ANSWERS: CHAPTER 20

MATCHING

1. ll 11. g 21. t 31. dd
2. aa 12. hh 22. k 32. p
3. i 13. w 23. ff 33. a
4. kk 14. f 24. c 34. bb
5. z 15. v 25. s 35. m
6. h 16. j 26. l 36. cc
7. jj 17. e 27. b 37. x
8. y 18. gg 28. r 38. n
9. ii 19. u 29. ee
10. o 20. d 30. q

IMAGE LABELING

1. coronal (frontal) plane
2. sagittal (longitudinal) plane
3. transverse (horizontal) plane
4. cephalic (vertex) facing maternal back
5. cephalic (vertex) facing maternal abdomen
6. transverse lie – head maternal right
7. complete breech
8. footling breech
9. frank breech
10. superior vena cava
11. foramen ovale
12. inferior vena cava
13. umbilical vein
14. umbilical arteries
15. ductus venosus
16. aorta
17. ductus arteriosus
18. aorta
19. Su
20. Po
21. An
22. In
23. Su
24. Rt
25. Lt
26. In
27. Cr
28. Dr
29. Vn
30. Ca
31. Cr
32. Rt
33. Lt
34. Ca

FILL-IN-THE-BLANK

1. dual imaging
2. diaphragm
3a. thick
3b. thin
3c. asymmetrical
4. one third
5. amniocentesis
6. breathing
7. transverse
8a. caudally
8b. cephalic
9a. color Doppler
9b. transversely
9c. following the vessels caudally to the internal iliac arteries (lateral to the bladder)
10. abdominal
11. as large or slightly larger
12. less
13a. vernix
13b. swallowed blood
14. renal arteries
15. anteroposterior
16. once per hour
17a. X
17b. dizygosity
18. cysts
19. soft tissue
20. trisomy

SHORT ANSWER

1. Select the highest frequency transducer that offers appropriate penetration. Adjust focal zones, angle correct the transducer, alter maternal position, attempt translabial/transvaginal if appropriate.

2. Ribs due to the curvilinear shape, scapula, vertebrae, and spine.

3. The transverse plane is used to visualize the spine ensuring the posterior elements are parallel to each other and do not diverge or splay outward from the central vertebral body. The presence of an intact skin surface overlying the individual vertebral bodies is a helpful secondary sign to rule out myelomeningocele (spina bifida). Sufficient surrounding amniotic fluid and some distance from the uterine wall surface is needed to image the skin surface adequately. Sagittal and coronal, with 3-D multiplanar views complete spine imaging.

4. If the 36-week fetus is positioned to allow visualization between the thighs, a penis and scrotum can be readily identified. If the legs are not open, a third trimester male scrotum will present inferior to the proximal femurs/inner thighs.

MULTIPLE CHOICE

1. d 6. b 11. a 16. b
2. c 7. d 12. b 17. d
3. a 8. a 13. c 18. c
4. a 9. c 14. d 19. b
5. c 10. d 15. c 20. a
5. Five millimeters of pelvic dilation up to 20 weeks and 8 mm of pelvic dilation between 20 to 40 weeks is considered normal.

**IMAGE EVALUATION/PATHOLOGY**

1. Both fetal kidneys are seen in a transverse fashion. The hypoechoic regions within each kidney are medullary pyramids.

2. Image A shows a longitudinal kidney with an adrenal positioned between the four arrows. Image B reveals a hypoechoic adrenal cortex and hyperechoic medulla.

3. The arrow is pointing to the fetal fluid-filled stomach. In this case, it is anechoic.

4. This is an accurately measured fetal abdomen demonstrating a left stomach and umbilical vein. The AC is 22.55 cm which equates to 27w0d.

5. The diaphragm, depicted by the arrows, is the curved, hypoechoic structure separating the thoracic and abdominal cavities.

**CASE STUDY**

1. Because it can be difficult to image the vertebral column, ribs, and thorax entirely as one image with 2-D ultrasound, 3-D was used to study this fetus. Multiplanar assessment of the ribs, thorax, and vertebral column demonstrate a normal bony thorax.

2. The hypoechoic structure seen on the image is the fetal thymus. It is positioned posterior to the sternum at the level of the great vessels or the heart and anterior to the aorta and pulmonary artery. Although the thymus is generally not seen on a fetal ultrasound, this image displays it well. Some studies have determined that IUGR is associated with a disproportionately small thymus.