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**DEPARTMENT: NURSING**

**MATRIC NUMBER: 18/MHS02/085**

**COURSE CODE: PHS 212**

**ASSIGNMENT:**

1. **CYCLIC CHANGES IN THE BREAST**



What breast changes happen at puberty?

As a girl approaches her teen years, the first visible signs of breast development begin. When the ovaries start to produce and release (secrete) estrogen, fat in the connective tissue starts to collect. This causes the breasts to enlarge. The duct system also starts to grow. Often these breast changes happen at the same that pubic hair and armpit hair appear.

Once ovulation and menstruation begin, the maturing of the breasts begins with the formation of secretory glands at the end of the milk ducts. The breasts and duct system continue to grow and mature, with the development of many glands and lobules. The rate at which breasts grow is different for each young woman.

What cyclical changes happen to the breasts during the menstrual cycle?

Each month, women go through changes in the hormones that make up the normal menstrual cycle. The hormone estrogen is produced by the ovaries in the first half of the menstrual cycle. It stimulates the growth of milk ducts in the breasts. 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 the milk glands. These hormones are believed to be responsible for the cyclical changes that many 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 breast are enlarging to get ready for a possible pregnancy. If pregnancy does not happen, the breasts go back to normal size. Once menstruation starts, the cycle begins again.

What happens to the breasts during pregnancy and milk production?

Many healthcare providers believe the breasts are not fully mature until a woman has given birth and made milk. Breast changes are one of the earliest signs of pregnancy. This is a result of the hormone progesterone. In addition, the dark areas of skin around the nipples (the areolas) begin to swell. This is followed by the rapid swelling of the breasts themselves. Most pregnant women feel soreness down the sides of the breasts, and nipple tingling or soreness. This is because of the growth of the milk duct system and the formation of many more lobules.

By the fifth or sixth month of pregnancy, the breasts are fully capable of producing milk. As in puberty, estrogen controls the growth of the ducts, and progesterone controls the growth of the glandular buds. Many other hormones also play vital roles in milk production. These include follicle-stimulating hormone (FSH), luteinizing hormone (LH), prolactin, oxytocin, and human placental lactogen (HPL).

Other physical changes happen as well. These include the blood vessels in the breast becoming more visible and the areola getting larger and darker. All of these changes are in preparation for breastfeeding the baby after birth.

**CYCLIC CHANGES IN THE CERVIX**

The cervix, which is the spongy, button-like tissue with a central area (os) that can open and is the entrance of the uterus from the vagina, can undergo certain changes during different times of the menstrual cycle.

A useful tool in determining where a woman is in her menstrual cycle is to feel the cervix and note the changes that are associated with the different times of the cycle. The position of the cervix and its texture are the two aspects to assess in determining the time of the menstrual cycle.

Determining the time of the menstrual cycle using the location and texture of the cervix is useful in women who are trying to promote or avoid conception. This method, together with detecting preovular cervical mucus, has been clinically studied and was found to be a reliable way of determining whether one is ovulating or not.

**The cervical changes**

The following changes in the cervix may help one determine where they are in their cycle:

* **Menstruation** - besides the tell-tale sign of vaginal bleeding, the cervix during this time of the menstrual cycle feels firm, hangs low and the os is open to allow blood to escape from the uterus. The os then closes once all the blood has shed from the uterus. The cervix may also be slightly angled to one side and not central.
* **Nearing ovulation** - the cervix feels higher up in the vagina because as the ovaries produce estrogen, this causes the ligaments of the uterus to tighten resulting in the uterus being pulled up further into the pelvis and thus the cervix follows suit. It may also be more difficult to feel the cervix at this time since it moves higher up into the body. At this time, the cervix feels softer, like lips that are pursed, and feels more centrally aligned with the os being only slightly open.
* After ovulation - estrogen levels drop and therefore so does the location of the cervix. Therefore, the structure feels low down in the vagina, firm, and the os is closed.

2**) EXPLICATE ON MENSTRAUL CYCLE**



Figure showing the progression of the menstrual cycle and the different hormones contributing to it.

The **menstrual cycle** is the regular natural change that occurs in the female reproductive system (specifically the uterus and ovaries) that makes pregnancy possible. The cycle is required for the production of oocytes, and for the preparation of the uterus for pregnancy. The menstrual cycle occurs due to the rise and fall of estrogen.This cycle results in the thickening of the lining of the uterus, and the growth of an egg, (which is required for pregnancy).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.

Up to 80% of women report having some symptoms during the one to two weeks prior to menstruation. Common symptoms include acne, tender breasts, bloating, feeling tired, irritability and mood changes. These symptoms interfere with normal life and therefore qualify as premenstrual syndrome in 20 to 30% of women. In 3 to 8%, they are severe.

The first period usually begins between twelve and fifteen years of age, a point in time known as menarche. They may occasionally start as early as eight, and this onset may still be normal.The average age of the first period is generally later in the developing world and earlier in developed world. The typical length of time between the first day of one period and the first day of the next is 21 to 45 days in young women and 21 to 35 days in adults (an average of 28 days). Menstruation stops occurring after menopause which usually occurs between 45 and 55 years of age. Bleeding usually lasts around 3 to 7 days.

The menstrual cycle is governed by hormonal changes. These changes can be altered by using hormonal birth control to prevent pregnancy.Each cycle can be divided into three phases based on events in the ovary (ovarian cycle) or in the uterus (uterine cycle). The ovarian cycle consists of the 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 oocyte, in an event called ovulation. After ovulation, the oocytes 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).

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