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18/mhs02/095

Nursing, 200L

Physiology (Phy 212)

1st May, 2020

CYCLIC CHANGES IN THE BREAST

Women go through hormonal changes each month which makes up the menstrual cycle. The hormones that are involved during the menstrual cycle include the estrogen and the progesterone. These hormones are believed to be responsible for the cyclical changes that many women feel in their breast just before menstruation including swelling, pain and soreness. Some women also have changes in their breast texture. It may feel lumpy with the reason being that the glands in the breast are enlarging to get ready for a possible pregnancy. When this doesn't happen, it goes back to normal. Estrogen is produced by the ovaries in the first half of the menstrual cycle. This stimulates the growth of milk duct in the breast. As the estrogen increases, it leads to ovulation halfway through the cycle. Progesterone takes over the second half of the cycle. This stimulates the formation of milk glands (Normal Breast Development And changes)

CYCLIC CHANGES IN THE VAGINA

How the vagina changes during the menstrual cycle:

The vagina changes in response to hormonal fluctuations of the menstrual cycle. Around mid-cycle, when estrogen is highest, vaginal tissue becomes thicker and fuller. The cervix at the top of the vagina, moves and changes shape throughout the cycle. Before and after the fertile window, the cervix is low and can be felt in the vagina, with a firm texture, and the hole in the center of the cervix is closed. During the fertile window, the hole in the cervix opens to facilitate the entrance of sperm into the uterus, the cervix rises higher in the vagina, and is softer when touched.

How the vagina changes during sex:

The vagina can also undergo more rapid changes, such as during sexual activity. When a person with a vagina is sexually aroused, increased blood flow is directed towards the genitals, causing the vaginal tissue to become engorged with blood, and additional lubrication to be produced. This fluid is called arousal fluid.

During sexual excitement, the vagina expands by lengthening and widening in shape. This is called vaginal tenting and ballooning. This shape change happens as the uterus and cervix are drawn higher into the pelvis, which creates more space and moves the cervix farther away from any semen that is ejaculated into the vagina. This allows time for the semen to mix with female genital fluids, stimulating the sperm to undergo the physical changes necessary for fertilizing an egg (Telfer, 2019).

HORMONAL REGULATION OF MENSTRUAL CYCLE

The ovarian hormones circulate in the blood and are excreted in modified forms in the urine. Estimation of the urinary output by chemical methods gives an indication of the blood levels and of the total production of these substances.

The cyclic events in the ovary depend on gonadotropic hormones secreted by the anterior lobe of the pituitary gland. This gland is situated in a small recess at the base of the skull. There are two, and possibly three, gonadotropic hormones: follicle-stimulating hormone (FSH), luteinizing hormone (LH), and, possibly, luteotropic hormone (LTH).

FSH is secreted in greatest amount in the first half of the menstrual cycle, and LH has its peak of secretion at mid-cycle. It is believed that the sequential action of FSH and LH causes ripening of the follicle and ovulation. In some animals LTH is necessary for maintenance of the corpus luteum, but in women under treatment for infertility ovulation has been

successfully induced with FSH and LH alone. Multiple births, as the result of multiple ovulations, have occurred after excessive doses of FSH have been given.

The pituitary gland stimulates the ovary to produce estrogens and progesterone, but there is a “negative feedback” by which the estrogens inhibit the output of FSH from the pituitary gland (and probably stimulate the output of LH). In addition, progesterone is believed to inhibit the further output of LH. In this process, in which the pituitary first stimulates the ovary, and the ovary then inhibits the pituitary, the basic rhythm is under the control of the hypothalamus; nevertheless, ovulation can be inhibited by oral contraceptives, which contain estrogens and modifications of progesterone.

The anterior lobe of the pituitary gland is connected by its stalk to the hypothalamic region of the brain. The anterior lobe secretes many important hormones, including those that control the activity of the adrenal and thyroid glands, the growth hormone, and the gonadotropic hormones. From the hypothalamus substances are carried in the veins in the pituitary stalk that cause release of hormones from the pituitary, including FSH and LH, but also a factor that inhibits release of LTH. The higher brain affects the hypothalamic function; this explains the temporary disturbances of menstruation that may follow emotional stress.

Each menstrual period lasts for about five days, but the duration and amount of the flow vary considerably even in perfect health. In some women there may be premonitory symptoms such as pelvic discomfort, soreness of the breasts (because of the response of these organs to estrogens), and emotional tension. Ovarian hormones cause retention of sodium and water in the tissue fluids; premenstrual tension, sometimes called premenstrual syndrome, may be partly due to this and in some cases can be relieved by diuretics, drugs that increase the production of urine. When the menstrual flow starts, the uterus contracts to expel the blood and disintegrating endometrium. These contractions may be painful, especially in young women who have never been pregnant. Menstrual discomforts such as those that have

been mentioned vary greatly in degree from woman to woman and from time to time but ordinarily do not interfere with normal activities (Clayton)

References

Clayton, S. G. (n.d.). *Menstruation*. Retrieved from britannica.com: <https://www.britannica.com/science/menstruation>

Normal Breast Development And changes. (n.d.). Retrieved from hopkinsmedicine.org: <https://www.hopkinsmedicine.org/health/conditions-and-diseases/normal-breast-development-and-changes>

Telfer, N. (2019, May 28). *Vaginas 101*. Retrieved from helloclue.com: <https://helloclue.com/articles/cycle-a-z/vaginas-101>