

2024 Batch-Lecture No. 4

1. The tubular genital tract develops from the primitive para-mesonephric (Mullerian) duct system.
2. These primitive ducts, two in number, unite caudally in the region of the vagina, cervix and body of the uterus to form a long tube with various constrictions that is modified in structure and function to protect the female and the developing foetus.
3. The oviducts or fallopian tubes are about 20 to 30 cm long and about 1.5-3.0 mm in diameter in the mare and cow.
4. They are tortuous, wiry and hard, feeling nearly cartilaginous when rolled between the fingers.
5. They may be embedded in fat in the mesosalpinx, a portion of the broad ligament supporting the oviduct or salpinx.
6. The oviducts are difficult to palpate on rectal examination.
7. Bimanual vaginal and rectal examination often is of assistance in palpating the oviduct.
8. Another technique in the cow is to slip several fingers into the ovarian bursa or ventricle and palpate the oviduct between them and the thumb.
9. The distal or caudal, short segment, 1 to 3 cm in length, attached to the tip of the uterine horn is called the isthmus,
10. While the major portion of the oviduct from isthmus to the infundibulum is called the ampulla.
11. The diameter of the oviduct at the ovarian end becomes larger, 4 to 8 mm, and the oviduct becomes funnel shaped, the infundibulum.
12. From this funnel-shaped end of the oviduct arises the fimbriated portion or pavilion of the oviduct.
13. This has a partial attachment to the lateral side of the ovary and to the utero-ovarian ligament medially.
14. The uterine end of the oviduct in the dog and mare opens into the uterine lumen through a small slit on a mound or papilla.
15. In cattle and sheep there is a marked flexure at the transition of the isthmus with the elongated curving end of the uterine horn.
16. The latter has a very narrow lumen.

17. In the sow and dog the mucosa of the oviduct projects into the uterine lumen as folds well supplied with blood.
18. The oviduct of the sow is 15 to 30 cm long and that of the dog and cat is 4 to 7 cm long and has a slightly tortuous course around nearly the entire circumference of the ovarian bursa.
19. The blood supply of the oviduct is from the utero-ovarian artery.
20. The nerve supply is the same as that of the uterus and ovary.

THE UTERUS

1. The uterus is a muscular membranous structure designed for the reception of the fertilized ovum, for the nutrition and protection of the foetus, and for the initial stage of its expulsion at parturition.
2. The form of the uterus in animals varies with the degree of fusion of the para-mesonephric ducts. Four basic types of uteri are found in animals.
 - i. SIMPLE UTERUS: When a uterus has a pear-shaped body with no uterine horns, it is called simple uterus, e.g. human being and other primate
 - ii. BICORNUATE: When a uterus has a small uterine body and two long horns, it is called bicornuate uterus e.g. Cow, Ewe, Doe, Sow, Bitch, Queen.
 - iii. BIPARTITE: When a uterus has a prominent uterine body and two uterine horns that are not as long and distinct as in bicornuate type, it is called bipartite uterus e.g. Mare.
 - iv. DUPLEX: When a uterus has two uterine horns each with a separate cervical canal which opens into vagina, it is called duplex uterus e.g. rat, rabbit, guinea pig and other small animals.
3. The endometrium of the uterus in domestic animals is the only structure that can form sufficient placental attachment to result in normal development of the embryo and foetus.
4. In uniparous animals the placenta lies against the cervix, while in multiparous animals the placenta does not touch the cervix.
5. The muscular coat of the uterus is composed of smooth muscle in circular and longitudinal layers.
6. The uterus receives its blood supply from the middle uterine artery, the utero-ovarian artery and a branch of the internal pudendal artery.

7. Nerve supply to the uterus consists of sympathetic fibers from the lumbar and thoracic region forming the uterine and pelvic plexuses.
8. Nerve filaments from these plexuses supply the uterus, cervix, and proximal portion of the tubes.
9. Parasympathetic fibers originate from the first to third sacral nerves and reach the plexus by way of the pelvic nerves or nervi erigentes.

COW

1. In the cow the uterus is cornuate in shape, with the two uterine horns leaving the body of the uterus at an acute angle and lying nearly parallel to each other.
2. The body is about 2.5 to 4 cm long.
3. Depending on the age and breed of the cow the horns are 20 to 40 cm long and from 1.25 to 5 cm in diameter in the non pregnant state.
4. The horns are joined by the dorsal and ventral inter-cornual ligaments for about one-half their length.
5. The uterus is located either on the floor of the pelvis, on the pelvic brim, or most commonly in parous cows over the brim on the caudal floor of the abdominal cavity.
6. The uterus is usually dorsal or lateral to the bladder and is attached dorso-laterally by the broad ligament or the meso-metrium.
7. During pregnancy the uterus enlarges greatly and is drawn forward and down ward into the abdominal cavity.
8. The endometrium in ruminants has mushroom like non-glandular projections called caruncles.
9. These caruncles are arranged in four rows viz. two dorsal and two ventral rows.
10. Inter-caruncular spaces contain many blood vessels and uterine glands.
11. These caruncles are convex in shape and about 70-120 in number in cow.

EWE

1. In the ewe the uterus is shaped like that of the cow and located similarly.
2. Each horn is 10 to 12 cm long.

SOW

1. In the sow the uterine body is about 5 cm long with long tortuous horns that are freely movable because of the long broad ligaments.
2. In pregnant animals the horns may be 1.2 to 1.8 m long.

BITCH

1. In the nulliparous medium sized bitch the uterus has a short body, 2.5 cm long with straight horns 12 to 15 cm long and 0.5 to 1 cm in diameter that diverge at an acute angle toward the poles of each kidney.
2. Suspended from the sublumbar region by the broad ligaments, the uterus lies entirely within the abdominal cavity