic anemia (hemoglobin = 8 g/dL). Bimanual pelvic examination reveals an enlarged uterus with multiple, irregular masses. A hysterectomy is performed, and a sharply circumscribed fleshy tumor is found within the uterine wall (shown in the image). Which of the following is the most likely cause of vaginal bleeding and anemia in this patient?
(A) Adenomyosis
(B) Cervical cancer
(C) Endometrial carcinoma
(D) Endometriosis
(E) Uterine leiomyoma

20 The answer is E: Uterine leiomyoma.
These tumors are rare before age 20 years, and most regress after the menopause. Estrogen promotes the growth of leiomyomas, although it does not initiate them. Grossly, leiomyomas are firm, pale gray, **whorled**, and without encapsulation. Adenomyosis (choice A)does not present as a discrete mass. Endometrial carcinoma (choice C) is much less common than leiomyoma.
Diagnosis: Leiomyoma of the uterus

A 50-year-old woman complains of having intermenstrual bleeding for 4 months. A Pap smear is normal. An ultrasound examination shows a mass in the endometrial cavity. The patient elects to undergo a hysterectomy. A large polyp is found upon opening the endometrial cavity (shown in the image). Histologic examination of this polyp will most likely show which of the following pathologic fi ndings?
(A) Atypical endometrial hyperplasia
(B) Chronic endometritis
(C) Complex endometrial hyperplasia
(D) Endometrial glands, fibrous stroma and thick-walled blood vessels
(E) Multiple foci of squamous metaplasia



The answer is D: Endometrial glands and fibrous stroma.
Endometrial polyps occur most commonly in the perimenopausal period and are virtually unknown before menarche.
Microscopically, the core of a polyp is composed of :

(1) endometrial glands, which often are cystically dilated and hyperplastic;
(2) a fibrous endometrial stroma
(3) thick-walled, coiled, dilated blood vessels. The other choices may be observed occasionally in an endometrial polyp.
Diagnosis: Endometrial polyp

51 A 55-year-old nulliparous woman presents for a physical examination. The patient is obese (BMI = 33 kg/m2) and has mild, adult-onset diabetes. Compared with multiparous women, this patient is at increased risk of developing a neoplasm in which of the following anatomic locations?
A) Cervix
(B) Endometrium
(C) Endosalpinx
(D) Vagina
(E) Vulva
The answer is B: Endometrium.
The major form of endometrial cancer, endometrioid adenocarcinoma, is linked to prolonged estrogenic stimulation of the endometrium. In addition to treatment with exogenous estrogens, the most common risk factors are obesity, diabetes, nulliparity, early menarche, and late menopause. Each risk factor points to relative hyperestrinism. A high frequency of endometrial cancer is also found in women with estrogen-secreting granulose cell tumors. In the case of obesity, the incidence correlates with body weight, with the risk being increased 10-fold for women who are more than 23 kg (50 lb) overweight. This effect of obesity is related to the enhanced aromatization of androstenedione to estrone in adipocytes. Cancers of the other organs are not related to estrogenic stimulation.
Diagnosis: Endometrial adenocarcinoma

[2] Ovarian Tumors

A 36-year-old woman presents with infertility. She complains of having had dull pelvic pain for 9 months, which is accentuated during menstruation. Physical examination and endocrinologic studies are normal. Laparoscopy reveals multiple, small hemorrhagic lesions over the surface of both ovaries and fallopian tubes and abundant pelvic scarring. Which of the following is the most likely diagnosis?
(A) Borderline serous tumor
(B) Ectopic pregnancy
(C) Endometriosis
(D) Metastatic cervical carcinoma
(E) Pelvic inflammatory disease

The answer is C: Endometriosis.
Endometriosis refers to the presence of benign endometrial glands and stroma outside the uterus. It afflicts 5% to 10% of women of reproductive age and regresses following menopause. The sites most frequently involved are the ovaries (>60%); and it could affect other sites. With repeated cycles, hemorrhage, and the onset of fibrosis, the affected surface may take on a grossly formation of cysts up to 15 cm in diameter, which contain chocolatecolored material (“chocolate cysts”). The other choices do not present as small hemorrhagic lesions in these anatomic sites.
Diagnosis: Endometriosis

A 30-year-old woman presents with a 5-month history of increasing abdominal girth and pelvic discomfort. Imaging studies reveal a mass replacing the left ovary. A multilocular tumor filled with thick, viscous fluid is removed (shown in the image). Tumor spaces are lined by mucinous, columnar epithelial cells, showing no evidence of atypia. There are nopapillary structures and no evidence of stromal invasion. Which of the following is the appropriate pathologic diagnosis?

(A) Endometrioid adenoma of ovary
(B) Granulosa cell tumor
(C) Mucinous cystadenocarcinoma
(D) Mucinous cystadenoma
(E) Serous cystadenocarcinoma

The answer is D: Mucinous cystadenoma.

Benign common epithelial tumors of the ovary are almost always serous or mucinous adenomas and generally arise in women between the ages of 20 and 60 years. The neoplasms are frequently large and often 15 to 30 cm in diameter. As opposed to their malignant counterparts, benign ovarian epithelial tumors tend to have thin walls and lack solid areas. Lack of stromal invasion and atypia in this case exclude mucinous cystadenocarcinoma (choice C).
Diagnosis: Mucinous cystadenoma of the ovary

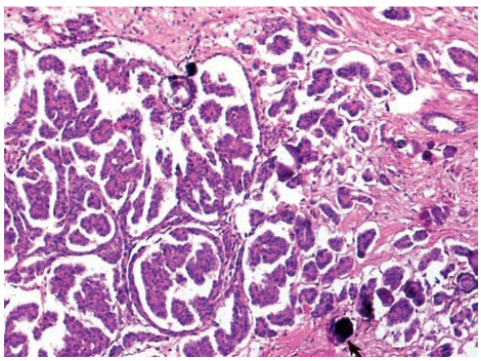
A 50-year-old woman who has a family history of breast cancer presents with a 6-month history of increasing abdominal girth. On close questioning, she volunteers a history of vague abdominal pain dating back 1 year. She has no children and has never been pregnant. Bimanual pelvic examination reveals a 10-cm right adnexal mass. Percussion of the abdomen indicates ascites. Aspiration cytology of the ascites fluid reveals malignant papillary structures with psammoma bodies. A mutation in which of the following genes is most likely associated with this patient's malignant disease?

(A) *BRCA1*
(B) *p53*
(C) *Rb*
(D) *VHL*
(E) *WT-1*

The answer is A: BRCA1.

Malignant papillary structures and psammoma bodies in a patient with ascites is most compatible with the diagnosis of papillary serous cystadenocarcinoma of the ovary. The same gene implicated in hereditary breast cancers, namely BRCA1, has been incriminated in the pathogenesis of familial ovarian cancer. Women who bear BRCA1 gene mutations tend to develop ovarian cancer considerably earlier than women who have sporadic ovarian cancer, but their prognosis is considerably better.
Diagnosis: Ovarian cancer, papillary serous cystadenocarcinoma

The patient described in Question 27 undergoes surgery to have the mass removed. Histologic examination of the surgical specimen is shown in the image. The arrow points to a calcified focus (psammoma body). This neoplasm most likely originated from which of the following ovarian cells/tissues?

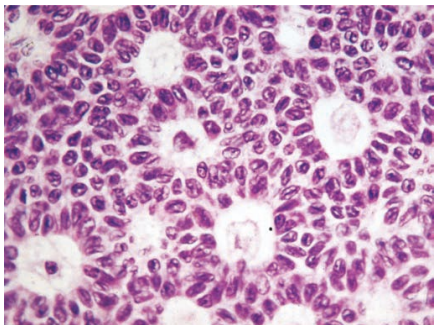


(A) Germ cells
(B) Granulosa cells

(C) Sertoli-Leydig cells
(D) Surface epithelium
(E) Theca cells

The answer is D: Surface epithelium.
The tumor depicted is a papillary serous cystadenocarcinoma. The most frequently encountered ovarian tumors arise from the surface epithelium and are termed common epithelial tumors.
Germ cells (choice A) give rise to benign teratomas and a variety of malignant tumors. The other cells give rise to sex cord/stromal tumors.
Diagnosis: Ovarian cancer, papillary serous cystadenocarcinoma

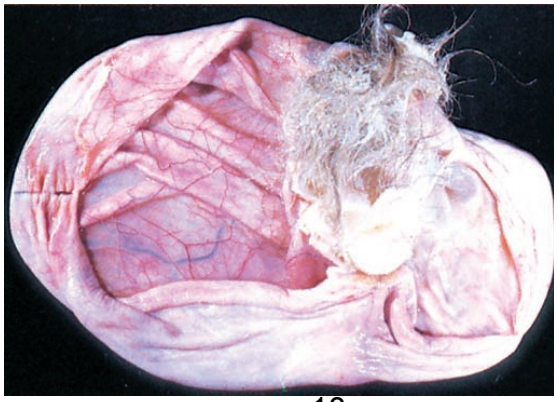
A 50-year-old woman presents with a 1-month history of intermittent vaginal bleeding. A Pap smear is normal. Pelvic examination reveals a left adnexal mass. A uterine curettage shows complex endometrial hyperplasia without atypia. A CT scan of the abdomen reveals a 5-cm mass replacing the left ovary. The patient undergoes hysterectomy and bilateral salpingo-oophorectomy. Histologic examination of the ovarian mass is shown in the image which shows Call-Exner bodies. Which of the following is the appropriate pathologic diagnosis?



A) Dysgerminoma
(B) Endometrioid carcinoma
(C) Granulosa cell tumor
(D) Mucinous cystadenocarcinoma
(E) Sertoli-Leydig cell tumor

The answer is C: Granulosa cell tumor.
Granulosa cell tumor is the prototypical functional neoplasm of the ovary associated with estrogen secretion. The tumor is derived from sex cord stromal cells. Most granulosa cell tumors occur after the menopause. A juvenile form occurs in children and young women and has distinct clinical and pathologic features (hyperestrogenism and precocious puberty). Microscopically, granulosa cell tumors display haphazard orientation of the nuclei about a central degenerative space (Call-Exner bodies), which results in a characteristic follicular histologic pattern. Three fourths of granulosa cell tumors secrete estrogens. Consequently, endometrial hyperplasia is a common presenting sign. Hyperplasia may progress to endometrial adenocarcinoma if the functioning granulosa cell tumor remains undetected. Sertoli-Leydig cell tumors (choice E) typically secrete weak androgens. The other choices do not secrete hormones.
Diagnosis: Granulosa cell tumor of the ovary

A 20-year-old woman presents for a complete physical examination. During the pelvic examination, a 5-cm cystic mass is found in the region of the right ovary. Radiographs show focal calcifications in the mass. The tumor is removed, and the surgical specimen is shown in the image. Which of the following is the most likely diagnosis?



(A) Dysgerminoma
(B) Mature teratoma
(C) Mucinous cystadenoma
(D) Serous cystadenocarcinoma
(E) Teratocarcinoma

The answer is B: Mature teratoma.

Mature teratoma is a tumor of germ cell origin that differentiates toward somatic structures. More than 90% contain skin, sebaceous glands, and hair follicles. Teratocarcinoma (choice E) features immature embryonic tissues and malignant stem cells.
Diagnosis: Mature cystic teratoma of the ovary

47 A 25-year-old woman presents with a 6-month history of increasing facial hair, deepened voice, and amenorrhea. Physical examination confirms virilization. A CT scan reveals a left ovarian mass. The tumor is surgically removed. It measures 10 cm in diameter and has a yellowish-tan appearance on cross section. The tumor is malignant and consists of two distinct cell populations. Some cells form solid nests, whereas others are arranged in trabecular and gland-like structures. Which of the following is the appropriate diagnosis?
(A) Brenner tumor
(B) Dysgerminoma
(C) Granulosa cell tumor
(D) Mature cystic teratoma
(E) Sertoli-Leydig cell tumor

The answer is E: Sertoli-Leydig cell tumor.
Sertoli-Leydig cell tumor is a rare mesenchymal neoplasm of the ovary of low malignant potential that resembles the embryonic testis. It is the prototypical functional tumor associated with androgen secretion. The neoplastic cells typically secrete weak androgens (dehydroepiandrosterone), which accounts for the large tumor size required to achieve masculinizing signs. Sertoli-Leydig cell tumor occurs at all ages but is most common in young women of childbearing age. Nearly half of all patients with Sertoli-Leydig cell tumors exhibit androgenic effects (i.e., signs of virilization, evidenced by hirsutism, male escutcheon, enlarged clitoris, and deepened voice). The initial sign is often defeminization, which is manifested as breast atrophy, amenorrhea, and loss of hip fat. Once the tumor is removed, the signs disappear or are at least ameliorated. The other choices are not associated with virilization.
Diagnosis: Sertoli-Leydig cell tumor

A 34-year-old woman presents with increasing abdominal girth of 3 months in duration. Physical examination reveals a left ovarian mass and mild ascites. The ovarian mass is removed, and the pathology report states "yolk sac carcinoma." Which of the following provides the best serologic marker to monitor the course of disease in this patient after surgery?
(A) Alkaline phosphatase
(B) Alpha-fetoprotein
(C) Carcinoembryonic antigen
(D) Human chorionic gonadotropin
(E) Sex hormones (estrogen/progesterone)

The answer is B: Alpha-fetoprotein.
Yolk sac tumor is a highly malignant tumor of women under the age of 30 years that histologically resembles mesenchyme of the primitive yolk sac. The tumor secretes alpha-fetoprotein (AFP), which can be demonstrated histochemically within eosinophilic droplets. Detection of AFP in the blood is useful both for diagnosis and for monitoring the effectiveness of therapy.
The hormone human chorionic gonadotropin (choice D) is secreted by choriocarcinoma. Estrogen (choice E) is secreted by sex cord tumors.
Diagnosis: Yolk sac carcinoma

If you have any questions you want to add, please send it to

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Good luck

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اللهم علّمنا ما ينفعنا وانفعنا بما علّمتنا وزدنا عِلماً وعملاً وأجعل ما علّمتنا حجةً لنا لا علينا