MULTIPLE CHOICE

OBSTETRICS - MIXED EXAM

1. Which finding is expected on a normal sagittal view of the diaphragm?

A. A thin hypoechoic curvilinear band separating the lung from the liver or stomach
B. Liver visualized within the thorax adjacent to the heart
C. Discontinuous diaphragm with bowel above the heart
D. Stomach visualized within the thorax above the heart

2. An echogenic intracardiac focus identified during a second-trimester anatomy survey is most commonly located in which cardiac chamber?

A. Left ventricle
B. Right ventricle
C. Left atrium
D. Right atrium

3. True or false: The cavum septi pellucidi is expected to be seen and documented as part of the routine second-trimester fetal anatomy survey.

A. True
B. False

4. Which biometric parameter is considered the single most important indicator of fetal growth and the parameter most affected by asymmetric growth restriction?

A. Abdominal circumference
B. Head circumference
C. Biparietal diameter
D. Femur length

5. Acrania refers to which sonographic finding?

A. Absence of brain tissue with an intact cranial vault
B. Absence of the cranial vault with brain tissue still present
C. Herniation of meninges through a skull defect
D. Failure of midline cleavage of the prosencephalon

6. A focal lucent area within the placenta showing swirling, low-velocity flow on color Doppler most likely represents:

A. Placental abruption
B. A placental venous lake
C. Chorioangioma
D. Placenta accreta lacuna with high-velocity turbulent flow

7. A fetus has shortened, bowed long bones, a narrow thorax with relatively normal-sized abdomen, frontal bossing, and a cloverleaf-shaped skull. Which skeletal dysplasia is most consistent?

A. Thanatophoric dysplasia
B. Achondrogenesis
C. Achondroplasia
D. Osteogenesis imperfecta type II

8. Colpocephaly refers to which sonographic appearance?

A. Disproportionate dilation of the occipital horns (atria) of the lateral ventricles
B. Cystic dilation of the fourth ventricle
C. A single midline ventricle
D. Dilation of the frontal horns only

9. Using the Grannum placental grading system, a placenta with scattered calcifications in the basal layer and indentations of the chorionic plate extending toward but not reaching the basal layer is best categorized as:

A. Grade 0
B. Grade II
C. Grade III
D. Grade I

10. Fetal microcephaly is most commonly defined sonographically as:

A. Head circumference more than 3 standard deviations below the mean for gestational age
B. Biparietal diameter at the 50th percentile
C. Atrial measurement greater than 10 mm
D. Cisterna magna greater than 10 mm

11. Which structure is normally seen as a thin echogenic line between the fetal lips on a coronal facial view and helps exclude a cleft lip?

A. Nasal bone
B. Tongue
C. Hard palate
D. Intact philtrum and upper lip

12. A persistent fetal heart rate below approximately 100 bpm in the second or third trimester is best classified as which of the following?

A. Normal acceleration response
B. Fetal bradycardia warranting evaluation
C. Fetal tachyarrhythmia
D. Normal fetal heart rate variant

13. Cystic hygroma identified in the first trimester is most strongly associated with which aneuploidy?

A. Trisomy 18
B. Triploidy
C. Trisomy 13
D. Monosomy X (Turner syndrome)

14. Cardiac activity in the embryo should be reliably demonstrated by transvaginal sonography at what crown-rump length?

A. 2 mm
B. 7 mm
C. 16 mm
D. 5 mm

15. The amniotic fluid index (AFI) is measured by which technique?

A. Measuring the single deepest vertical pocket in the entire uterus
B. Averaging the anteroposterior diameters of any visible pockets
C. Measuring the largest horizontal pocket in each of four quadrants
D. Summing the deepest vertical pocket in each of four uterine quadrants, free of cord and fetal parts

16. Which sonographic finding, in addition to abnormal biometry, supports a diagnosis of intrauterine growth restriction rather than constitutional smallness?

A. Polyhydramnios
B. Increased subcutaneous fat on the fetal abdomen
C. Oligohydramnios
D. Normal amniotic fluid volume

17. Which approach is the standard method for sonographic measurement of cervical length in the second trimester?

A. Translabial with the patient in Trendelenburg
B. Transvaginal with a full maternal bladder
C. Transabdominal with a full maternal bladder
D. Transvaginal with an empty maternal bladder

18. A fetus measures small overall, with proportionally reduced head, abdomen, and limbs. This pattern is most consistent with which type of growth restriction?

A. Macrosomia
B. Constitutionally small for gestational age with normal interval growth
C. Asymmetric intrauterine growth restriction
D. Symmetric intrauterine growth restriction

19. Where is the umbilical artery Doppler sample typically obtained for clinical S/D ratio measurement?

A. Within an intrahepatic portion of the umbilical vein
B. At the placental cord insertion only
C. In a free-floating loop of cord, away from the placental and fetal cord insertions
D. At the fetal abdominal cord insertion only

20. An increased nuchal translucency measurement is most strongly associated with which aneuploidy?

A. Trisomy 13
B. Turner syndrome
C. Klinefelter syndrome
D. Trisomy 21

21. The normal shape of the secondary yolk sac on first-trimester sonography is which of the following?

A. Irregular and solid-appearing
B. Crescent shaped and hypoechoic
C. Triangular with a central echogenic focus
D. Round with an anechoic center and a thin echogenic rim

22. On the four-chamber view, the left ventricle is small and echogenic with a non-contractile myocardium, and the mitral valve does not open. Which diagnosis is most consistent?

A. Transposition of the great arteries
B. Hypoplastic left heart syndrome
C. Tetralogy of Fallot
D. Tricuspid atresia

23. How many vessels are present in a normal umbilical cord?

A. One artery and one vein
B. Two arteries and one vein
C. Three arteries
D. One artery and two veins

24. To obtain an accurate femur length, the femur should be oriented relative to the ultrasound beam in which way?

A. At a 45-degree oblique angle to the beam
B. With the proximal end angled away from the transducer to elongate the image
C. Parallel to the beam, with the shaft pointing toward the transducer
D. Perpendicular to the beam, with both ends of the diaphysis clearly seen

25. A partial hydatidiform mole is most often associated with which karyotype?

A. Monosomy X
B. Trisomy 21
C. Triploidy
D. 46,XX of paternal origin

26. Which mechanism best describes immune hydrops fetalis?

A. Parvovirus B19 suppression of fetal erythropoiesis
B. Twin-to-twin transfusion syndrome in monochorionic twins
C. Fetal cardiac dysfunction from a structural defect
D. Maternal red cell antibodies cross the placenta and cause fetal hemolytic anemia

27. Which estimated fetal weight percentile is the most widely used sonographic threshold for diagnosing a small-for-gestational-age or growth-restricted fetus?

A. Below the 10th percentile for gestational age
B. Below the 3rd percentile for gestational age
C. Below the 50th percentile for gestational age
D. Below the 25th percentile for gestational age

28. By what mean sac diameter should a yolk sac normally be visible with transvaginal sonography?

A. 25 mm

B. 16 mm
C. 5 mm
D. 8 mm

29. Which biophysical profile component is considered the most sensitive early indicator of fetal hypoxia?

A. Amniotic fluid volume
B. Gross body movement
C. Fetal tone
D. Fetal breathing movements

30. When establishing chorionicity in a twin pregnancy, sonographic identification of fetuses of different genders most reliably indicates which of the following?

A. Monochorionic diamniotic twins
B. Dichorionic, dizygotic twins
C. Indeterminate chorionicity
D. Monochorionic, monozygotic twins

31. In the first trimester, an abnormal ductus venosus a-wave is most strongly associated with which of the following?

A. A specific marker for neural tube defects
B. A reduced risk of preeclampsia
C. Increased risk of postdates pregnancy
D. Increased risk of aneuploidy and cardiac defects

32. At which fetal head landmark is the lateral ventricle measured to evaluate for ventriculomegaly?

A. At the occipital horn just anterior to the cisterna magna
B. At the frontal horn at the level of the cavum septi pellucidi
C. At the third ventricle between the thalami
D. At the atrium of the lateral ventricle, at the level of the glomus of the choroid plexus

33. Which structure is consistently absent in agenesis of the corpus callosum on prenatal sonography?

A. Cavum septi pellucidi
B. Falx cerebri
C. Lateral ventricles
D. Cerebellar vermis

34. Which of the following is NOT part of the classic Dandy-Walker malformation?

A. Inward scalloping of the frontal bones
B. Vermian agenesis or hypoplasia
C. Cystic dilation of the fourth ventricle
D. Enlargement of the posterior fossa

35. Which sonographic appearance describes normal fetal lungs in the second trimester?

A. Homogeneous, similar to or slightly less echogenic than the liver
B. Markedly hypoechoic compared with the heart
C. Coarse and heterogeneous with cystic spaces
D. Anechoic and fluid-filled

36. Cystic hygroma seen in the late first trimester is associated with what increased risk besides aneuploidy?

A. Nonimmune hydrops fetalis and fetal demise
B. Gestational diabetes
C. Maternal preeclampsia
D. Preterm premature rupture of membranes

37. The 'lemon sign' on second-trimester sonography refers to which finding?

A. Anterior curvature of the cerebellum effacing the cisterna magna
B. Single midline ventricle with fused thalami
C. Cystic dilation of the posterior fossa with vermian agenesis
D. Scalloping or concave indentation of the frontal bones of the fetal cranium

38. Counting yolk sacs in the first trimester is most useful for determining which feature of a twin pregnancy?

A. Zygosity
B. Gestational age

C. Chorionicity
D. Amnionicity

39. A transvaginal cervical length of less than 25 mm before 24 weeks gestation in a singleton pregnancy is most strongly associated with which outcome?

A. Placental abruption at term
B. Macrosomia at term
C. Increased risk of preterm birth
D. Increased risk of post-term pregnancy

40. Which maneuver is recommended during transvaginal cervical length assessment to unmask a dynamic short cervix?

A. Placing the patient supine without elevation
B. Asking the patient to perform a Valsalva for 30 minutes
C. Filling the maternal bladder
D. Application of transfundal pressure

41. A 'dangling choroid plexus' within a dilated lateral ventricle is a sonographic sign of:

A. A normal second-trimester ventricle
B. Dandy-Walker malformation
C. Holoprosencephaly
D. Ventriculomegaly or hydrocephalus

42. Absence of the fetal nasal bone on first-trimester sonography is most associated with which condition?

A. Hydrocephalus
B. Anencephaly
C. Trisomy 21
D. Spina bifida

43. Which combination of biometric findings is most consistent with symmetric, early-onset intrauterine growth restriction?

A. Normal BPD and HC with a small AC and elevated HC/AC ratio
B. Short FL with normal HC and AC
C. Large AC with polyhydramnios
D. Proportionally reduced BPD, HC, AC, and FL with a normal HC/AC ratio

44. A biophysical profile score of 4 out of 10 in a term pregnancy is most appropriately interpreted as which of the following?

A. Abnormal, suggesting probable fetal asphyxia and warranting delivery consideration
B. Equivocal, repeat in 24 hours regardless of gestational age
C. Normal fetal status, repeat in one week
D. Reassuring, follow with routine prenatal care

45. Which of the following is the most important risk factor for placenta accreta spectrum?

A. Advanced maternal age alone
B. Prior cesarean delivery in a patient with placenta previa
C. Twin gestation
D. Polyhydramnios

46. The cephalic index is calculated as:

A. BPD divided by head circumference, multiplied by 100
B. Head circumference divided by abdominal circumference, multiplied by 100
C. BPD divided by occipitofrontal diameter, multiplied by 100
D. Occipitofrontal diameter divided by BPD, multiplied by 100

47. At which anatomic landmarks is the femur length correctly measured?

A. Long axis of the diaphysis including the distal femoral epiphysis
B. Long axis of the diaphysis including both the femoral head and the distal epiphysis
C. Long axis of the ossified diaphysis from one end of the shaft to the other, excluding the distal femoral epiphysis
D. Oblique image of the femur to capture maximum length

48. Which of the following best differentiates a short femur as a soft marker for aneuploidy from constitutional short stature?

A. A femur length below the 50th percentile for gestational age
B. A symmetric reduction in all long bones with normal head and abdomen
C. A femur length below the 5th percentile in the third trimester only
D. A measured femur length significantly below the expected length for the biparietal diameter

49. Which biometric parameter most directly reflects fetal liver size and is therefore most sensitive to nutritional restriction?

A. Biparietal diameter
B. Femur length
C. Head circumference
D. Abdominal circumference

50. Heterotopic pregnancy refers to which combination?

A. An ectopic pregnancy with a coexisting molar pregnancy
B. Twin ectopic pregnancies in the same tube
C. Concurrent intrauterine and extrauterine pregnancies
D. Two intrauterine sacs in different uterine horns