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Course : Physiology

Assignment

1. The cyclic changes of the breast.

Every month, females go through hormonal changes that make up the normal menstrual cycle. The hormone oestrogen 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 levels of oestrogen leads to ovulation at mid half. The hormone progesterone takes over in the second half of the menstrual cycle. It stimulates the formation of milk. These hormones are responsible for the cyclic changes women feel in their breasts before menstruation like: swelling, pain and soreness other changes may include the breasts feeling lumpy and change in texture. These changes occur because the glands in the breast are enlarging to get ready for a possible pregnancy and when this does not occur the breast goes back to its normal size.

2. The cyclic changes in the cervix.

During the menstrual cycle, around the mid cycle when oestrogen is highest vagina 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 cervix opens to facilitate the entrance of sperm into the uterus the cervix rises higher in the vagina and is softer when touched.

3. The menstrual cycle.

The series of events that occur regularly in females every 26 to 30 days throughout the child bearing period of about 36 years. It occurs between the ages of puberty and menopause. The cycle consists of changes that take place concurrently in the ovaries and uterine walls, stimulated by changes in the blood concentration of hormones. Hormones secreted in the cycle are controlled by negative feedback. These hormones include :

- Follicle stimulating hormone(FSH) : promotes the maturation of ovarian follicle and secretion of oestrogen which leads to ovulation.
- Luteinising hormone(LSH) : Triggers ovulation, stimulates the development of corpus luteum and the secretion of progesterone.

Phases of the menstrual cycle

- Menstrual phase : When the ovum is not fertilized, the corpus luteum starts to disintegrate, progesterone and oestrogen levels fall and the functional layer of the endometrium which is dependent on the high levels of progesterone and oestrogen is shed in menstruation. The menstrual flow consist of the secretion from endometrial gland, endometrial cells, blood from the broken down capillaries and the unfertilised ovum.
- Proliferative phase : At this stage an ovarian follicle, stimulated by follicle stimulating hormone,

is growing towards maturity and is producing oestrogen. The endometrium becomes thicker by rapid cell multiplication followed by an increase in the numbers of mucus secreting glands and blood capillaries. This phase ends when ovulation occurs and oestrogen production declines.

- Secretary phase: Immediately after ovulation, the lining cells of the ovarian follicle are stimulated by the Luteinising hormone to develop the corpus luteum, which produces progesterone and some oestrogen. Under the influence of progesterone the endometrium becomes edematous and the secretory glands produce increased amounts of watery mucus to assist the passage of the spermatozoa through the uterus to the uterine tubes where the ovum will be fertilized. If the ovum is not fertilized menstruation occurs and a new cycle begins.