

Lecture notes

FEMALE REPRODUCTIVE SYSTEM

- comprises the :
 - ovaries
 - genital ducts : fallopian tube
 - uterus
 - vagina
 - external genitalia
- mammary glands are imp't glands although it is considered not one of the genital organs.

functions:

- production of female gametes (ova)
- reception of male gametes (spermatozoa)
- provision of a suitable environment for fertilization
- development of the fetus and its expulsion
- nutrition of the newborn



OVARY

- glands of double function (exocrine and endocrine)
- flattened ovoid bodies suspended on either side of the uterus on the lateral wall of the pelvic cavity
- surface is covered by a simple squamous or cuboidal epithelium, the **germinal epithelium**

tunica albuginea

- layer of dense CT beneath the epithelium which increases in density with advancing age

zones:

- cortex
 - outer thick portion
- medulla (zona vasculosa)
 - inner thin portion
- **Medulla**
 - large convoluted, spiral thick walled blood vessels
 - stroma have scattered strands of smooth muscle fibers

Berger's cells (hilus cells)

- formerly named sympathotrophic hilus glands
- similar to the Leydig cells of the testis
- tumor of hyperplasia of the ovarian hilus
 - masculinizing characteristics

Cortex

- CT cells are abundant, large, fusiform-shaped
- stroma consists of spindle-shaped cells
 - displays *swirly* appearance
- dispersed stromal cells -- **interstitial glands**



- = **Primordial Follicle** (unilaminar)
 - big spherical cell, the ovum, surrounded by a layer of smaller flattened cells called the follicular or granulosa cells

Theca folliculi

- condensation of dense CT around the follicle

- oocyte has a large, eccentrically placed nucleus with a large nucleolus, well developed Golgi apparatus, surrounded by numerous small mitochondria

Primary Ovarian Follicle

- growth and differentiation of the ovum
- proliferation of follicular cells (flattened cells becomes cuboidal or low columnar)
- gives rise to multiple Golgi complex dispersed in the cytoplasm located at the periphery near the cell membrane or *colonne*

Theca folliculi differentiates into:

- theca interna* - highly vascular inner layer of secretory cells
- theca externa* - outer layer composed of CT

Zona pellucida

- amorphous material deposited around the microvilli containing mucoproteins substance
- elaborated probably by the granulosa cells

Secondary Follicle (antral)

- irregular small space filled with a clear fluid causes further increase in the size of the follicle

- oocyte has attained its full size by the time of formation of the antrum begins

Antrum

- single cavity within the follicle formed from the fusion of small spaces filled with fluid during the proliferation of follicular cells

Cumulus oophorus

- eccentric mound or hillock
- its follicular cells is directly in relation to the ovum becomes radially arranged and form the **corona radiata**, separated from the ovum only by zona pellucida

Membrana granulosa

- regular continuous layer around the antral cavity formed by the stratified epithelium

Call-Exner bodies

- small accumulations of densely staining material that appear among the granulosa cells with a (+) PAS reaction seen to be extracellular in E/M

Mature Follicle (graafian)

- large oocyte with large nucleus and prominent nucleoli
- large antrum is distended with fluid bound by membrane granulosa
- ovum has attained its full size surrounded by thick zona pellucida and a characteristic corona radiata

Macula Pellucida (stigma)

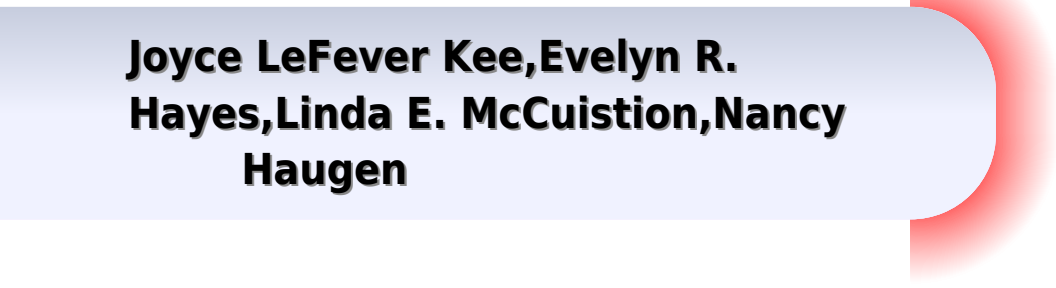
- tunica albuginea & theca folliculi become attenuated
- granulosa cells lining the mature follicle constitute a stratified cuboidal epithelium
- theca folliculi reaches its greatest development

theca interna

- has large spindle-shaped or polyhedral cells with oval nuclei and fine lipid droplets in cytoplasm
- principally responsible for elaboration of female sex hormones, **estrogen**

Reproductive Hormones Study Guide

**Joyce LeFever Kee, Evelyn R.
Hayes, Linda E. McCuistion, Nancy
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