ANSWERS: CHAPTER 4

MATCHING
1. f  8. l  15. aa  22. x
2. bb  9. z  16. c  23. d
3. u  10. j  17. b  24. k
4. o  11. q  18. i  25. y
5. g  12. p  19. e  26. n
6. w  13. h  20. r  27. t
7. a  14. s  21. m  28. v

MULTIPLE CHOICE
1. b  8. a  15. d  22. c
2. c  9. a  16. c  23. c
3. a  10. c  17. a  24. a
4. c  11. d  18. c  25. d
5. d  12. b  19. a  26. b
6. b  13. b  20. d  27. b
7. d  14. a  21. b

IMAGE LABELING
1. fallopian tube
2. isthmus
3. fundus of uterus
4. suspensory ligament of ovary
5. ampulla
6. infundibulum
7. fimbria
8. fallopian tube, abdominal end
9. secondary oocyte
10. corpus luteum of menstruation
11. uterine perimetrium (serosa)
12. uterine myometrium
13. uterine endometrium (glandular mucosa)
14. cervical canal
15. external os (cervix)
16. ovarian ligament
17. ovary
18. vesicular appendix
19. uterine cavity
20. broad ligament
21. internal os (cervix)
22. cervix
23. vagina
24. labium minus
25. primary oocyte
26. developing follicle
27. mature Graafian follicle
28. antrum filled with liquor folliculi
29. expulsion of secondary oocyte
30. corpus luteum of menstruation
31. menstrual
32. proliferative
33. secretory
34. premenstrual
35. follicle stimulating hormone (FSH)
36. luteinizing hormone (LH)
37. follicular phase
38. luteal phase
39. thin endometrium measurement using sagittal approach
40. focally thickened endometrium measurement using sagittal approach
41. fluid-filled endometrium using sagittal approach measuring each layer

FILL-IN-THE-BLANK
1. one million
2a. ovaries
2b. vagina
2c. internal
3a. fundus
3b. body
3c. cervix
4a. uterine tubes
4b. oviducts
5. ovum
6a. suspensory
6b. ovaries
7. brain
8. pituitary
9. hypothalamic
10a. growth
10b. prolactin
10c. adrenal
10d. thyroid-stimulating hormone (TSH)
11a. gonads
11b. endocrine
12a. stimulates
12b. FSH
12c. LH
13a. endometrium
13b. ovulation
14a. preovulatory
14b. ovulation
15. progesterone
16a. estrogen
16b. progesterone
17a. theca interna
17b. theca externa
18. placenta
19a. follicular
19b. ovulatory
19c. luteal
20. age of puberty
21a. midline sagittal
21b. basal
21c. excluded
22a. stratum compactum
22b. spongiosum
23. proliferative
24. hyperechoic
25. polycystic ovarian syndrome (PCOS)
26. hormone replacement therapy
27. estrogen
SHORT ANSWER

1. In a postmenopausal patient, the uterus becomes small and fibrotic because of myometrial atrophy. Because the endometrium also atrophies, thoroughly examine the organ. In the case of PMB (postmenopausal bleeding), consider imaging using transabdominal, transvaginal, and the multiplanar (3-D) approach. The endometrium is of special interest because bleeding can be caused by endometrial atrophy, endometrial polyps, submucosal fibroids, endometrial hyperplasia, endometrial carcinoma, or estrogen withdrawal.

2. Menstruation phase: as low as 1 mm; proliferative phase: 5 mm to 11 mm; secretory phase: 9 mm to 14 mm.

3. Corpus luteum. Progesterone thickens the endometrium prior to and during pregnancy until the placenta forms. The placenta secretes progesterone to maintain the pregnancy. Progesterone triggers the mucus in the cervix to thicken so that sperm or bacteria are less likely to enter the uterus, the development of new follicles is blocked, lactation is inhibited, and the contractility of uterine smooth muscle decreases.

4. Three major naturally occurring estrogens are estradiol, estriol, and estrone. They promote the development of female body contours, breast development, pubic and axillary hair growth, distribution of adipose, pelvic broadening, and voice pitch.

5. LH (luteinizing hormone) is secreted by the anterior pituitary gland and is necessary for growth of preovulatory follicles and luteinization, which is the transformation of a mature follicle into a corpus luteum, and ovulation of the dominant follicle.

IMAGE EVALUATION/PATHOLOGY

1. Image A demonstrates an ovary in the early follicular stage. The image was acquired endovaginally. Image B is a 3-D multiplanar reconstruction study.

2. The hypoechoic, anechoic, well-circumscribed structure is a corpus luteum cyst. Blood flow and measurements should be acquired for documentation and follow up if necessary.

CASE STUDY

1. Infrequent menstrual periods, excess hair growth, acne, obesity, and difficulty to become pregnant are common with PCOS (polycystic ovarian syndrome). Women with the disorder frequently have enlarged ovaries containing multiple small cysts. These cysts are usually located on the periphery of the ovary, which resembles a ‘string of pearl’.

2. The image demonstrates a postmenopausal endometrium fluid collection. The endometrial borders are well-circumscribed without protrusion or mass effect. The endometrium measures, in total, 1.5 mm, which is less than the guidelines of 4 mm for a postmenopausal woman.