SELF ASSESSMENT MODULE ON ULTRASONOGRAPHY:
1ST TRIMESTER LOOKALIKES AND MISTAKES TO AVOID IN 2ND AND 3RD TRIMESTER
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Lecture 1: 1st Trimester Lookalikes, Mindy M. Horrow, MD, FACR

QUESTION 1: In which type of ectopic pregnancy is the gestational sac partially surrounded by myometrium?
  a. Tubal
  b. Interstitial – correct answer
  c. Cervical
  d. Ovarian

The interstitial (cornal) ectopic pregnancy is lodged in the intramural portion of the fallopian tube. As it grows and becomes visible, in the first trimester, a portion of the sac will be surrounded by myometrium, but a portion will only be surrounded by tube.

Reference:

QUESTION 2: The most commonly used ultrasound method of identifying monochorionic, diamniotic pregnancy at 6-7 weeks gestations is visualization of two:
  a. yolk sacs – correct answer
  b. amnions
  c. chorionic sacs
  d. placenta

A diamniotic pregnancy will necessarily have two amnions, but these are barely visible, if at all at 6-7 weeks. A monochorionic pregnancy has only one chorion (gestational sac) and only one placenta. The number of amnions equals the number of yolk sacs and since yolk sacs are well visualized at this stage, counting the yolk sacs is the best way of determining the amnionicity.

References:

QUESTION 3: A six week gestational sac is located lower in the uterus than normal. The most useful finding to differentiate an abortion in progress from a Cesarean scar implantation of a cervical ectopic pregnancy is:
  a. Presence of an embryo
  b. Subchorionic hemorrhage
  c. Extent of patient’s bleeding
  d. Presence/location of trophoblastic flow – correct answer

All three entities mentioned in this vignette; abortion in progress, cervical ectopic and cesarean scar ectopic, can have very similar appearances on ultrasound. In addition, since spontaneous abortion has such a greater prevalence, compared to these extremely rare types of ectopic pregnancy, just based on likelihood, an abnormally low sac will be an abortion in progress. Nonetheless, missing the diagnosis of these rare ectopic pregnancies can
have significant clinical consequences. The key factor is localization of trophoblastic flow as a marker for the site of implantation. Once an abnormally positioned gestational sac is identified, the pregnancy will not progress normally. Therefore, there is no harm in using color and even spectral Doppler to confirm the implantation site and potentially help diagnose a cervical or scar ectopic pregnancy.

References:

Lecture 2: Mistakes to Avoid in the 2nd and 3rd Trimester: Fetal Anatomy and Measurements, Mary C. Frates, MD, FACR

QUESTION 4: During a fetal survey at 26 weeks, the lateral cerebral ventricle is measured at 9.2 mm, 10.2 mm and 11.2 mm. How should this finding be reported?
   a. The fetal lateral ventricle measures between 9.2-11.2 mm. Additional evaluation is advised.
   b. The fetal lateral ventricle measures 11.2 mm indicating borderline ventriculomegaly. Additional evaluation is advised.
   c. There is mild hydrocephalus. Additional evaluation is advised.
   d. Normal. – correct answer

When a variety of measurements are obtained of the fetal ventricle, the smallest measurement is correct. Technical errors in measurement will always result in a larger measurement, and will never under measure the true size of the ventricle.

References

QUESTION 5: When evaluating the fetal posterior fossa at 26 weeks gestational age, if a normal vermis is not identified, possible explanations include:
   a. The fetal gestational age is early in the third trimester and the vermis has not completely formed.
   b. The vermis is absent indicating Dandy Walker variant – correct answer
   c. There is a mega cisterna magna.
   d. The angle of interrogation is not coronal enough.

The vermis forms completely by 20 weeks, and is present in cases of mega cisterna magna. Coronal images of the posterior fossa create an image suggesting the vermis is missing, so making the image more coronal will make a normal vermis less visible.

References:

Question 6: Measurements of the fetal abdomen can be inaccurate due to any of the following except:
   a. Oblique plane of measurement
   b. Poor visualization of the fetal skin surfaces due to overlying fetal parts
   c. Severe oligohydramnios
   d. Maternal hypertension – correct answer

Options a, b and c can all contribute to difficulty in obtaining an accurate abdominal diameter. Maternal hypertension does not affect visualization of the fetal surfaces.

References: