



BACKGROUND

ECTOPIC PREGNANCY

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- Ectopic pregnancy is the most common cause of maternal death in the first trimester in US and the 4th cause of maternal death in UK.
- 9% death/pregnancy
- Incidence: # 2% of pregnancy and is increasing
- In US

	In <u>Tudu</u> hospital
➤ 1970: 17.000	2000: 1361
➤ 1990: 88.400	2010: 2804



CLINICAL



- Symptoms: **abdominal pain+ transvaginal bleeding+ pain adnexal mass**
 - 45% Ectopic pregnancy
 - Only 14% is EP indeed
- 20% EP without transvaginal bleeding or bleeding in the same time with menstrual cycle
- 1/3 EP without amenorrhea



BIOMETRY



- Immunofluorescence: (+) 9 days after fertilization (23th of menstrual cycle)
- Normal pregnancy:
 - HCG \uparrow double in two days
 - HCG =2000, visible gestational sac
- EP: **HCG \uparrow < 60% in two days.**



ULTRASOUND



ECTOPIC PREGNANCY



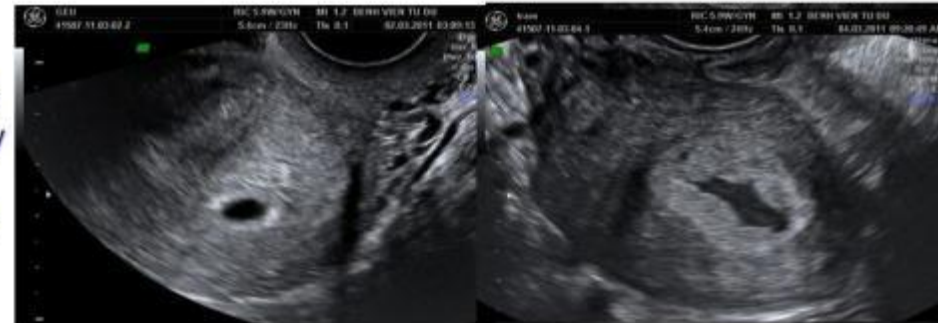
- A valuable imaging diagnostic method of EP.
 - To determine it is a gestational sac, not a pseudosac.
 - To determine it is an intrauterine pregnancy, not a cervical phase of intrauterine miscarriage, Cesarean scar and cervical EP
 - To differentiate between types of EP: Interstitial pregnancy, cornual pregnancy, tubal pregnancy, abdominal pregnancy and ovarian pregnancy.



GESTATIONAL SAC



- | | |
|---|--|
| <ul style="list-style-type: none"> ➤ Gestational sac <ul style="list-style-type: none"> ➤ Located eccentrically ➤ Surrounded by an echogenic ring of <u>trophoblast</u> ➤ The endometrial midline echo is intact and the sac implanted below the endometrial surface. | <ul style="list-style-type: none"> ➤ Pseudosac <ul style="list-style-type: none"> ➤ Located centrally ➤ Follow the contour of the cavity and surrounded by a single layer of tissue ➤ The endometrial midline can not be seen. |
|---|--|





THE PREGNANCY IS INTRAUTERINE



- In the longitudinal section, there is the continuity between the gestational sac and the cervical canal.
- The gestational sac located above the level of internal os.



THE GESTATIONAL SAC LOCATED IN THE UPPER LATERAL ASPECT OF UTERINE CAVITY



- The gestational sac located in the upper lateral aspect of uterine cavity need to differentiate with Interstitial pregnancy.
- Intrauterine pregnancy:
 - Located medially to the interstitial part of the tube
 - Surrounded by a thick layer of tissue
 - The communication between the sac and the uterine cavity is wide



ANGULAR PREGNANCY



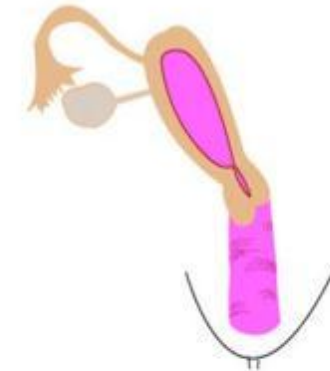
- In the past, the angular pregnancy is used to describe pregnancies located lateral aspect of uterine cavity, close to the tubal ostium. On laparoscopy, the sac located medial of round ligament.
- At present, with the modern US machine, we can differentiate between an intrauterine and ectopic pregnancy.
- **Angular pregnancy = Intrauterine pregnancy**



CORNUAL PREGNANCY



- A rare type of congenital uterine anomaly.
- In the majority of cases, a small non-communicating rudimentary horn can be seen adjacent to the unicornuate uterus.
- Pregnancy in rudimentary is EP because of risk of rupture in the second trimester.



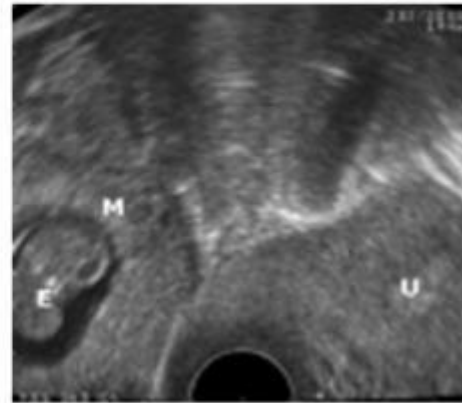


CORNUAL PREGNANCY



On Ultrasound:

1. A single interstitial portion
2. A mobile sac separate from the uterus surrounded by myometrium.
3. A vascular pedicle adjoining the sac and unicornuate uterus



INTERSTITIAL PREGNANCY

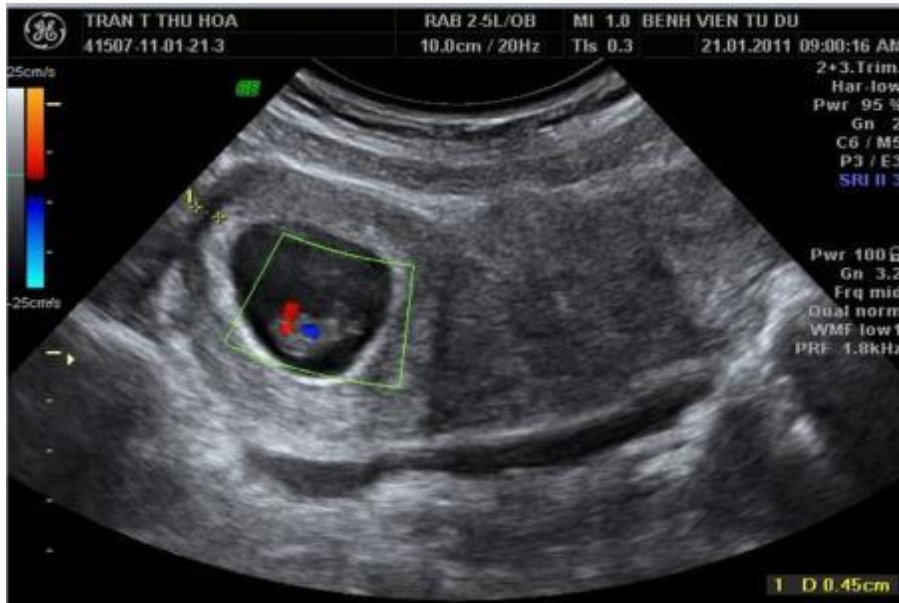


- Located in high fundus
- Surrounded by a thin myometrium <5mm
- Visualization of the interstitial line adjoining sac and lateral aspect of uterine (Sen:80%, Spec:98%)
- MR provide accurate diagnosis but not necessary.



INTERSTITIAL PREGNANCY





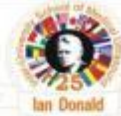
CESAREAN SCAR PREGNANCY



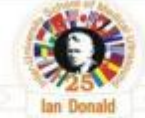
- Gestation sac located in anterior wall, at Cesarean scar.
- The myometrium between uterus and bladder is invisible or very thin.
- Different diagnosis:
 - Cervical EP
 - Intrauterine gestational age located low.



CESAREAN SCAR PREGNANCY



LOW LOCATED INTRAUTERINE PREGNANCY





CERVICAL EP



- Gestational sac located within the cervical canal, below the cervical internal os.
- Hourglass uterine shape with the ballooned cervical canal.
- Negative “Sliding organs sign”
- Closed internal os
- Different diagnosis: low located intrauterine sac, cervical phase of miscarriage, Cesarean scar EP.



CERVICAL EP



CERVICAL PHASE OF MISCARRIAGE



TUBAL EP



TRANSVAGINAL SCAN



" No evidence of intrauterine pregnancy+ adnexal mass"

➤ Non homogeneous adnexal mass

*Sen: 89-100%

*Spe:92-99%

(Callen 2000)



TRANSVAGIAL SCAN



" No evidence of intrauterine pregnancy+ adnexal mass"

➤ Ring - like structure mass
"Bagel sign"

Sen: 40-68%

*Spec:100%

(Callen 2000)





TRANSVAGINAL SCAN



" No evidence of intrauterine pregnancy+ adnexal mass

➤ A gestational sac with yolk sac or embryonic with heart beat (+)

*Sen: 8-34%

*Spec: 100%

(Callen 2000)

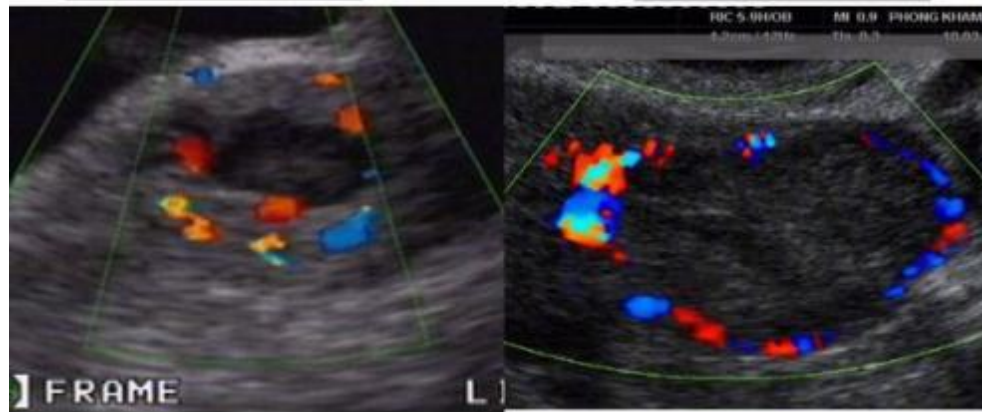


COLOUR DOPPLER



CORPUSLUTEUM CYST

ECTOPIC PREGNANCY



ABDOMINAL ECTOPIC PREGNANCY



- Women present with viable EP at advanced gestation.
- Typically occur following a rupture of tubal ectopic which then implant again within the peritoneal cavity.
- Most common located in the broad ligament and pouch of Douglas.



ABDOMINAL EP UNDER LIVER



ABDOMINAL EP IN LIVER

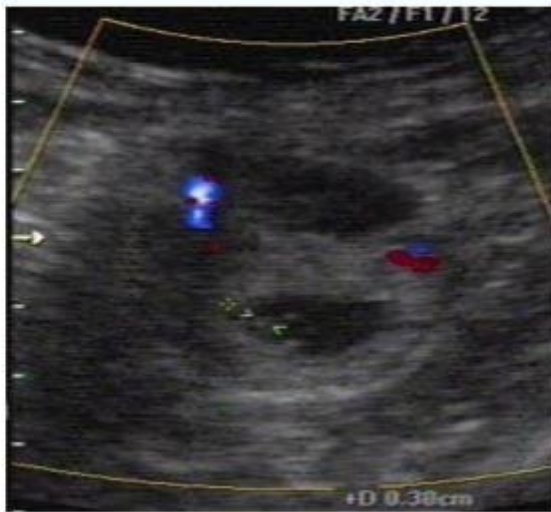
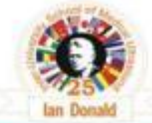


ABDOMINAL EP IN LIVER



LEFT AND RIGHT EP





Strategy for diagnosis EP:

1. Visible gestational sac intrauterine will help exclude EP
2. The gestational sac in uterine cavity is to exclude Cesarean scar, cervical EP
 - Continuity between gestational sac and cervical canal.
 - Located above the level of internal os.
3. Tubal is the most common type and 85% in the same side with corpus luteum.



THANK YOU



ANNKLEHRE