Introduction to Obstetrics

Obstetrical ultrasound provides pictures of an embryo or fetus within a woman's uterus, as well as the mother's uterus and ovaries

Preparation

1- full urinary bladder (in early pregnancy)

2- supine position

3- chose the probe

4- gain setting

Is ultrasound safe during pregnancy? Yes

Is a clinically normal pregnancy a good reason for using ultrasound?

there are two stages during a normal pregnancy when ultrasound scans will be the most useful and provide the most information.

These stages are:

1. **At 18-22 weeks after the first day of the woman's last menstrual period.**

2. **At 32-36 weeks after the first day of the woman's last menstrual period.**

What can be learned from an early scan (before 18 weeks)?

Ultrasound in the early weeks of pregnancy can:

1- confirm the pregnancy.

2- accurately estimate gestational age

3- locate the pregnancy (intra- or extra uterine).

4- recognize single or multiple pregnancy;

5- exclude molar pregnancy

6- exclude pseudo-pregnancy duet o a pelvic mass or hormone-secreting ovarian tumour

7- diagnose myomas or ovarian masses which might interfere with normal delivery

What is important in the 18-22 week scan?

This is the best time during pregnancy to:

1- establish the gestational age accurately.
2- diagnose multiple pregnancy.
3- diagnose fetal abnormalities.
4- locate the placenta and identify patients in whom there is a risk of placenta praevia.
5- recognize myomas or any other unexpected pelvic mass that may interfere with pregnancy or delivery

. What is important in the 32-36 weeks can ?

This is the best time during pregnancy to:

1- **recognize intrauterine growth retardation.**
2- recognize fetal anomalies that were not detected at the first scan.
3- confirm the presentation and position of the fetus.
4- locate the placenta accurately.
5- assess the amount of amniotic fluid
6- exclude possible complications, e.g. myoma, ovarian tumor.

Early pregnancy

- **In the first trimester, doctors use a trans vaginal or abdominal ultrasound .**
- **they take a series of measurements, including:**

1- the size of the gestational sac

2- the size of the yolk sac

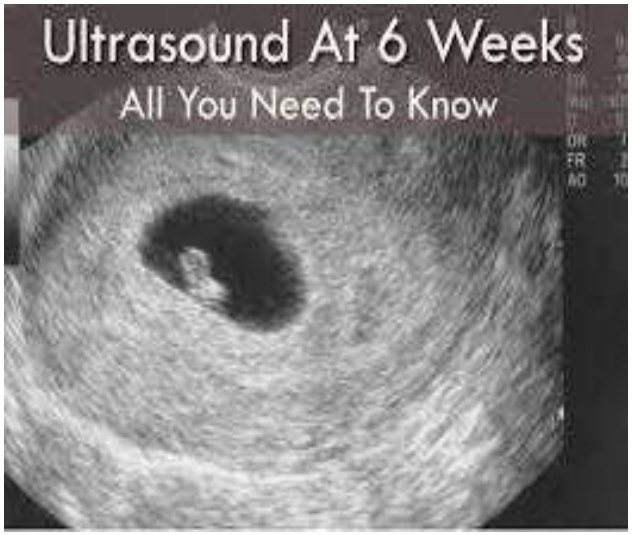
3- the length of the fetal pole

4- fetal heart rate.

Gestational sac can often be recognized in the uterus after five weeks of amenorrhea.

- **after 6 weeks gestational sac seen as a well defined "double echogenic ring" in the uterus . The inner ring is of uniform echogenicity and is 2 mm or more thick. Around it is a thin echogenic ring, which does not encircle the entire gestational sac.**

At 5-6 weeks, the greatest diameter of the gestational sac is approximately 1-2 cm.
At 8 weeks the sac should occupy half the uterus.
At 9 weeks it should take up two thirds of the uterus.
At 10 weeks it should fill the uterus.



The gestational age can be estimated from the mean dimension of the sac

- . Using a longitudinal scan, measure the maximum dimensions of the sac in the **long axis (length), antero-posterio**r (AP) dimension and **transverse scan**
- . **The mean dimension of the sac is the sum of these three measurements divided by 3.**

Mean GSD = (lenght + AP + width) ÷ 3

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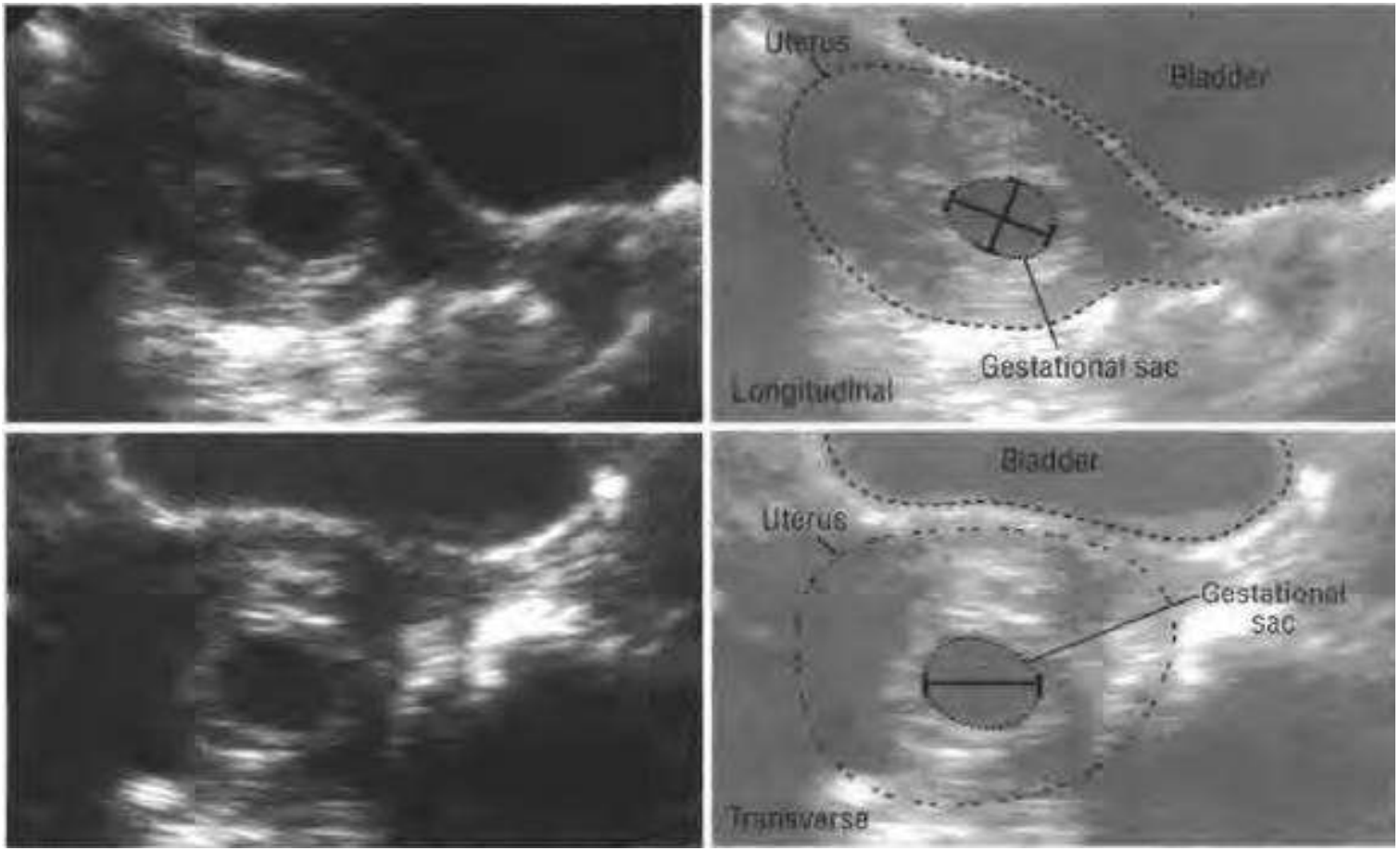

Ectopic pregnancy

- **If there is an ectopic pregnancy, a gestational sac may be seen outside the uterus.**
- **Sometimes there is a sac-like(pseudo sac) structure in the uterus.**
- **The real sac can be distinguished from the "pseudo sac" by the presence of fetal parts, a yolk sac within the real sac or by a single ring around the pseudo sac instead of a double ring**

Ovarian ectopic pregnancy