

Pathology of Fallopian Tube

Ectopic pregnancy

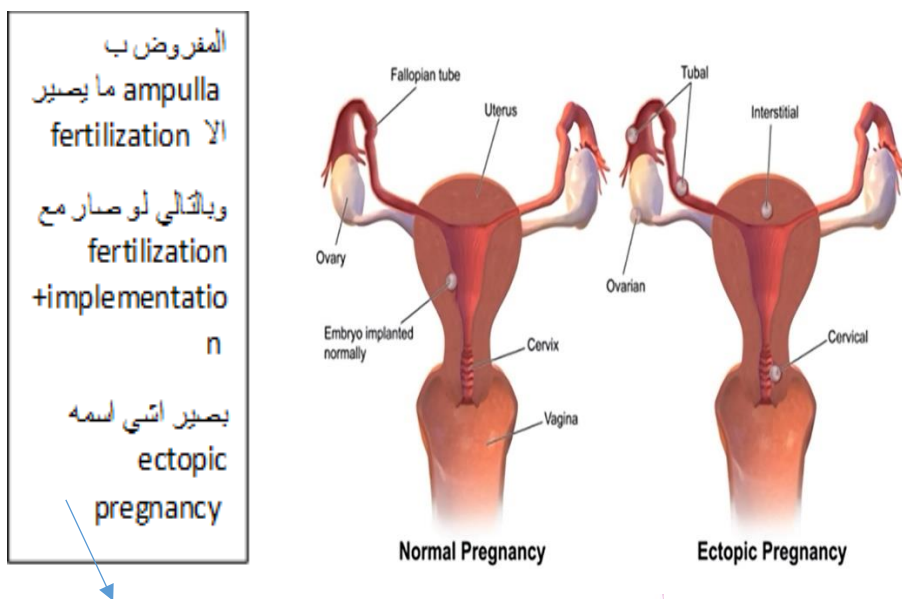
*implantation of the fertilized ovum outside uterus

*Incidence: 1%

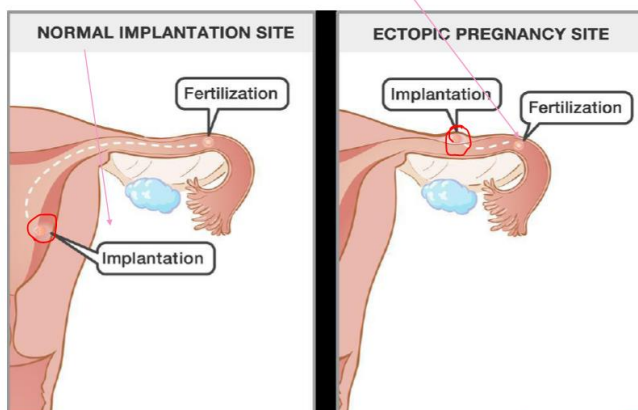
**site :

*90% of cases in fallopian tubes

*other sites: ovaries, abdominal cavity



Normal Versus ectopic pregnancy.



**Predisposing factors:

tubal obstruction (50%) PID (pelvic inflammatory disease); tumors; endometriosis; IUCD..

*In 50% : no anatomic cause can be demonstrated

****Grossly**

*Early:

EP in all sites is characterized by fairly normal early development of the embryo, with the formation of placental tissue, decidual changes & the amniotic sac.

*Later: the placenta burrows through tubal wall causing intratubal **hematoma (hematosalpinx) and intraperitoneal hemorrhage.**

****Symptoms and signs :**

*Until rupture occurs, EP may be indistinguishable from a normal pregnancy (because it is pregnancy but in abnormal site) with amenorrhea & elevation of serum & urinary hCG (Positive pregnancy test).

*Rupture of an EP may be catastrophic, with sudden onset of intense abdominal pain & signs of an acute abdomen, often followed by sever hemorrhage & hypovolemic shock.

****Prompt surgical intervention is life-saving + necessary.**

****Histological diagnosis & confirmation** depends on the visualization of the ® **placental villi or, rarely, of the embryo.**

*Under the influence of hCG, the **endometrium** undergoes characteristic hypersecretory & decidual changes called ® **Arias Stella Reaction** (in 50% of cases), But, as expected, there are **NO chorionic villi in the uterus.**

*However, the **absence** of elevated hCG levels & positive pregnancy test **does not exclude** the diagnosis of EP because poor attachment with necrosis of the placenta is common.

Tubal malignancy

*considered rare.

***most common histo. type is serous carcinoma.**

*increased in women with **BRCA mutations** (In studies of prophylactic oophorectomies:10% > occult foci of malignancy in fimbria).

*Because **of access to peritoneal cavity**, fallopian tube carcinomas frequently spread to omentum and peritoneal cavity at time of presentation (advanced

GESTATIONAL TROPHOBLASTIC DISEASE

**Gestational trophoblastic T are divided into 3 categories, ranging in their aggressiveness from the:

Gestational يعني حمل

Trophoblast وحدة من خلايا ال placenta

(I) **Benign, Complete & Partial Hydatidiform moles (HM),**

(II) **Invasive mole.**

هاد بخرم ال uterus بس ما بروج على الدم

(III) **highly malignant Choriocarcinomas(Chorioca).**

هاد بروج على الدم

****All trophoblastic T elaborate human chorionic gonadotropin (hCG),** which can be detected in the circulating blood & urine (used for the diagnosis of pregnancy) at titers considerably higher than those found during normal pregnancy ;the titers progressively rising from HM, to invasive mole, to Chorioca.

فحص الحمل ايجابي وهي مش حامل ببيني هي حامل ب placenta بدون ببيني

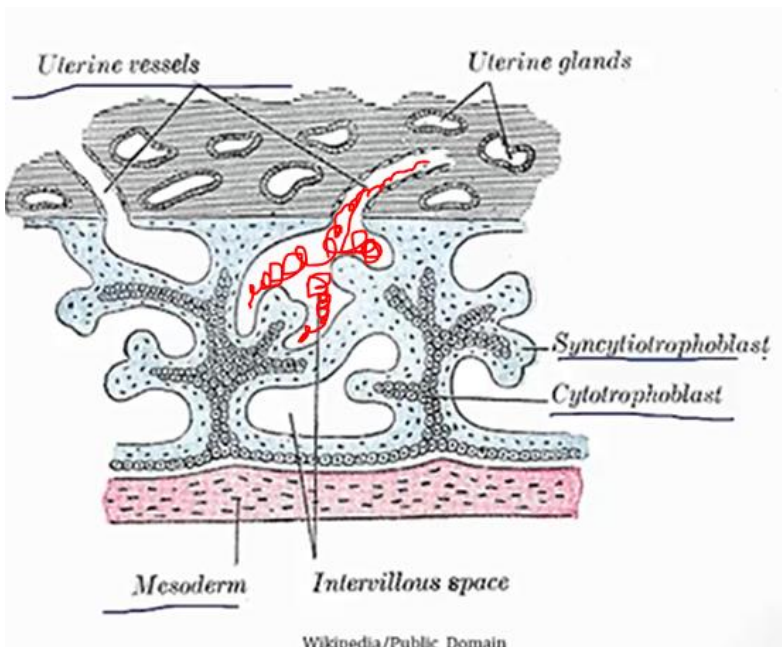
بطنها بكبر؟؟ بكبر اكثر من الحامل العادية كمان

**The fall or the rise in the hCG level in the blood or urine can be used also to monitor the effectiveness of treatment.

**Clinicians therefore prefer the term gestational trophoblastic disease, because the response to therapy as judged by the hCG titers is significantly more important than the anatomic segregation of one lesion from another.

Hydatidiform Mole (HM): Complete & Partial

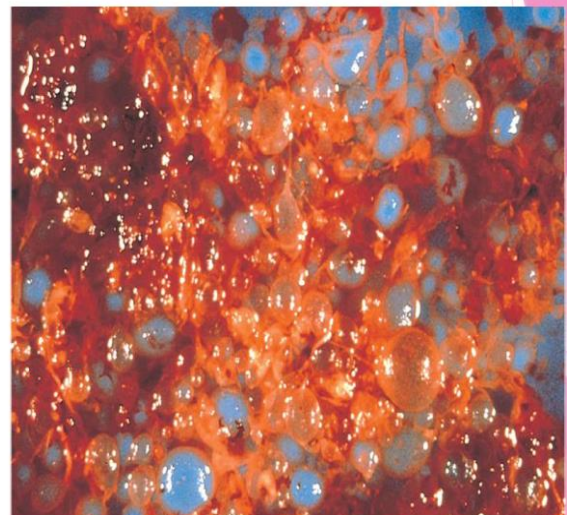
Typical HM appears grossly as **grape like structure, is a **voluminous**



هاي ال intervillous spaces رح تتعبي دم بدون ما يوخده حد لانه حكينا ما في بيبي يعني ما في mesoderm ورح تضل تتعبي وتنفخ وتتفخ وتصير زي عنا عناقيد العنب ويطنها تكبر وال placenta تنتفخ
ملاحظة :

Hydatid= fluid filled
mola = false pregnancy

Complete hydatidiform mole suspended in saline showing numerous swollen (hydropic) villi.



****The swollen villi are covered by varying amounts of normal to highly atypical chorionic epithelium.**

****HM is due to an abnormal contribution of paternal chromosomes in gestation.**

****Two distinctive subtypes of HM, complete & partial have been characterized & the 2 patterns result from abnormal fertilization, in which a:**

Complete كل ال chorionic villi انتفخوا مي لانه ما في طفل ف ما في استهلاك للمية ولا الغذاء

Partial هي حامل ب placenta واجزاء من طفل fetal part يعني الجنين بدأ يتكون بس لا يمكن انه يعيش اخره تلت اربه اشهر ورح يموت بالتالي جزء من villi منتفخ وجزء لا

طب قصة المرض ؟ كان يا مكان عنا 2 sperms من ملايين ال sperms قدروا يوصلوا ل ova وبعد الخناقة اتفقوا هما تتين يعملوا fertilization بذات الوقت وبعدين شووو اكتشفوا؟؟ انها فاضية empty egg عملوا مشكلة على ولا اشي (اخدوا اكبر مقلب بحياتهم (

صاروا يحكوا ما رح نرجع وايدينا فاضيين وما عملنا اشي راحوا عملوا placenta طب عدد الكروموسومات كم ؟ ٤٦ بس شو مالهم؟؟ بس من الاب paternal مومن الام ف مستحيل يتكون طفل يبقى هاد complete

طب القصة تانية ؟ 2 sperms راحوا على ova بس هالمره دخلوا مع بعض وما لاقوها فاضية

يعني كروموسومات من الاب والام يعني ٦٩ يعني رح يتكون fetus + placenta بس لا يمكن الطفل يعيش وهاد يعتبر partial

****طب uterus بأي الحالات يكون اكبر؟؟ complete بتكون بطنها منفوخة وكأنها بشهر رابع وهي اصلا بشهر الثاني**

****هون ال trophoblast بتكون بأسعد لحظات حياتها اكل بالهبل وكل الاكل الها بالتالي proliferation تبعها رح يزيد كثير ومن كتر هيك رح تنجن ويصير فيها atypia بس ب partial ما رح يصير لانه مش اوفر زي ال complete**

		Complete HM	Partial HM
Karyotype		an empty egg is fertilized by 2 spermatozoa (or a diploid sperm), yielding a diploid karyotype (46, XX or, uncommonly, 46, XY) composed entirely paternal genes .	A normal egg is fertilized by 2 spermatozoa (or a diploid sperm), resulting in a triploid karyotype (69, XXY) with a preponderance of paternal genes .
Grossly		in early HM, the uterus may be normal in size; but in fully developed HM the uterine cavity is larger than the expected date, filled with a delicate, friable mass of thin-walled, translucent cystic structures.	
		Fetal parts are not seen (does not permit embryogenesis & therefore never contains fetal parts)	in most cases of partial HM there is evidence of an embryo or which may be in the form of fetal RBCs in placental villi or in some cases, a fully formed fetus that, despite a triploid karyotype, is morphologically nearly normal in appearance.
Histology	Villous edema	*All villi *Hydropic swelling of chorionic villi, with loose, edematous & myxomatous stroma.	*involves only some of the villi >>> has some normal chorionic villi *note : villi have a characteristic irregular scalloped margin,
	trophoblastic proliferation	*Diffuse & circumferential *Proliferation of both cytotrophoblast & syncytiotrophoblast of the chorionic epithelium which may be mild, or striking circumferential hyperplasia	*focal & slight
	Atypia:	Often present	Absent
Progress to choriocarcinoma		10% of complete HMs are invasive, & 2% to 3% give rise to chorioca.	rarely give rise to choriocarcinomas
Serum hCG		Elevated	Less elevated
hCG in tissue		++++	+

****Complete HM incidence is about 1/1000 pregnancies in the US & other Western countries. For unknown reasons there is a much higher incidence in Asian countries.**

****HM are most common before age 20 years & after age 40 years, & a history of HM increase the risk in subsequent pregnancies.**

****HM is traditionally discovered at **12 to 14 weeks of pregnancy** because of a gestation that was "too large for dates," however;...**

*****An **early diagnosis** of HM can be done by**

(1) early monitoring of pregnancies by ultrasound (U/S) which reveal **typical absence of fetal parts, or fetal heart sounds,**

(2) by detecting elevations of hCG in the maternal blood .

*****Prognosis: Overall, 80% to 90% of HM do not recur after thorough **curettage**;**

curettage تمديد وكحت الرحم أو توسيع وكشط الرحم يشير إلى تمديد عنق الرحم والإزالة الجراحية لجزء من بطانة الرحم و/أو محتويات الرحم عن طريق الكشط والشفط. وهي عبارة عن تدخل علاجي بالإضافة إلى أنها الطريقة الأكثر شيوعاً في الإجهاض الذي يحدث في الثلث الأول من الحمل

****With complete HM, monitoring the post-curettage blood & urinary β -subunit of hCG concentrations, permits detection of incomplete removal or a more ominous complication which can be treated by **chemotherapy, which is almost always curative.****

هاي النقطة جدا مهمة ليه ؟ بعد علاج وتخلص من molar pregnancy لازم نضل نقيس hCG لانه لو انخفض اولها بعدين **ثبت** يعني صار عنا plateau وما كملت مستوياته بالانخفاض معناته في persistent disease يعني في جزء من complete تحول الى chrioca

Invasive Mole

****Invasive moles are complete HM that are more invasive locally but do not metastasize.**

****An invasive mole retains hydropic villi (which are absent in choriocarcinoma),**

****Microscopically** : the villi epithelium shows

(1) **atypical** hyperplastic cytotrophoblast & syncytiotrophoblasts proliferation &

(2) **penetration of the uterine wall deeply, possibly causing rupture& sometimes serous hemorrhage.**

****Local spread to the broad ligament & vagina may also occur.**

****Although they are invasive, metastases do not occur**

****Hydropic villi may embolize to distant organs, such as lungs or brain, but these emboli do not constitute true metastases & may actually regress spontaneously.**

****Invasive mole is **difficult to remove completely by curettage,** because of the greater depth of myometrium invasion.**

So, **serum hCG may remain elevated** & required further treatment by chemotherapy which is fortunately **curative** in most cases.

Choriocarcinoma (Chorioca)

****Very aggressive malignant T,** arises either from gestational chorionic epithelium or, less frequently, from **totipotential cells within the gonads (testis or ovary) or elsewhere**

اول اشئ بدنا نعرفه انه هو germ cell tumor بالتالي بنلاقي موجود بحالتين يلي فيهم germ cells او هي نفسها totipotential : اول حالة بعد الحمل

تاني حالة ب gonads يلي هما testis ب male و ovary ب female وبهاي الحالة ال germ cell بتعمل differentiation into trophoblast

Chorioca are **rare in the West, & in the US but are much more common (X15 fold) in Asian & African countries.

**The risk is more before age 20 & is significantly elevated after age 40.

*50%of chorioca arise in complete HM;

*25%arise after an abortion,

*25% occurs during what had been a normal pregnancy.

**Most chorioca are discovered by the appearance of (clinical presentation) :

(1) **bloody uterine discharge** accompanied by

(2) a **rising titer of β -hCG** in blood & urine (much higher than those associated with a HM),

(3) the **absence of marked uterine enlargement**, such as would be anticipated with a HM

ملاحظة ممكن كمان يجو بهاي الاعراض cough + hemopytsis هما متعلقين بال lung طب ليه؟؟ تحت بنعرف ليه

**Grossly,

chorioca is **very hemorrhagic**, necrotic T mass within the uterus, so much so that, sometimes, the histologic diagnosis is difficult. Indeed, the primary lesion may self-destruct, & only the metastases “mets” tell the story.

**Microscopically:,

in contrast to HM & invasive moles, the **chorionic villi are not formed** & are never seen; instead, the T is **purely epithelial**, composed of anaplastic cytotrophoblast& syncytiotrophoblast.

****spread :**

***Very early, the T invades into the myometrium & into BV.**

طب هاد الاشي حلو ولا بشع؟؟ حلو ليش؟؟ لانه بنبه المريض بأولها يعني من اول ما يبيلش ال tumor ببيلش يعمل metastasis واعراض بنبهنا والحلو بالموضوع انه يستجيب ل chemotherapy

***When discovered, most chorioca are widely disseminated via the blood, most often to the lungs (50%), vagina (30% to 40%), brain, liver, & kidneys.**

*Lymphatic invasion is uncommon

*Despite the extreme aggressiveness of chorioca, which made them uniformly fatal in the past, **chemotherapy** has achieved remarkable results with nearly 100% cure, even with T that have spread beyond the pelvis & vagina & into the lungs.

*Equally remarkable are reports of healthy infants born later to these survivors!

***By contrast, there is poor response to chemotherapy in chorioca that arise in the gonads(ovary or testis).**

مو حكينا انه ممكن يصير بال gonads بس يختلف انه عن يلي بصير ب placenta انه يلي بصير ب gonads بتكون استجابته ل الكيموثيرابي مو منيحة زي يلي بصير placenta طب شو سبب؟ الاجابة تحت

****This striking difference in prognosis may be related to the presence of paternal antigens on placental chorioca but not on gonadal lesions.**

****Conceivably, a maternal immune response against the foreign (paternal) antigens helps by acting as an adjunct to chemotherapy.**