ANSWERS: CHAPTER 15

MATCHING

1. n  8. u  15. y  22. j
2. g  9. z  16. h  23. c
3. o  10. i  17. l  24. q
4. t  11. w  18. b  25. f
5. e  12. m  19. p  26. r
6. k  13. d  20. v
7. a  14. x  21. s

IMAGE LABELING

1A. Superior pole
1B. Left lobe
1C. Isthmus
1D. Esophagus
1E. Trachea
1F. Inferior pole
1G. Right lobe
2A. Esophagus
2B. Trachea
2C. Parathyroid gland
2D. Thyroid gland
3A. Thyroid isthmus
3B. Left common carotid artery
3C. Left subclavian artery
3D. Aortic arch
3E. Brachiocephalic trunk
3F. Right subclavian artery
3G. Thyrocervical trunk
3H. Inferior thyroid artery
3I. Superior thyroid artery
3J. External carotid artery
4A. Longus colli muscle
4B. Internal jugular vein
4C. Common carotid artery
4D. Sternoleidomastoid muscle
4E. Omohyoid muscle
4F. Esophagus
4G. Trachea
4H. Thyroid gland
4I. Sternohyoid muscle
4J. Sternothyroid muscle
5A. Right common carotid artery
5B. Right thyroid lobe
5C. Trachea
5D. Left thyroid lobe
5E. Left common carotid artery
5F. Isthmus

FILL-IN-THE-BLANK

1. Endocrine; right; left; isthmus
2. 40 to 60 mm; 12 to 18 mm; 4 to 6 mm
3. Superior thyroid arteries; inferior thyroid arteries
4. Superior; middle; inferior
5. Posterior lateral; longus colli
6. Triiodothyronine (T3); thyroxine (T4); calcitonin; iodine
7. Hypothalmus; pituitary
8. Hyperthyroidism; hypothyroidism
9. Homogeneous; hyperechoic
10. Thyroglossal duct cysts; brachial cleft cysts
11. Fibrous capsule; hyperthyroidism; hypechoic halo; complex cyst
12. Nodularity; functional; multinodular
13. Thyrotoxicosis; T3; T4; Graves’; autoimmune
14. Hashimoto thyroiditis
15. Hypoechoic; microcalcifications; papillary
16. 20 to 50; women
17. Fine needle aspiration; 98%
18. Four; superior; posterior; inferior; posterior; inferior
19. Parathyroid hormone; calcium; phosphorous
20. All four glands; multiple; parathyroid adenoma

SHORT ANSWER

1. Graves’ disease, toxic multinodular goiter, hyperfunctioning thyroid nodules, follicular thyroid carcinoma, thyroiditis
   Increased cardiac output, tachycardia, loud heart sounds, goiter, weight loss, nausea, vomiting, excessive sweating, flushing, heat intolerance, hair loss, restlessness

2. Hashimoto thyroiditis
   Cold intolerance, constipation, weight gain, dry skin, muscle aches, headaches

3. Sterile technique is used as a 25-gauge needle is guided into the thyroid nodule using sonography. Two techniques can be used: a syringe can be used to create mild suction or the capillary action of the needle alone can be used. The needle is repeatedly moved back and forth within the nodule to collect cells and tissue, which are then submitted for cytological evaluation.

4. The parathyroid glands are typically located between the posteromedial thyroid gland and the longus colli muscle. The superior parathyroid glands are slightly more medial than the inferior parathyroid glands. They should lie medial to the carotid artery, posterior to the lateral lobe, and anterior to the longus colli muscle.

MULTIPLE CHOICE

2. a  7. c  12. c  17. c
3. c  8. d  13. d  18. b
4. c  9. a  14. c  19. d
5. c  10. a  15. b  20. b
5. Hyperparathyroidism is caused by a parathyroid adenoma in 80% to 85% of cases and parathyroid hyperplasia in 10% to 15% of cases. Elevated serum calcium levels, weight loss, dyspepsia, peptic ulcer disease, renal colic, kidney stones, bone and joint pain, and gout are possible clinical symptoms.

IMAGE EVALUATION/PATHOLOGY

1. A is the common carotid artery. The mass labeled B is a solid, hypoechoic mass with cystic components and a hypoechoic halo.

2. The three nodules are well-defined and very hypoechoic, almost anechoic, but without increased through transmission. Microcalcifications are seen in two of the nodules. Hypoechogenicity and microcalcifications are associated with malignancy.

3. Two of the lesions are complex lesions with both cystic and solid components. The posterior lesion is mostly cystic with solid components along the lateral wall. The lesions are well-defined. Cystic elements and a wider-than-tall lesion are associated with low risk for malignancy.

4. The gland is heterogeneous with multiple hypoechoic areas seen throughout the gland. The most likely diagnosis is Hashimoto thyroiditis.

5. The mass is solid, well-defined, heterogeneous, and mostly hypoechoic to the surrounding tissue. The most likely diagnosis is a parathyroid adenoma. A parathyroid adenoma may cause primary hyperparathyroidism.

CASE STUDY

1. There is a very large complex lesion seen in the mid-inferior pole of the right thyroid. The remainder of the gland appears normal. The lesion is well-defined, mostly solid, with a large cystic component. A fine-needle aspiration would help in confirming the diagnosis of this lesion.

2. The arrows are pointing to enlarged lymph nodes or lymphadenopathy that could be the result of metastases, lymphoma, lymphadenitis, or benign lymphadenitis.