CHAPTER 3

EMBRYOLOGY OF UTERUS

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How the female reproductive system develops embryologically?

Human female reproductive system develops a very detailed process. Reproductive tissues are examined in 3 parts including gonads, reproductive ducts, and external genitalia. The female reproductive system is embryologically derived from four origins: mesoderm, primordial germ cells, coelomic epithelium and mesenchym. The uterus forms during Mullerian organogenesis accompanied by the development of the upper third of the vagina, the cervix, and bilateral tuba uterina. Learning the embryology of the female reproductive system facilitates the identification of congenital pathologies related to these organs (1,2).

What is paramesonephric duct?

The Mullerian channel is used synonymously with the paramesonepric duct. This channel forms the epithelial layer of the reproductive organs including uterus, the upper third of the vagina, the cervix, and both fallopian tubes. Paramesonephric duct is next to the mesonephric (Wolffian) duct anatomically in early development. These ducts also occur initially in male fetus but later degenerate. Before these two channels stemmed from the coelomic epithelium they derived from an epithelium at the anterior end of the mullerian epithelial tube.This tube is covered by mesenchymal cells. Mullerian ducts are formed as an epithelial tube, mesenchymal cells, and coelomic epithelial cells (3,4).

Where does the uterus develop?

Until the fifth and sixth week of fetal life, the genital system is not evident. Initially there are two pairs of genital channels: the mesonephric (Wolffian channel) and the paramesonephric (Mullerian channel). In females, in the absence of the anti Mullerian hormone (AMH) and the SRY gene, Wolffian channel regresses and the Mullerian channels become more pronounced. The upper third of the vagina, the cervix, fallopian tubes, and the uterus derive from the paramesonephric ducts. During the 7th week, paired paramesonephric ducts are caused by focal invagations

What is Mayer Rokitansky Kuster Hauser Syndrome?

Mayer Rokitansky Kuster Hauser syndrome has a prevalence of 1 in 4000 to 5000 births and is one of the most frequent Mullerian abnormalities. It is occur due to microdeletion at 17q12. Uterine and vaginal agenesis or hypoplasia and kidney and bone abnormalities are seen frequently. Since patients usually have normal secondary sexual characteristics, treatment is given for primary amenorrhea. Treatment of vaginal aplasia is to create neo-vagina (17,18). Studies demonstrated that uterine anomalies do not affect clinical pregnancy or live birth rates. Nevertheless they increase the risk of preterm birth. Pregnancy results are poor especially in the presence of arcuate uterus (19,20).

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