

CHAPTER 4

ENDOMETRIUM, EUTOPIC ENDOMETRIUM, PERITONEUM: ARE THEY OF THE SAME ORIGIN?

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What are the borders of endometrium?

The endometrium is the mucosa, which consists of the columnar epithelium and the special stromal cells covering the uterine cavity (1). Endometrium lines the entire surface of the uterine cavity and extends to the limits of internal cervical os caudal to the isthmic level. After the internal cervical os, a narrow cervical channel begins (2).

Does cervical channel contain endometrium?

The cervical channel also called the endoservix is surrounded by a simple columnar epithelium that capable of mucus secretion. This mucinous columnar epithelium lines the surface is called endocervical channel epithelium (3).

Does decidua formation specific for endometrium tissue or can decidua formation also be seen in other tissues including fallopian tubes, peritoneum, or cervical channel?

Decidua is a specialized and greatly modified endometrium of pregnancy. In pregnancy uterine endometrium stromal cells (fibroblast-like) are differentiated by steroid hormones especially progesterone and embryonic signals from trophoblasts into the decidua (4). Decidual cells outside of the endometrium are called “ectopic decidua” and this has first been described by Walker in 1887 (5). Ectopic decidua has been defined in the cervical channel, ovaries and tubes. Also decidual formation has been described in peritoneal surface, appendix, bladder, small and large intestine, and lymph nodes (6). Decidual reaction of subepithelial stroma of fallopian tubes are similar to that seen in endometrium (6). During the pregnancy, the high levels of steroid hormones in maternal blood induce mesenchymal fibroblast activation and they differentiate to decidual cells in ovaries (7, 8).

membrane (26). Glucose-rich vocals appear just below the nucleus in the cells covering the endometrial glands. As the progesterone effect deepens, the glucose-rich vocals discharge into the lumen (27). The glucose uptake is increased by decidualization stimuli, and the glucose increases with FOXO1 expression. It is recently reported that decidualization stimulation activate the insulin signaling pathway in human endometrial stromal cells (28).

Is there any histological difference between implantation zone and other parts of endometrium?

The decidua part beneath the blastocyst implantation area changes with trophoblast invasion and forms the decidua basalis. The part surrounding the growing blastocyst and separating it from the uterine cavity is called decidua capsularis. The rest of the uterine cavity is covered with decidua parietalis. Decidua capsularis consists of decidual cells covered with single-layer flat epithelial cells. The spongiosum layer of the decidua basalis consists of many arteries and generally enlarged veins. In term pregnancy, the glands disappear completely. Decidua basalis is invaded by a large number of interstitial trophoblast cells and trophoblastic giant cells. It is different the structure of collagen fibrils in decidua basalis and decidua parietalis, with thicker and disrupted fibrils within abundant amorphous tissue in decidua basalis, and thinner uniform fibrils in decidua parietalis. These differences may lead an adaptive reaction by decidua or a direct consequence of the invasive trophoblast cells (29).

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