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WRITE A SHORT NOTE ON IMPLANTATION.

Implantation can be defined as the process by which the fertilized ovum(zygote) implants in the endometrial lining of the uterus. It is said to be the window of time during early pregnancy when a cluster of rapidly dividing cells called a blastocyst, makes its way down the fallopian tube and burrows deep into the lining of the endometrium.

After the fertilization, the ovum is known as zygote. The zygote takes 3 to 5 days to reach the uterine cavity from fallopian tube. The zygote receives its nutrition while passing through the fallopian tube from the secretions of that fallopian tube. On getting to the uterus, the zygote remains in the uterine cavity for 2 to 4 days before implantation. The uterus has thick walls suitable for egg attachment and growth. A female hormone known as progesterone, secreted by corpus luteum in the ovary, influences the readiness of the uterine wall for zygote implantation. It increases the blood supply in the wall of the uterus, water content, secretion of glycogen (a nutrient for the surrounding

tissue and developing egg). If the uterus is not first prepared by the progesterone, the developing zygote will not attach itself.

Implantation occurs around about 1 week (8 to 9 days) after the day of fertilization. While in the uterine cavity, the zygote gets nutrients from the secretions of the endometrium, known as uterine milk. Development of the zygote into MORULA signifies the start of implantation. A layer of spherical cells called TROPHOBLAST cells is formed around the morula and these cells release proteolytic enzymes over the surface of the endometrium, these enzymes help in digestion of the endometrial cells. The morula then moves through the digested part of the endometrium and implants itself by disrupting the surface of the endometrium and actively burrowing into the deeper tissue. By the 11<sup>th</sup> day after fertilization, the morula has completely embedded itself into the endometrium. The process of implantation is usually complete between 8-10 days after ovulation and as soon as the implantation is complete, the embryo starts producing hcg, the hormone that makes pregnancy detected.

Abnormal implantation can occur where attachment does not occur in the body of the uterus or where placenta forms incorrectly.