Proposed SAM Questions – 2019 Annual Meeting

Session Name: Saturday ACernoon SAM Session A:OBSTETRICS
Speaker Name: Dolores Pretorius, MD
Title of your Talk: Fetal Heart Screening by the Numbers: 4CV, 3VV and 2 Outflows

QUESTION 1: Avoid questions that start with WHICH OF THE FOLLOWING

What is the correct direction of flow (toward or way and to the right or left of spine) in the aorta and pulmonary artery on color doppler imaging in the normal fetal heart?

A. The pulmonary artery should have flow going away from the left of the spine.
B. The aorta and the pulmonary artery should have flow going toward the right of the spine.
C. The pulmonary artery and aorta should have flow going toward the left of the spine.
D. The aorta should have flow going away from the right side of the spine.
E. The pulmonary artery should have flow going toward the left of the spine and the aorta should have flow going to the right of the spine.

CORRECT ANSWER: C

RATIONALIZATION FOR EACH OPTION:

A. Incorrect. The flow should be toward the spine in the pulmonary artery, if it is reversed then the fetus is at risk for pulmonic stenosis.
B. Incorrect. The aorta and pulmonary artery should indeed have flow going toward the spine, but not to the right, that would be a right aortic arch and a right ductus.
C. Correct. The pulmonary artery and aorta should have flow going toward the left of the spine, thus having a normal left aortic arch.
D. Incorrect. The aorta should have flow going toward the spine, not away from the spine. In addition, it should go to the left of the spine and be a normal left aortic arch. A right aortic arch can be a normal anatomic variant however it is associated with congenital heart disease such as Tetralogy of Fallot.
E. Incorrect. The pulmonary artery should have flow going toward the left of the spine but the aorta should also go to the left of the spine; when the aorta goes to the right, as in this case, the fetus is at risk for a vascular ring and the fetus should be delivered in a tertiary hospital if there is stridor at delivery.

REFERENCES:


QUESTION 2: Avoid questions that start with WHICH OF THE FOLLOWING

What is the correct relationship between the sizes of the superior vena cava (SVC), pulmonary artery (PA) and the aorta in the 3-vessel view on a normal fetal cardiac exam?

A. SVC is larger than aorta
B. SVC is larger than pulmonary artery
C. Pulmonary artery is larger than or equal to aorta
D. Pulmonary artery is smaller than aorta
E. Aorta is larger than pulmonary artery

CORRECT ANSWER: C

RATIONALIZATION FOR EACH OPTION:
A. Incorrect. SVC should be smaller than the aorta; if the SVC is larger then increased flow is present in the SVC, and the differential includes total anomalous pulmonary venous return, vein of Galen aneurysm or chest wall mass.
B. Incorrect. SVC should be smaller than the pulmonary artery and the aorta. If it is larger, then increased flow is present in the SVC, as above.
C. Correct. The pulmonary artery should be larger or equal in size to the aorta in the normal fetus.
D. Incorrect. When the pulmonary artery is smaller than the aorta, congenital heart disease should be suspected. Tetralogy of Fallot with pulmonic stenosis is a common reason to have the pulmonary artery smaller than the aorta.
E. Incorrect. The aorta should be smaller than the pulmonary artery. If the aorta is larger than the pulmonary artery, congenital heart disease such as pulmonic stenosis should be suspected.

REFERENCES:

**QUESTION 3:** Avoid questions that start with WHICH OF THE FOLLOWING

The four chamber view is usually normal in appearance in what congenital heart lesions in the fetus?

A. Transposition of the great vessels  
B. Hypoplastic left heart  
C. Coarctation of the aorta  
D. Ebstein Anomaly  
E. Atrioventricular septal defect

**CORRECT ANSWER:** A

**RATIONALIZATION FOR EACH OPTION:**

A. Correct. The diagnosis of transposition of the great vessels is generally made by seeing parallel outflow tracts when evaluating the left ventricular outflow tract view or in seeing an abnormal 3-vessel view. The four chamber view generally appears normal although occasionally the cardiac axis is abnormal.

B. Incorrect. The left ventricle and left atrium are small in hypoplastic left heart.

C. Incorrect. The right heart is larger than the left heart in coarctation of the aorta.

D. Incorrect. The right atrium is enlarged in Ebstein Anomaly.

E. Incorrect. The mitral and tricuspid valves are at the same level in atrioventricular septal defect. In addition, the crux of the heart (where the ventricular and atrial septums meet) is absent during diastole when the mitral and tricuspid valves are open.

**REFERENCES:**


Proposed SAM Questions – 2019 Annual Meeting

**Session Name:** Obstetrics  
**Speaker Name:** Roya Sohaey  
**Title of your Talk:** Oh so subtle: Clues to Brain Malformations

**QUESTION 1:** Avoid questions that start with WHICH OF THE FOLLOWING

Isolated absent cavum septum pellucidi (CSP) is a fetal finding that raises suspicion for what diagnosis?

A. Trisomy 21  
B. Spina bifida  
C. Septo-optic dysplasia  
D. Joubert syndrome  
E. Turner syndrome

**CORRECT ANSWER:** C

**RATIONALIZATION FOR EACH OPTION:**

A. Mild ventriculomegaly is a marker for trisomy 21, not absent CSP  
B. Chiari 2 malformation, compression of the cerebellum, is the anomaly associated with spina bifida  
C. Absent CSP is often the only finding with septo-optic dysplasia diagnosis  
D. A dilated fourth ventricle and elongated cerebellar peduncles is the finding with Joubert syndrome  
E. Turner syndrome, is not associated with any “hallmark” brain anomalies

**REFERENCES:**

4. Click here to enter text.
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QUESTION 2: Avoid questions that start with WHICH OF THE FOLLOWING

What is the classic ventricular finding with isolated agenesis of the corpus callosum (Ag CC)?

A. Colpocephaly
B. Asymmetric ventriculomegaly
C. Dilated fourth ventricle
D. Mega cisterna magna
E. Choroid plexus cyst

CORRECT ANSWER: A

RATIONALIZATION FOR EACH OPTION:

A. Colpocephaly, seen on axial views of the fetal brain is characterized by “tear drop” shaped lateral ventricles (parallel divergent frontal horns and bulbous posterior lateral ventricle) and is a key feature of Ag CC
B. Asymmetric ventriculomegaly is present if there is a midline cyst + Ag CC (therefore, not isolated Ag CC)
C. The third ventricle is superiorly displaced and possibly dilated with Ag CC, not the fourth
D. Mega cisterna magna is not a classic finding in association with Ag CC
E. Choroid plexus cyst is not a classic finding in association with Ag CC

REFERENCES:

4. Click here to enter text.
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QUESTION 3: Avoid questions that start with WHICH OF THE FOLLOWING

What is the diagnosis if the cerebellar hemispheres are fused across the midline?

A. Chiari 2
B. Cerebellar hypoplasia
C. Joubert syndrome
D. Rhombencephalosynapsis
E. Lissencephaly

CORRECT ANSWER: D

RATIONALIZATION FOR EACH OPTION:
A. With Chari 2 malformation, the cerebellum is not fused, it is compressed because of a small hindbrain quarters
B. Cerebellar hypoplasia may be asymmetric but a vermis is usually present and the hemispheres are not fused
C. Dilated fourth ventricle with elongated cerebellar peduncles (Molar tooth sign) are key findings with Joubert syndrome
D. Rhombencephalosynapsis is characterized by a missing cerebellar vermis and fused cerebellar hemispheres
E. Lissencephaly is a disorder in which the brain surface is smooth because of diminished cortical convolutions.

REFERENCES:
4. Click here to enter text.
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QUESTION 1: Avoid questions that start with WHICH OF THE FOLLOWING 🚫

If at the time of the routine obstetric sonogram at 18-20 weeks' gestation the placenta extends onto the cervix then the recommendation for an asymptomatic patient is:

A. no need for follow-up ultrasound as the placenta will “migrate”.
B. follow-up sonogram in approximately 4 weeks, prior to 24 weeks’ gestation.
C. follow-up sonogram at 28 weeks’ gestation.
D. follow-up sonogram at 32 weeks’ gestation.
E. follow-up sonogram only if bleeding occurs.

CORRECT ANSWER: D.

RATIONALIZATION FOR EACH OPTION:

A. Incorrect. Follow-up sonogram to reassess placental location is necessary. Resolution of previa may occur.
B. Incorrect. The guidelines recommend follow-up ultrasound examination at 32 weeks’ gestation.
C. Incorrect. The guidelines recommend follow-up ultrasound examination at 32 weeks’ gestation.
D. CORRECT. In this setting, the guidelines recommend follow-up ultrasound examination at 32 weeks’ gestation to assess for previa (need to address relationship of the placental edge with the internal cervical os).
E. Incorrect. Follow-up sonogram to reassess placental location prior to delivery is necessary even if the patient remains asymptomatic.

REFERENCES:

QUESTION 2: Avoid questions that start with WHICH OF THE FOLLOWING
What is Vasa previa, detected by careful in utero ultrasound with attention to the cervix using Doppler techniques, most likely associated with?

A. Circumvallate placenta.
B. Placenta accreta spectrum disorder.
C. Prior cesarean section.
D. Uterine synechiae.
E. Velamentous insertion of the umbilical cord.

CORRECT ANSWER: E.

RATIONALIZATION FOR EACH OPTION:
A. Incorrect. Vasa previa is reported to develop in 2 settings: either with a velamentous cord insertion or with a succenturiate placenta. Circumvallate placenta is not a reported risk factor.
B. Incorrect. Vasa previa is reported to develop in 2 settings: either with a velamentous cord insertion or with a succenturiate placenta. Placenta accreta spectrum disorder is not a reported risk factor.
C. Incorrect. Vasa previa is reported to develop in 2 settings: either with a velamentous cord insertion or with a succenturiate placenta. Prior cesarean section is not a reported risk factor.
D. Incorrect. Vasa previa is reported to develop in 2 settings: either with a velamentous cord insertion or with a succenturiate placenta. Uterine synechiae is not a reported risk factor.
E. CORRECT. Vasa previa is reported to develop in 2 settings: either with a velamentous cord insertion or with a succenturiate placenta. Each of these causes is reported to account for approximately 50% of prenatally diagnosed vasa previa cases.

REFERENCES:

QUESTION 3: Avoid questions that start with WHICH OF THE FOLLOWING
In a patient with prior cesarean section and placenta previa, what is the sonographic feature most suggestive of placenta accreta spectrum disorder (PASD) or placental invasion?

A. Multiple irregularly shaped vascular spaces with turbulent flow termed lacunae.
B. Thickening of the retroplacental myometrium.
C. Decreased vascularity of the bladder-serosal interface.
D. Continuous echogenic interface between the maternal bladder and the uterine serosa.
E. Prominent hypoechoic area between the placenta and the wall of the uterus.

CORRECT ANSWER: A.

RATIONALIZATION FOR EACH OPTION:

A. CORRECT. The sonographic observation of multiple vascular lacunae within the placenta is reported to have higher positive predictive value for placental invasion than other ultrasound findings.

B. Incorrect. Thinning of the retroplacental myometrium is a sonographic finding associated with placental invasion.

C. Incorrect. Increased vascularity of the bladder-serosal interface is a sonographic finding associated with placental invasion.

D. Incorrect. Disruption of the echogenic interface between the maternal bladder and the uterine serosa is a sonographic finding associated with placental invasion.

E. Incorrect. Loss of the normal hypoechoic area between the placenta and the wall of the uterus (retroplacental clear space) is a sonographic finding associated with placental invasion.

REFERENCES:

4. Placenta accreta spectrum Obstetric Care Consensus No. 7. ACOG Obstet Gynecol 132:e259, 2018
Proposed SAM Questions – 2019 Annual Meeting

Session Name: OBSTETRICS Saturday 1:00-5:00pm
Speaker Name: Catherine Phillips
Title of your Talk: Seek and You Shall Find: First Trimester Anomalies

QUESTION 1: Avoid questions that start with WHICH OF THE FOLLOWING
Physiologic gut herniation should be resolved in virtually all fetuses by what gestational age?

A. 8 weeks
B. 10 weeks
C. 12 weeks
D. 14 weeks
E. Click here to enter text.

CORRECT ANSWER: D

RATIONALIZATION FOR EACH OPTION:
A. Physiologic gut herniation occurs during 8-12w gestational age
B. Physiologic gut herniation occurs during 8-12w gestational age
C. Physiologic gut herniation occurs during 8-12w gestational age
D. By 14 weeks, physiologic gut herniation should be resolved in virtually all fetuses
E. Click here to enter text.

REFERENCES:
3. Click here to enter text.
4. Click here to enter text.
5. Click here to enter text.
**QUESTION 2:** Avoid questions that start with WHICH OF THE FOLLOWING

In acardiac twin in twin reversed arterial perfusion (TRAP) sequence what statement is true?

A. The acardiac twin has no cardiac activity, but is otherwise normal in appearance
B. The pregnancy is always dichorionic
C. The acardiac twin has abnormal lower extremity development
D. Umbilical artery Doppler of the acardiac twin demonstrates arterial waveform going into the fetus
E. Umbilical artery Doppler of the normal twin demonstrates arterial waveform going into the fetus

**CORRECT ANSWER:** D

**RATIONALIZATION FOR EACH OPTION:**

A. The acardiac twin can have abnormal upper body development as well as skin edema
B. TRAP sequence occurs in monochorionic pregnancies
C. The acardiac twin has abnormal anatomic development above the level of the thorax
D. True
E. Umbilical artery Doppler of the normal twin demonstrates arterial waveform going out of the fetus

**REFERENCES:**

3. Click here to enter text.
4. Click here to enter text.
5. Click here to enter text.

**QUESTION 3:** Avoid questions that start with WHICH OF THE FOLLOWING

What is the finding seen in fetuses with anencephaly?

A. There will be a focal cranial defect through which brain and meninges herniates
B. The brain will be incompletely divided into hemispheres
C. An intact echogenic calvarium will be seen
D. Facial clefts will be seen
E. An abnormal forehead contour will be seen with absence of the cranial vault

**CORRECT ANSWER:** E

**RATIONALIZATION FOR EACH OPTION:**

A. This is characteristic of an encephalocele
B. This is characteristic of holoprosencephaly
C. This is characteristic of normal fetal head development
D. Not true
E. True
REFERENCES:


3. Click here to enter text.

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Proposed SAM Questions – 2019 Annual Meeting

Session Name: OB Ultrasound
Speaker Name: Tom Winter
Title of your Talk: “Routine 2nd Trimester Sonography – What to do with Those Pesky “Soft” Findings in 2019” or, “Why are Soft Signs so Hard?”

QUESTION 1: Avoid questions that start with WHICH OF THE FOLLOWING

Regarding the performance of the cfDNA test (single best answer) one of the following statements is right:

A. The best time to draw maternal blood is after 10 weeks EGA.
B. The test works better in high BMI patients.
C. “No calls” occur about 15% of the time.
D. An abnormal cfDNA result can be followed by TOP (termination of pregnancy) if desired.
E. The test works equally well in twin gestations as it does in singletons.

CORRECT ANSWER: A

RATIONALIZATION FOR EACH OPTION:
A. Before 10 weeks EGA, there is generally not enough circulating fetal DNA in maternal blood to get a reliable result.
B. Percent fetal cell-free DNA (cfDNA) decreases with increasing maternal weight
C. “No calls” occur less than 5% of the time in normal weight women
D. cfDNA is a screening technology. Positive results should be followed with definitive testing.
E. cfDNA testing in twins is much more problematic than in singletons.

REFERENCES:

QUESTION 2: Avoid questions that start with WHICH OF THE FOLLOWING

...
In the setting of a normal cfDNA result, what ultrasound findings does not require further management/evaluation? (single best answer):

A. Femur length < 2.5%.
B. Ventriculomegaly.
C. FEB (fetal echogenic bowel).
D. EIF (echogenic intracardiac focus).
E. Mild UTD (urinary tract dilatation).

CORRECT ANSWER: D

RATIONALIZATION FOR EACH OPTION:
A. Even in isolation, a femur that is this short should be followed with a 3rd trimester ultrasound.
B. Ventriculomegaly needs extensive evaluation.
C. FEB needs additional testing for non-aneuploid etiologies.
D. EIF has no significance other than a weak association with aneuploidy. Thus, if the cfDNA is normal, no further evaluation is necessary.
E. Mild UTD has potential structural significance, so a follow-up ultrasound at 32 weeks is needed.

REFERENCES:
2. Click here to enter text.
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QUESTION 3: Avoid questions that start with WHICH OF THE FOLLOWING
Regarding second trimester markers, all of the following are true EXCEPT:

A. In the setting of a CPC (choroid plexus cyst), it is particularly important to examine the fetal heart and hands.
B. The presence of an EIF (echogenic intracardiac focus) may be impacted by maternal ethnicity and/or weight.
C. FEB (fetal echogenic bowel) should not be called until its presence has been confirmed with a high-frequency transducer.
D. Mild UTD in the fetus may be influenced by maternal hydration status.
E. When assessing for ventriculomegaly, the shortest measurement is usually the most accurate.

CORRECT ANSWER: C

RATIONALIZATION FOR EACH OPTION:
A. Congenital heart disease and an abnormal configuration of the hands are associated with trisomy 18.
B. EIF is seen less often in high-BMI individuals and more often in patients of Asian ethnicity.
C. FEB may be a technical artifact at high transducer frequencies, so confirmation requires a low-frequency transducer.
D. Maternal hydration is associated with mild UTD in the fetus.
E. True, since oblique measurements artifactually increase the measured ventricular width.

REFERENCES:
4. Click here to enter text.
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1. What is the diagnosis when there is oligohydramnios in one sac and polyhydramnios in the other sac in a monochorionic diamniotic twin pregnancy?

   A. Twin to Twin Transfusion syndrome
   B. Twin Reversed Arterial Perfusion Sequence
   C. Twin Anemia Polycythemia Sequence
   D. Selective Fetal Growth Restriction

Correct answer : A

Rationale:

The presence of oligohydramnios in one sac and polyhydramnios in the other sac in a monochorionic diamniotic twin pregnancy is the hallmark finding in twin to twin transfusion syndrome. Twin reversed arterial perfusion sequence and twin anemia polycythemia sequence are not associated with significant amniotic fluid differences between the sacs. In selective fetal growth restriction there may be oligohydramnios in association with growth restriction in the smaller twin but fluid around the normally-grown twin will be normal.

Refs:


2. What is the most important thing to do in the sonographic assessment of severe oligohydramnios?

A. Transvaginal ultrasound
B. Identify fetal kidneys and bladder
C. Measure chest circumference
D. Umbilical artery Doppler

Correct answer : B

Rationale:
First check for a history of leaking fluid. If lack of amniotic fluid is due to premature rupture of membranes (PROM) the pregnancy may have a good outcome depending on the gestational age at the time of rupture. If PROM is excluded, vaginal ultrasound is used to evaluate anatomy but it is contraindicated if there is PROM as it is thought to increase the risk of infection. The single most important thing to do is to differentiate lethal entities such as bilateral renal agenesis or bilateral multicystic dysplastic kidneys from other causes of oligohydramnios such as fetal growth restriction. Identification of normal kidneys and bladder. Umbilical artery Doppler is used to triage management of growth restriction. Chest circumference measurement is used in an effort to predict pulmonary hypoplasia as a complication of longstanding oligohydramnios.


3. What is the most common etiology for polyhydramnios?

   A. Duodenal obstruction
   B. Gestational diabetes
   C. Hydrops
   D. Idiopathic

Correct Answer ; D

Rationale:

Although idiopathic polyhydramnios is a diagnosis of exclusion used only after ruling out fetal structural anomaly and other identifiable causes 50-70% of cases of mild polyhydramnios fall into this category. Duodenal obstruction and gestational diabetes are important causes. Duodenal obstruction is diagnosed when the double bubble sign of a dilated stomach in continuity with a dilated duodenum is present. Oral glucose tolerance testing between 24 and 28 weeks is used to screen for gestational diabetes. Hydrops may be associated with polyhydramnios but it is not required to make the diagnosis.

Refs

