**ANSWERS: CHAPTER 22**

**MATCHING**

1. c 4. d 7. i
2. g 5. f 8. h
3. b 6. a 9. e

**IMAGE LABELING**

1A. Arachnoid/dural layer
1B. Cerebral spinal fluid
1C. Vertebral bodies
1D. Disks
1E. Spinous processes
1F. Spinal cord
2A. Conus medullaris
2B. Filum terminale
2C. Nerve roots of the cauda equina
3A. Thecal sac
3B. S5
3C. S4
3D. S3
3E. S2
3F. S1
3G. L5
4A. Filum terminale
4B. Nerve roots

**MULTIPLE CHOICE**

1. c 6. d 11. d 16. a
2. d 7. a 12. d 17. b
3. d 8. c 13. c 18. d
4. c 9. b 14. c 19. a
5. c 10. b 15. c 20. b

**FILL-IN-THE-BLANK**

1. 3 months; 5 to 6 months; posterior
2. Cranio cervical; coccyx; conus medullaris; spinal cord
3. Cord; nerve root
4. Hypoechoic; hyperechoic; anechoic
5. Cervical; lumbar; nerves
6. Filum terminale; cauda equina
7. Dysraphism; open; skin; closed
8. Myelocoele; myelomeningocele
9. Filum terminale; lower limb; bowel; urinary
10. Anal; urogenital; VACTERL
11. L3; decreased; filum terminale
12. Diastomyelia; bony; fibrous; tethered; scoliosis; clubfoot; vertebral
13. Midline dimple; sacral dimple
14. Lipomyelocele; lipomyelomeningocele; intradural lipoma; filum terminale
15. Breech; edema; hematomyelia; hemorrhage

**SHORT ANSWER**

1. A high-frequency 8 to 15 MHz linear transducer is used to evaluate the spinal cord. A sector transducer may be used in older patients when the acoustic window is small. The patient is placed prone with his or her abdomen over a towel or pillow to round out the back. A decubitus position may also be used with the legs tucked in front of the body.

2. Tethered cord, spinal lipoma, dorsal dermal sinus, diastomyelia.

Hair tufts, sacral dimples or pits, pigment changes, hemangiomas, skin tags.

3. The vertebrae can either be counted up from the sacrum or down from the thoracolumbar junction. There are typically five sacral and five lumbar vertebrae. Starting at S5, count cephalad five vertebrae to the lumbar-sacral junction and then five more vertebrae to the thoracolumbar junction. The count can also be confirmed by locating T12 by following the last rib to the junction with the spine and counting the lumbar vertebrae caudally.

**IMAGE EVALUATION/PATHOLOGY**

1. Between L1 and L2

2. The arrow is pointing to a filar cyst. When present, a filar cyst is located just inferior to the tip of the conus medullaris.

3. The conus ends at S1, which is considered abnormally low. This is called a tethered cord. The conus normally ends between the level of L1 and L2.

4. A well-circumscribed, round, solid, echogenic mass is seen consistent with a filum lipoma.

**CASE STUDY**

1. A hypoechoic tract is seen travelling from the skin to the spinal column. The conus is seen to end at the level of L5–S1, so the conus is abnormally low and appears to be tethered. The cord is seen to continue past the level of L2.