**Female genital tract pathology**

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 **LEC 4**

***III. SEX CORD-STROMAL TUMORS:***

Usually benign and NON-cystic, “solid”, often functional (hyper-estrogen-ism)

 1- Granulosa cell tumor: secrete estrogen

 2- Sertoli-Leydig cell tumor: secrete androgens

 3- Fibroma/ thecoma.

**Granulosa cell tumor**

* Any age, two different type, adult form and juvenile form
* Unilateral
* Most elaborate large amount of estrogen and cause of precocious puberty.
* —in adults, is associated with endometrial hyperplasia or endometrial carcinoma.
* 5-25% are malignant, adult form only
* **Mic**. consists of small cuboidal, deeply staining granulosa cells arranged in anastomotic cords sheets, or strands with spindled or plump lipid laden theca cells.

—is characterized by **Call-Exner bodies**, small follicles filled with

eosinophilic secretion, an important diagnostic feature.

**Fibroma:**

Any age

Unilateral

Solid whitish

Most hormonally inactive

 Can produce hydrothorax and ascites (Meigs Syndrome)

Rarely malignant

Mic. Spindle cell proliferation

**Thecoma:**

Any age

Unilateral

Yellow

Can elaborate estrogen resulting in excess endogenous estrogen

Can also elaborate androgen resulting in hirsutism

**Sertoli Leydig Cell Tumor**

All ages

Unilateral, usually small

Gray to yellow brown

Composed of tubuli or cords and plump pink leydig cells

Most are androgenic

Small percentage are malignant

Gross: These tumors are usually yellow in color, high lipid content.

MIC. Uniform cell population, presence of crystals of Reinke are diagnostic.

**METASTATIC TUMOR**

Very common,

 The primary tumors is from abdominal and breast tumors.

**Krukenberg tumor**

A bilateral metastatic ovarian carcinoma, composed of mucin-producing signet ring cells, metastasizing from GIT, mostly from the stomach, it may produce pseudomyxoma peritonei like well differentiated appendicial tumors.

***Diseases of pregnancy***

 **Gestational trophoblastic disease: *3 morphological categories:***

1-hydatidiform mole (non invasive mole :partial or complete)

2-Invasive mole: Penetrates the uterine wall, produce hemorrhage but does not metastasize. - Responds well to chemotherapy.

3-choriocarcinoma: highly malignant metastasize into distant organs

***(1)Hydatidiform mole (H mole):***

*Voluminous mass of swollen sometimes cystically dilated chorionic villi, appear grossly as grape like structure,*

**It is of 2 subtypes:**

***A: Complete mole:*** characterized by:

\*Not permit embryogenesis & never contain fetal parts.

\* All chorionic villi are abnormal (hydropic changes--- cystic dilated).

\* The chorionic epith. cells are diploid (46XX or 46XY), it result from fertilization of empty egg by 2 sperms or diploid sperm.

\* Incidence of complete mole is much higher in ***Asian than Western countrie***s (1/1000 in USA while 1% in Indonesia), much more common ***before 20 & after 40yr. age***.

80-90% of moles remain benign after curettage, 10% of complete mole becomes invasive & 2-3% gives choriocarcinoma.

partial mole rarely develop choriocarcinoma

Grapelike clusters, i.e., swollen villi

**Clinically:** painless vaginal bleeding 12-14week after conception, when discovered early by ultrasound, uterus may or may not be too large for date but no fetal parts or heart sounds present.

 ***Lab test:*** *increase HCG present in maternal blood & urin*e, when discovered in 4th month of gestation---uterine cavity filled with delicate friable masses of thin wall translucent cystic structures without fetal parts.

**Mic:** hydropic swelling of villi & chorionic epithelia show some degree of proliferation of cyto & syncytial trophoblast.

***B: Partial mole:***

\* The villous edema ***involve only some villi*** & trophoblastic proliferation is focal & slight.

\* In Partial: compatible with early embryo formation, some villi are abnormal & almost always triploid (e.g 69XXY), normal egg fertilized by 2 sperms or diploid sperm.

In partial mole there are parts of fetus.\*

***80-90% of moles remain benign after curettage, 10% of complete mole becomes invasive & 2-3% gives choriocarcinoma.***

\* Patient with complete mole, monitoring the post curettage blood & urine level of HCG B unit permit detection of incomplete removal or more ominous complication & lead to institution of chemotherapy which is almost always curative.

***(2)Invasive mole:***

\* It is intermediate between benign mole & choriocarcinoma.

\* Invasive mole are complete moles that are more invasive locally (make it difficult to remove completely) but do not have aggressive metastatic capacity.

 ***Gross:*** There are hydropic villi which penetrate uterine wall deeply----rupture & life threatening hemorrhage, local spread to broad ligament & vagina also occur.

 ***Mic.:*** epithelium of villi have hyperplastic & atypical changes of trophoblastic components.

Hydropic villi may embolize to distant organs e.g lung, brain but these not constitute true metastases & may regress spontaneously.

Because invasive mole is difficult to remove completely by curettage, therefore HCG remain high & alert the clinician to the need for further treatment, cure is possible by chemotherapy.

***Choriocarcinoma(CC):***

\* ***Very aggressive malignant tumor***.

***Origin:***  arise *either from gestational trophoblastic epithelium (gestational choriocarcinoma).*

**Or,** *less frequently from totipotential cells within gonads (non gestational choriocarcinoma).*

***Incidence:*** much more *common in Asia & Africa than West*.

***Age incidence:*** the *risk greater before 20 & after 40 yr*.

**50% follow complete mole** & **rarely follow partial mole**, **25% after abortion** & most of the ***remainder occur in previously normal pregnancy.***

***Clinical presentation:***

\**Bloody brownish discharge.*

\**Increase titer of HCG B subunit in blood & urine* (much higher than with mole).

\**Absence of marked uterine enlargement*.

***GROSS:*** *very hemorrhagic, necrotic masses within uterus,* sometimes complete necrosis may be occur, which make anatomic diagnosis difficult because of little viable parts of neoplasm, the primary tumor may self-destruct & only metastases will present.

***Mic:***

 *In contrast to H. mole & invasive mole, villi are not formed in choriocarcinoma*. The tumor is purely epithelial, composed of anaplastic cuboidal cytotrophoblst & syncytio trophoblast.

***Notes:***

\* By the time of diagnosis of choriocarcinoma, there is widespread dissemination of malignancy through blood to lung, vagina, brain, liver & kidney.

\* Lymphatic invasion uncommon.

\* Despite aggressiveness, chemotherapy achieve 100% cure even with tumor that spread beyond pelvis, vagina & into the lung.

\* There is relatively poor response to chemotherapy in CC that arise in gonads (ovary & testis) due to presence of paternal Ag on placental choriocarcinoma but not on gonadal lesion, so maternal immune response against foreign(paternal Ag) help by acting as an adjuvant to chemotherapy.



