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DEPARTMENT: NURSING

PHYSIOLOGY ASSIGNMENT

QUESTION 1

1. Cyclic changes in BREAST
2. Cyclic changes in

CYCLIC CHANGES IN BREAST:

Breast development is a vital part of woman’s production. Breast development happens in certain stages during a woman’s life: first before birth, again at puberty, and later during the child bearing years. Changes also happen during the menstrual cycle and when a woman reaches menopause.

The cyclic changes in breast usually begins when a girl enters puberty and begins to menstruate. Each month, women go through changes in the hormones that make up the menstrual cycle. The hormone estrogen produced is produced by the ovaries in the first half of the menstrual cycle. It stimulates the growth of milk ducts in the breast. The increasing level of estrogen leads to ovulation halfway through the cycle. Next, the hormone progesterone takes over in the second half of the cycle. It stimulates the formation of milk glands. These hormones are believed to be responsible for the cyclic changes that women feel in their breasts just before menstruation. These include swelling, pain and soreness.

During menstruation, many women also have changes in breast texture. Their breasts may feel very lumpy; this is because the glands in the breasts are enlarging to get ready for a possible pregnancy. If eventually pregnancy does not happen, the breast goes back to its normal size. Once menstruation starts, the cycle begins again.

CYCLIC CHANGES IN VAGINA

The vaginal epithelium is the inner lining of the vagina consisting of multiple layers of squamous cells. The basal membrane provides the support for the first layer of the epithelium-the basal layer. The intermediate layers lie upon the basal layer and the superficial layer is the outermost layer of the epithelium. Anatomists have described the epithelium as consisting of as many as 40 distinct layers. The mucus found on the epithelium is secreted by the cervix and the uterus.

In the course of the reproductive cycle, the vaginal epithelium is subjected to normal, cyclic changes, that are influenced by estrogen: with increasing circulating levels of the hormone, there is proliferation of epithelial cells along with an increase in the number of cell layers. As cells proliferate and mature, the undergo partial cornification.

Although hormone induced changes occur in the other tissues and organs of the female reproductive system, the vaginal epithelium is more sensitive and its structure is an indicator of estrogen levels. Some langerhans cells and melanocytes are also present in the epithelium.

The epithelium of the ectocervix is contiguous with that of the vagina, possessing the same properties and function. The vaginal epithelium is divided into layers of cells, including the basal cells, the parabasal cells, the superficial squamous flat cells, and the intermediate cells. The superficial cells exfoliate continuously and basal cells replace the superficial cells that die and slough off from the stratum corneum. Under the stratum corneum is the stratum granulosum and stratum spinosum. The cells of the vaginal epithelium retain a usually high level of glycogen compared to other epithelial tissue in the body. The surface patterns on the cells themselves are circular and arranged in longitudinal rows. The epithelial cells of the utereus possess some of the same characteristics of the vaginal epithelium. patterns on the cells themselves are circular and arranged in longitudinal rows. The epithelial cells of the uterus possess some of the same characteristics of the vaginal epithelium.

EXPLICATE MENSTRUAL CYCLE

The menstrual cycle is the monthly hormonal cycle a female’s body goes through to prepare for pregnancy. Menstrual cycle is counted from the first day of period up to the first day of your next period. The menstrual cycle is required for the production of oocytes, and the preparation of the uterus for pregnancy. It occurs due to the rise and fall of estrogen levels. This cycle results in the thickening of the lining of the uterus, and the growth of an egg. The egg is released from an ovary around day fourteen in the cycle; the thickened lining of the uterus provides nutrients to an embryo after implantation. If pregnancy does not occur, the lining is released in what is known as menstruation.

Menstruation or menstrual period, is the periodic shedding of the lining of a woman’s uterus. It is one of the phases of the menstrual cycle. The uterine lining breaks down into a bloody substance. It then passes down through the cervix and exits through the vagina.

PHASES OF MENSTRUAL CYCLE

The cycle can be divided into three phases based on the events in the ovary **(ovarian cycle)** or in the uterus **(uterine cycle)**. The ovarian cycle consists of **follicular phase, ovulation and** **luteal phase** whereas the uterine cycle is divided into **menstruation, proliferative phase and secretory phase.**

Stimulated by gradually increasing amounts of estrogen in the follicular phase, discharges of blood (menses) flow stop, and the lining of the uterus thickens. Follicles in the ovary begin developing under the influence of a complex interplay of hormones, and after several days one or occasionally two become dominant (non-dominant follicles shrink and die). Approximately mid-cycle, 24–36 hours after the luteinizing hormone (LH) surges, the dominant follicle releases an ovocyte, in an event called ovulation. After ovulation, the ovocyte only lives for 24 hours or less without fertilization while the remains of the dominant follicle in the ovary become a corpus luteum; this body has a primary function of producing large amounts of progesterone. Under the influence of progesterone, the uterine lining changes to prepare for potential implantation of an embryo to establish a pregnancy. If implantation does not occur within approximately two weeks, the corpus luteum will involute, causing a sharp drop in levels of both progesterone and estrogen. The hormone drop causes the uterus to shed its lining in a process termed menstruation. Menstruation also occurs in closely related primates (apes and monkeys).

STAGES OF MENSTRUAL CYCLE

There are five stages in a normal menstrual cycle:

1. Bleeding phase
2. Pre-fertile phase
3. Fertile phase
4. Releasing an egg phase
5. Post-fertile phase

REASONS WHY MENSTRUAL CYCLE DATES TEND TO CHANGE

Cycles longer than six weeks are considered unusual. The length of a women's menstrual cycle can change throughout her life. Factors such as stress, extreme emotion (good or bad), weight changes, excessive physical activity and travelling can also cause irregularities in a woman's menstrual cycle.