

2024 Batch-Lecture No. 3

THE OVARIES AND FEMALE GENITAL TRACT:

Q. What are the names of female genital organs?

1. The generative organs of the female consists of the ovaries, and the tubular portion of the reproductive tract including the oviducts, uterus, cervix and the cranial portion of the vagina arising from the primitive mullerian or paramesonephric ducts and the vulva, vestibule and the caudal portion of the vagina develop from the uro-genital sinus.

THE OVARIES:

Q. Define Ovary.

2. The ovaries consist of a stroma or network of connective tissue and blood vessels surrounded by a covering of peritoneum except at the attached border or hilus where the vessels and nerves enter.

Q. Enlist the contents of ovaries

3. Within the ovaries are interstitial cells, primitive ova, developing or secondary ova or follicles, maturing or mature Graffian follicles, atretic or degenerating follicles, and developing, mature or degenerating corpora lutea.

Q. Describe support and attachment for the ovaries.

4. The ovary is supported and attached by the portion of broad ligament called meso-ovarium dorsally and laterally and by the utero-ovarian ligament medially.

Q. Describe blood and nerve supply.

5. The blood supply to the ovary is from the ovarian artery, and a branch of utero-ovarian artery.

6. The nerve supply is the autonomic nerves from the ovarian plexus that arises from the renal and aortic plexuses.

7. Ovaries increase in size as the animal becomes older.

CHARACTERISTICS OF OVARIES OF COW:

Q. What is the shape and the dimensions of ovaries in cow?

8. The ovaries in the cow are oval in shape and vary in size from 1.3 to 5 cm in length, 1.3 to 3.2 cm in width and 0.6 to 1.9 cm in thickness.

Q. Which ovary is larger in cow and why?

9. The right ovary is usually slightly larger than the left, since it is physiologically more active.

Q. How much the ovaries weigh?

10. Ovarian weight varies from 5 to 15 gms per ovary with the average weight of both ovaries in cattle of all ages being 19.5 gms.

Q. What are the important structures affecting the size of the ovaries?

11. The size of the ovary varies depending upon the structures present either corpora lutea or follicles.

Q. Describe location of the ovaries in cow?

12. The bovine ovaries are located on the cranial border of the broad ligament, occasionally under it, slightly cranial to the pelvic inlet and slightly cranial and lateral to the internal os of the cervix.

Q. Define ovarian bursa.

13. The pocket formed by the utero-ovarian ligament and the mesovarium is called the ovarian bursa or ventricle.

Q. Describe characteristics of ovarian follicle in cow.

14. The mature Graffian follicle is usually about 1.0 to 2.0 cm in diameter and smooth, convex, thin walled, and fluctuates on palpation

Q. Describe characteristics of Corpus Luteum in cow.

15. The corpus luteum is usually about 1.9-3.2 cm in diameter and may comprise up to $\frac{3}{4}$ of the size of the ovary.

- i. The corpus luteum of pregnancy and mature corpus luteum of the estrous cycle weigh from 3 to 9 gm or an average of 5 to 6.5 gm.
- ii. Its consistency is liver like.

- iii. It is usually, but not always, irregular in outline with a protrusion or crown that may be variable in size, from 0.5 to 1.5 cm in diameter extending 0.5 to 1.0 cm above the surface of the ovary.
- iv. About 3 to 5 days after ovulation the corpus luteum can be recognized by rectal palpation.
- v. About 3 days before the next ovulation the corpus luteum begins to regress in size, gradually atrophies and is replaced by connective tissue, the corpus albicans.
- vi. The corpus albicans replacing the corpus luteum of pregnancy is large, 2 to 5 mm and persists indefinitely.
- vii. These structures tend to make the old cow's ovary feel quite fibrous and roughened.

Q. How does the position of the ovary in the cow vary due to pregnancy?

16. The position of the ovary in the cow varies with the stage of pregnancy or with the size and contents of the uterus.

- i. During pregnancy the ovary tends to be drawn downward and forward into the abdominal cavity.
- ii. In older, pluriparous cows the ovaries and non-pregnant uterus often lie over the brim of the pelvis on the caudal floor of the abdominal cavity.
- iii. Usually by the fourth or fifth month of pregnancy the ovaries are drawn forward out of reach of the hand on rectal palpation.

CHARACTERISTICS OF OVARIES OF MARE:

Q. What is the shape and dimensions of the ovaries of mare?

17. In the mare the ovaries are bean-shaped and vary in size from 4-8 cm in length, 3-6 cm in width and 3 to 5 cm in thickness and weigh 30 to 90 gm.

Q. Describe the location of ovaries in mare.

18. They are suspended in the abdominal cavity by the meso-ovarium or cranial portion of the broad ligament

19. The ovaries are 5 to 7.5 cm, dorso-lateral to the uterine horns and joined to them by the utero-ovarian ligaments.

Q. Describe the characteristics of follicles in mare.

20. A few or several developing follicle 1.3 to 6.3 cm in diameter may be present in one or both ovaries.

21. Occasionally follicles may reach a size of 7.5 to 10.0 cm in which case the ovary is temporarily greatly enlarged.

Q. Describe the characteristics of corpus luteum in mare.

22. The corpus luteum in the mare is cauliflower shaped about 3/4" to 1" in diameter within the substance of ovary.

23. It cannot be palpated, except for several days after ovulation in the region of ovulation fossa.

24. It does not project above the surface of the ovary because of the dense, thick tunica albuginea investing the ovary of the mare.

Q. What is ovulation fossa in ovary of mare?

25. The free border or concave portion of the ovary in the mare is spoken of as ovulation fossa.

CHARACTERISTICS OF OVARIES IN EWES:

Q. What is shape and dimension of ovary in ewe?

26. In the ewe the ovaries are almond shaped, about 1.3 to 1.9 cm long resembling those in the cow.

CHARACTERISTICS OF OVARIES IN SOW:

Q. What is shape and dimension of ovary in sow?

27. In the sow the ovaries are oval in shape, weighing 3.5 to 10 gm but in maturity having a mulberry-like appearance due to multiple follicles and or corpora lutea.

Q. What are characteristics of porcine follicles?

28. Porcine ovarian follicles are normally about 7 to 8 mm and corpora lutea about 12 to 15 mm in diameter.

29. The location of the ovaries in gilts is approximately the same as in the cow.

30. Due to the long broad ligament, the location of the ovaries in the abdominal cavity in older cow is variable.

31. The sow's ovaries are almost completely covered in the bursa ovarii by the meso-salpinx.

CHARACTERISTICS OF OVARIES IN BITCH:

32. In the bitch the ovaries are oval in shape, 1.0 to 3 cm in length, 0.7 to 1.25 cm in width and 0.5 to 0.75 cm in thickness and firmly fastened just beneath the third and fourth lumbar vertebrae, 1 to 4 cm caudal to the corresponding kidney.

33. The ovaries are concealed in the bursa ovarii, which have a 0.6 to 2.0 cm slit-like opening ventrally.

34. The ovarian bursa in dogs usually contains fat.

35. The ovary in the dog, like that of the sow and cat, may be mulberry like in appearance due to multiple follicles or corpus lutea.

36. The corpora lutea contain no pigment.

CHARACTERISTICS OF OVARIES IN CAT:

37. The ovaries are similar to the dog but are suspended more ventrally in the abdominal cavity.

38. The ovaries are about 1 cm in diameter.

39. The ovarian bursa contains no fat.

40. There was no pigment in the corpora lutea of cats.

