Chapter 1

UTERUS AND UTERINE GLANDS

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HISTOLOGIC STRUCTURE OF THE UTERUS

Histologically, the uterus comprises, from the lumen outward, the endometrium, myometrium and perimetrium layers. The endometrium is the innermost layer where the fetus implants and develops (Mericskay et al., 2004). It comprises the epithelium and the lamina propria containing simple tubular glands. The epithelium contains a single layer of dense prismatic ciliated and secretory cells. The lamina propria has the structure of loose connective tissue with abundant cells containing irregular collagen fibers, rich in fibroblasts (Gartner & Hiatt, 2012).

Uterine glands show intermittent branching in the lower section close to the myometrium. The uterine gland epithelium comprising a single layer of prismatic shaped, secretory cells appears similar to surface epithelium but has fewer ciliated cells compared to the surface epithelium (Erdoğan et al., 1996).

Functionally the endometrium comprises a basal layer and a functional layer. The basal layer, with nearly 1 mm thickness, is not broadly affected by cycle changes in the endometrium. It is not shed during menstruation. The functional layer, formed by proliferation of the basal layer, shows variations in terms of thickness during different periods of the genital cycle. The functional layer is shed during menstruation occurring at nearly 28-day intervals (Maruyama et al., 2010). The functional layer comprises a surface compact layer and deeper spongious layer (Schünke, 2009).

The myometrium has mean 12-15 mm thickness comprising regular smooth muscle bundles in four layers that cannot be well distinguished from each other. When listed from interior to exterior, the innermost (close to the endometrium) is the stratum subvascularis. This muscle layer has circular arrangement around the openings of the Fallopian tubes. Following this, the stratum vascularis compris-

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Uterine glands are not just important for nutrition of the embryo, implantation and maintenance of pregnancy, but additionally are one of the sources of growth factors. A variety of growth hormones are defined in gland epithelium and luminal secretions. These include epidermal growth factor (EGF), vascular endothelial growth factor (VEGF) and leukemia inhibitory factor (LIF) (Hempstock et al., 2004; Dean & Rose, 2018).

In conclusion, there do not appear to be sufficient detailed studies about the effects on uterine glands due to some hormonal changes (like insulin and testosterone), systemic diseases (like diabetes and hypertension) or clinical applications (like curettage). It is thought that detailed histologic and molecular studies can be performed about these deficiencies and these studies will be important for clinicians.

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