

this continuous follicular growth in the first few days of the menstrual cycle spindle cells from ovary interstitium proliferate in layers to form a mass called *theca*.

Theca is divided into two layers:

- ⊙ *Theca externa* which forms the capsule of developing follicle.
- ⊙ *Theca interna* is the layer in which the secretion of steroid sex hormones takes place (estrogen and progesterone). In the end phase of proliferation the mass of granulosa cells secretes *follicular fluid* which contains high concentration of estrogen. Accumulation of this fluid causes an Antrum. Vesicular follicles are formed in later stages of proliferation. After a week or more of growth, but before the ovulation, one of the follicles begins to outgrow than the others and rest of the developing follicles involute. This process of Involution is called Atresia and the involuted follicles are called "atretic". The single follicle at the time of ovulation is of 1–1.5 cm in width and it is a mature follicle.

Ovulation

This is the period of high conception rate for a female. Ovulation occurs usually on the 14th day of menstrual cycle, if the cycle is for 28 days. Before the ovulation, outer wall of follicle swells and a small area in center of follicular capsule called *stigma* protrudes out and slowly the fluid oozes out through it.

Corpus Luteum — the Luteal Phase

Under the influence of luteinizing hormone (LH) and follicle-stimulating hormone (FSH) (progesterone), ovulation occurs where the ovum is discharged with the rupture of follicle.

After the expulsion of ovum, remaining granulosa and theca interna cells rapidly change into lutein cell. They get enlarged to two to three folds and get filled with lipids giving them a yellow appearance. This total group of cells is called *corpus luteum* and the process by which it occurs is called *luteinization*.

PARTURITION (BIRTH OF A BABY)

The uterus becomes more excitable until finally it develops strong rhythmic contractions and with that force the baby is expelled out. The causes for increased intense contractions for parturition are as follows.

Hormonal Changes that Cause Increased Excitability of the Uterine Musculature.

- ⊙ Ratio of oestrogen to progesterone
- ⊙ The role of progesterone is to inhibit uterine contractility during pregnancy, in turn helping to prevent expulsion of foetus.
- ⊙ The role of oestrogen is to increase degree of uterine contractility.

Both the hormones are secreted in progressively greater quantities throughout and from the 7th month onwards oestrogen increases while progesterone remains constant/decreases slightly.

Effects of Oxytocin on Uterus

The role of oxytocin is specific for uterine contractions.

- ⊙ The oxytocin receptors in the uterine musculature increases.
- ⊙ The secretion increases at the time of labour.

Effect of Foetal Hormones on Uterus

- ⊙ The pituitary gland of foetus secretes increasing quantities of oxytocin which plays a role in exciting the uterus.
- ⊙ The adrenal glands secrete large quantities of cortisone which help in uterine contractions.
- ⊙ The foetal membrane releases prostaglandins in high concentration at the time of labour which intensifies the uterine contractility.

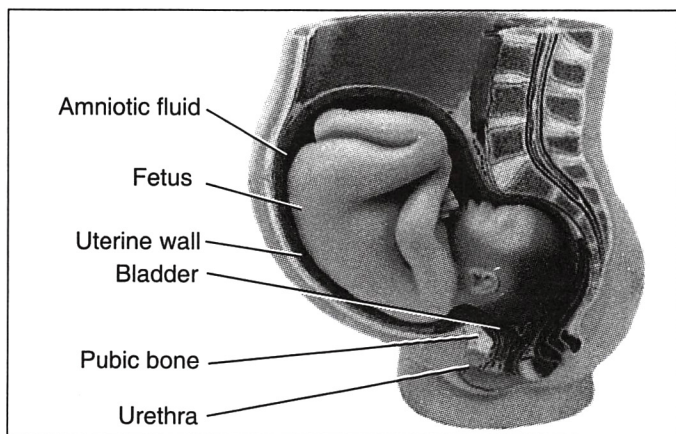


Fig. 3.5 *Ninth month of pregnancy*

7. Disruption of maternal endocrine haemostasis.
8. Poor growth of foetus.

Aims of Antenatal Care

1. To give necessary information about pregnancy, labour stages, delivery and postdelivery sequences.
2. To encourage the lady to maintain her optimum physical and mental health.
3. To plan out child-care program.
4. To prevent medical or obstetrics complications and if it happens the management for same.

Physiotherapy Sessions

To organize physiotherapy sessions, we require the following.

1. Small group (8–10 pregnant ladies)
2. Well ventilated rooms
3. Soft slow music
4. Carpeted supportive floor
5. Large mirrors for visual feedback
6. Equipped with emergency equipment

ANTENATAL CLASSES

The classes which are conducted during the nine months of gestation are called antenatal classes. Usually three to four sessions are taken for a group of 3–5 couples.

These sessions are preferred in the second trimester where three sessions are conducted and the last session is done in the beginning of third trimester.

Division of Sessions

First Session

Introduction of couples to each other and a video/slide show which guides them about the anatomy, physiology and significance of exercises in the pregnancy.