**Gynae quick revision points**

**Fatima Haider**
**KGMC**

- The uterus is most commonly anteverted by 90° and anteflexed by 120°.
- Tubular glands are long during the proliferative phase and coiled during the secretory phase
- Endocervix - Composed of simple columnar epithelium with mucous-producing cells
- Ectocervix - Composed of stratified squamous epithelium (nonkeratinized)
- Paramesonephric duct (Müllerian duct) → uterus, cervix, fallopian tubes, and proximal part of the vagina
- Paramesonephric duct anomalies - Septate uterus, Bicornuate uterus, Didelphic uterus
- Most common site of fertilization by sperm: the ampulla of fallopian tube
- Primary oocyte arrest occurs in prophase I of meiosis I (think PROphase = PRior to Ovulation).
- Secondary oocyte arrest occurs in metaphase II of meiosis II (think METaphase = before egg MET sperm).Primary oocytes are formed prior to birth to serve as an ovarian reserve.
- Vagina provides Barrier against ascending infections: due to its acidic pH 4–4.5
- Greater vestibular glands (Bartholin gland) - Secrete alkaline fluid for lubrication
- Possible clinical features of estrogen deficiency include menopausal symptoms, vaginal and endometrial atrophy, and osteoporosis.
- Increased estrogen levels may also have adverse effects, including gynecomastia, thrombosis, and an increased risk of breast and endometrial cancer.
- Ovarian insufficiency: idiopathic or secondary to an underlying conditions (e.g., Turner syndrome, polycystic ovary syndrome)
- LH stimulates theca cells and induces the production of progesterone and androstenedione
- FSH stimulates granulosa cells and recruits a group of maturing follicles in the ovary → production of estradiol and inhibin B in the growing follicles → negative feedback to the pituitary gland → inhibited FSH release
- LH surge induces ovulation
- progestin challenge (10 days of progestin intake)
  Withdrawal bleeding induced: anovulation (e.g., PCOS, idiopathic anovulation, premature ovarian failure)
  No withdrawal bleeding (may indicate uterine anomalies or estrogen deficiency): test FSH levels.
- The female athlete triad of functional hypothalamic amenorrhea: low calorie intake/strenuous physical activity, low bone mineral density, and amenorrhea
- Ovarian insufficiency - failure of adequate ovarian function (endocrine as well as reproductive) before the age of 40, which often leads to premature menopause
- Mittelschmerz - ovulatory or midcycle pain
- Dyspareunia: pain that occurs during or after sexual intercourse
- Levonorgestrel: most effective when taken within 3 days

- Ulipristal acetate and the Yuzpe regimen can be used within 5 days
- Uterine leiomyomas (also known as fibroids) are benign, hormone-sensitive smooth muscle tumor of the uterus.
- Type I endometrial cancer: endometrioid adenocarcinomas (grade 1 and 2) derived from atypical endometrial hyperplasia
- Type II endometrial cancer: endometrioid adenocarcinomas (grade 3) and tumors of nonendometrioid histology (serous, clear cell, mucinous, squamous, transitional, and undifferentiated cells)
- Koilocytes are epithelial cells with perinuclear halos that are pathognomonic of HPV infection and may be present from early HPV infection
- Endocervical sampling is contraindicated in pregnancy because of the increased risk of complications (e.g., cervical or membrane perforation, pregnancy loss).
- Colposcopy and biopsy are safe during pregnancy and should ideally be performed by an experienced physician as physiological changes of the cervix during pregnancy make it difficult to detect abnormalities.
- Expedited treatment for HSIL, endocervical curettage, and endometrial biopsies are contraindicated during pregnancy
- Normal vaginal pH: 4–4.5
- pH > 4.5 → suspect bacterial vaginosis and trichomoniasis (other causes of increased vaginal pH include menstruation, amniotic fluid, and sexual intercourse)
- Clue cells and a positive whiff test - bacterial vaginosis
- Nabothian cysts: retention cysts that arise in the transformation zone . These cysts have no pathological significance.
- White lesions under acetic acid application: condylomata acuminata
- White membrane that cannot be scraped off: cervical leukoplakia
- Punctate lesions or coarse mosaic pattern: cervical intraepithelial neoplasia
- Atypical vessels: cervical cancer
- CA 15-3: breast carcinoma
- CA 125: ovarian and/or endometrial carcinoma
- AFP: germ cell tumors
- HCG: choriocarcinomas and/or germ cell tumors
- Colposcopy finding of normal cervical epithelium - No acetowhitening
- Pre cancerous lesions - Acetowhitening (most common): an area that appears white after the application of acetic acid
- invasive cervical cancer - Atypical growth of the vessels (e.g., corkscrew or comma-like shape)
- Cervical carcinoma
  clear cell carcinoma - associated with DES
  Small-cell carcinoma - Neuroendocrine tumor; Nuclei with salt-and-pepper chromatin
- Conization (cervical excisional procedure) - A fertility-preserving diagnostic and therapeutic procedure in which a cone-shaped portion of the cervix including the ectocervix, endocervix, and cervical transformation zone are excised
    - Cold-knife conization
    - Loop electrosurgical excision procedure (LEEP) - usually preferred method

    - Laser conization
- Simple hysterectomy: removal of the uterus and cervix; vagina and parametrium are preserved
- Modified radical hysterectomy: en bloc removal of the uterus, cervix, upper ¼ of the vagina, and the parametrium
- Radical hysterectomy: en bloc removal of uterus, cervix, upper ⅓ to upper ½ of the vagina, the parametrium , and, if needed, resection of involved aspects of the adjacent organs
- Pelvic exenteration - A radical procedure that involves an en bloc resection of the uterus, ovaries, fallopian tubes, vagina, the lower urinary tract, rectosigmoid, and pelvic lymph nodes.
- Ovarian serous cystadenoma - Psammoma bodies
- Brenner tumor
    - Mostly small tumors with a solid component and calcifications
    - Encapsulated, pale yellow solid tumor
    - Circular patches of cells with coffee bean nuclei
- Mucinous cystadenocarcinoma - Pseudomyxoma peritonei
- Pseudomyxoma peritonei - Rupture of a mucinous cystadenoma or cystadenocarcinoma leading to the spread of tumor cells throughout the peritoneum. Mucinous cells cause gelatinous ascites and intraabdominal adhesions.
- Tumor markers of epithelial ovarian tumors - CA 125
- Struma ovarii (mature teratoma) - Symptoms of hyperthyroidism; struma pearl may be present
- Yolk sac tumor of the ovary (endodermal sinus tumor)
    - yellow, friable mass (due to hemorrhage)
    - Schiller-Duval bodies (resemble glomeruli on microscopy)
    - AFP is raised
- Dysgerminoma - presence of fried egg cells; raised LDH
- Non gestational choriocarcinoma - Ovarian crescent sign may be present; hCG is raised
- Embryonal carcinoma of the ovary - raised hCG or AFP
- Ovarian fibroma - May be associated with Meigs syndrome
- Meig syndrome - ascites and pleural effusion in association with a benign ovarian tumor
- Theca cell tumor (thecoma) - estrogen production
- Sertoli leydig cell tumor - Seminiferous-like tubules lined by Sertoli cells and Reinke crystals
- Granulosa cells tumors - Call-Exner bodies; tumor marker inhibin
- Call-Exner bodies are characteristic of Granulosa cell tumors: “Call your Ex and Grandparents!”
- Anterior vaginal wall prolapse: can be due to weakness of the pubocervical fascia
- Posterior vaginal wall prolapse - can be due to weakness of the rectovaginal fascia
- Ovarian endometriosis
    - Gunshot lesions or powder-burn lesions
    - Ovarian endometriomas or chocolate cysts: cyst-like structures that contain blood, fluid, and menstrual debris

- Adenomyosis - benign disease characterized by the occurrence of endometrial tissue within the myometrium due to hyperplasia of the endometrial basal layer
- Endometriosis - Preponderance of hemosiderin laden macrophages due to cyclic hemorrhages into endometriomas
- Pregnancy loss can occur even in previously healthy pregnancies. If it occurs before 20 weeks' gestation (~ 10% of pregnancies), it is called miscarriage or spontaneous abortion. If it occurs after 20 weeks' gestation, it is called stillbirth or intrauterine fetal demise.
- GTD is classified into hydatidiform moles (molar pregnancy), which are subclassified into complete and partial moles, and gestational trophoblastic neoplasia (GTN), which is subclassified into choriocarcinoma, invasive moles, placental site trophoblastic tumors, and epithelioid trophoblastic tumors
- Complete mole: a type of hydatidiform mole typically resulting from fertilization by a single sperm of an abnormal egg that lacks maternal chromosomes
- Partial mole: a type of hydatidiform mole typically resulting from fertilization of an egg by two sperm or a diploid sperm
- Partial mole - positive p57 staining
- Fetal heartbeat present in partial mole while absent in complete mole
- Complete mole ultrasound - Echogenic mass interspersed with many hypoechogenic cystic spaces (referred to as “snowstorm”)
- Choriocarcinoma Chest x-ray: cannonball metastases (in hematogenous spread)
- TUVS for ectopic pregnancy - best initial imaging test for determining the location of the pregnancy
- Tubal ring sign (blob sign): an echogenic ring that surrounds an unruptured ectopic pregnancy
- In ectopic pregnancy, Methotrexate (MTX) is the treatment of choice.
- Nonurgent surgical management of ectopic pregnancy - laparoscopy (salpingostomy, i.e., removal of ectopic pregnancy without removing the affected fallopian tube (tube-conserving operation)
- Ruptured ectopic pregnancy - Laparotomy is preferred for large intraperitoneal bleeding or critically unstable patients, otherwise a laparoscopic approach is typically performed. Procedure: salpingectomy, i.e., partial or complete removal of the affected fallopian tube (does not preserve tube function)
- Primary infertility: infertility in persons who have never achieved pregnancy
- Secondary infertility: infertility in persons who have previously achieved at least one pregnancy
- Mullerian agenesis - Both of the Müllerian ducts fail to develop, leading to the absent or hypoplastic uterus, absent cervix, and vaginal agenesis (but functional ovaries)
- Unicornuate uterus - One of the Müllerian ducts fails to develop
- Didelphic uterus - Complete lack of Müllerian duct fusion → double uterus, double cervix, double vagina
- Intrauterine adhesions (Asherman syndrome) - endometrial adhesions or fibrosis
- Ovarian hyperstimulation syndrome - a potentially life-threatening complication of ovulation induction with exogenous human chorionic gonadotropin (hCG)

- Discharge in
  * Bacterial vaginosis - gray/milky, fishy odor
  * Trichomoniasis - frothy, yellow green, foul smelling
  * Vaginal yeast infection - white, crumbly and thick (cottage cheese like), odorless
  * Gonorrhea - purulent, creamy
  * Chlamydia - purulent, bloody
- Microscopic findings
  * Bacterial vaginosis - clue cells, positive whiff test
  * Trichomoniasis - flagellated protozoa
  * vaginal yeast infection - pseudohyphae
  * Gonorrhea - gram negative intracellular diplococci
  * Chlamydia - intracellular organisms that Gram stain poorly
- Partner therapy is recommended in most cases of STDs, particularly chlamydia, trichomoniasis, and gonorrhea. Bacterial vaginosis and vaginal yeast infection do not require treatment of the partner(s).
- Trichomoniasis - strawberry cervix (erythematous mucosa with petechiae)