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Diploma in Pharmacy 1st Year
Human Anatomy & Physiology
Experiment

To study the given model of female reproductive system.

Aim:

To study the given model of female reproductive system.

Reference :

Dr. Gupta G.D , Dr. Sharma Shailesh , Dr. Sharma Rahul Kumar , "Practical Manual of Human Anatomy and Physiology" Published by Nirali Prakashan , Pg.No 147 - 150

Theory :

The functions of female reproductive system are:

1) Formation of Ova
2) Receiving of spermatozoa.
3) Provision of suitable environments for fertilization, and fetal development.
4) Parturition (Childbirth).
5) Lactation, the production of breast milk.

External and internal organs make up the female reproductive organs, or genitalia, that are:

1) **External Genitalia (Vulva):** The labia majora and minora, the clitoris, the vaginal entrance, the vestibule, the hymen, and the vestibular glands (Bartholin's gland) make up the external genitalia collectively known as the vulva.
   i) **Labia Majora:** The two enormous folds that create the vulva's border. They are made up of skin and fibrous tissue, and they have a lot of sebaceous glands.
   ii) **Labia Minora:** Between the labia majora are two tiny folds of skin that contain numerous sebaceous glands.

iii) **Clitoris:** The clitoris is the male equivalent of the penis, containing sensitive nerve endings and erectile tissue, but it has no reproductive function.

iv) **Hymen:** The hymen is a thin mucous membrane that partially closes off the vaginal opening

v) **Vestibular Glands:** The vestibular glands (Bartholin's glands) are located at the vaginal opening, one on each side.

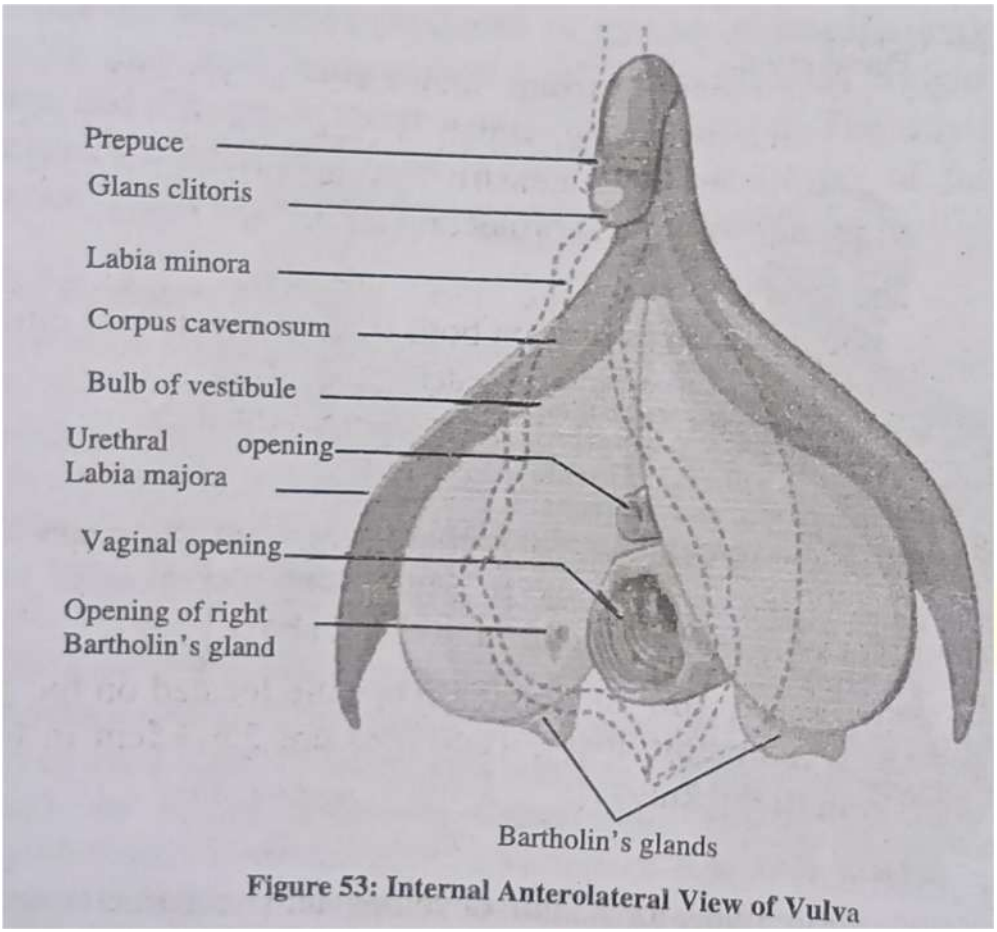


Figure 53: Internal Anterolateral View of Vulva

2) **Perineum:** The area between the base of the labia minora and the anal canal is known as the perineum.

3) **Internal Genitalia:** The vagina, uterus, two uterine tubes, and two ovaries are the internal organs of the female reproductive system, which are located in the pelvic cavity.

4) **Vagina:** The vagina is a fibro-muscular tube lined with stratified squamous epithelium that connects the reproductive organs' exterior and internal organs. Between the bladder in front and the rectum and

anus behind, it flows obliquely upwards and backwards at an angle of about 45°

Functions of the Vagina

During sexual intercourse (coitus), the vagina serves as a receptacle for the penis, as well as an elastic route through which the baby slides during birthing.

5) **Uterus :** The uterus is a flattened anteroposteriorly hollow muscular pear- shaped structure. It is located between the urinary bladder and the rectum in the pelvic cavity. The parts of the uterus that are fundus, body and cervix (neck of the uterus).

Functions of the Uterus

After puberty, the uterine endometrium undergoes a monthly cycle of changes known as the menstrual cycle, which is regulated by hypothalamic and anterior pituitary hormones. The menstrual cycle is designed to prepare the uterus for receiving, nurturing, and protecting a fertilised ovum.

6) **Uterine Tubes :** The uterine (fallopian) tubes are about 10cm long and extend between the body and the fundus on both sides of the uterus. Fimbriae are finger-like extensions on the end of each tube. The ovarian fimbria, which is closely associated with the ovary, is the longest of them.

Functions

Peristalsis and ciliary movement transport the ovum from the ovary to the uterus via the uterine tubes. The mucus released by the mucosa creates optimal conditions for ova and spermatozoa to travel about.

7) **Ovaries :** The female gonads are the ovaries. They are located on the lateral walls of the pelvis in a shallow fossa. They measure 2.5-3.5cm in length, 2cm in width, and Icm in thickness

Functions

The ovary is the organ that stores and develops female gametes prior to ovulation. The hypothalamus and anterior pituitary gland, which release gonadotropins (follicle stimulating hormone, FSH) and luteinizing

hormone (LH), both of which operate on the ovary, regulate their maturation.

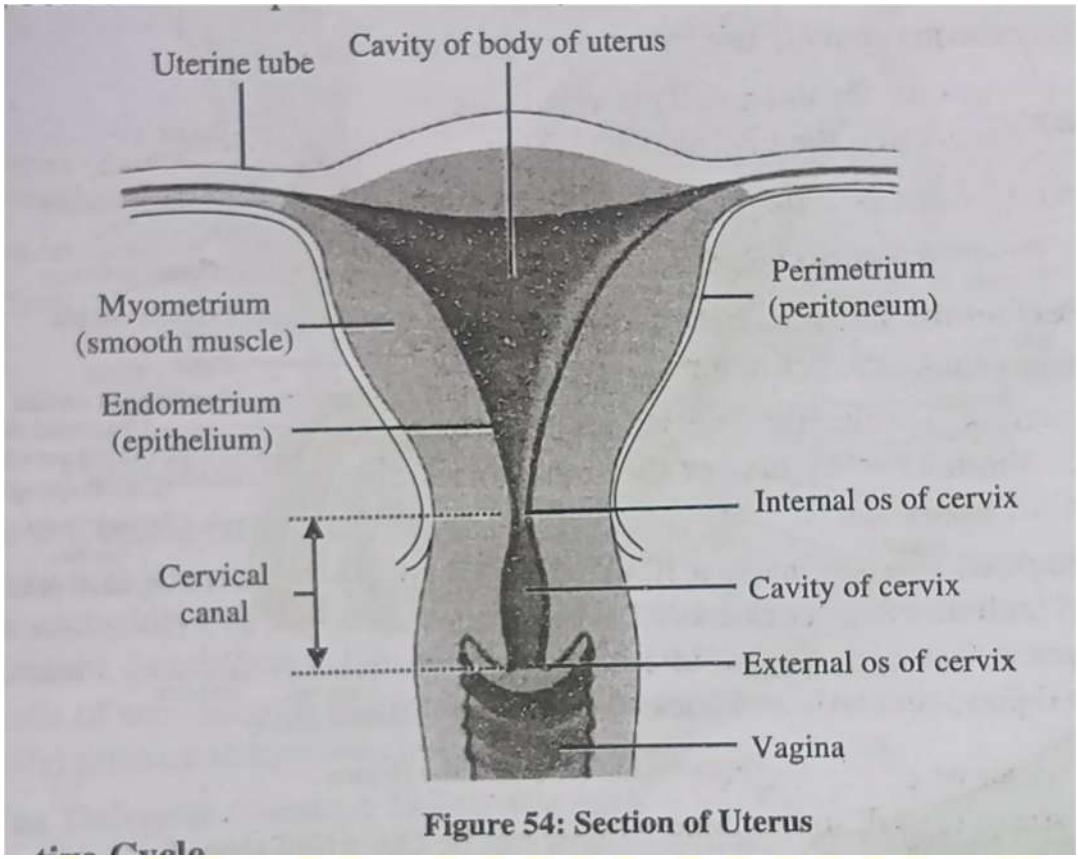


Figure 54: Section of Uterus

Reproductive Cycle

This is a series of events that occurs every 26 to 30 days in females and involves the periodic release of blood from the uterine cavity

Following phases are occurring during menstrual cycle:

1) **Menstrual Phase**: The corpus luteum begins to deteriorate when the ovum is not fertilised. As a result, progesterone and oestrogen levels drop, and the endometrium's functional layer, which is dependent on high levels of those ovarian hormones, sheds during menstruation.
2) **Proliferative Phase:** It is also known as follicular phase. It will last for the next nine days. The endometrium gets repaired at this phase. The graafian follicle of the ovary matures at this stage (FSH from the anterior pituitary is required for this) and ova forms inside Oestrogen is now secreted by the graafian follicle. The graafian follicle ruptures and releases the eggs on the 14 day of the menstrual cycle

3) **Luteal Phase:** It is the phase that will last for the next fourteen days. The endometrium thickens and becomes more vascular during this phase in order to receive the fertilised ovum Progesterone is now secreted by the corpus luteum (for this LH of antenor pituitary is necessary).

Progesterone secretion persists throughout pregnancy if fertilisation occurs by implantation of the fertilised ovum Otherwise, the corpus luteumn degrades and stops producing progesterone Mensuration happens when the endometrium's capillaries burst (the first day of menstrual flow is designated as day 1 of menstrual cycle).

Result: The given model of female reproductive system was studied.

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