

Syllabus/ paper –Core course-II/ Unit 10: Late embryonic Development-
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Implantation of embryo in human

The attachment of embryo to the uterine wall is called implantation. In human, the type of implantation is called interstitial implantation.

In human being fertilization (union of male and female gamet) occur in the upper part of fallopian tube. After formation of the zygote it enters to the stage of cleavage. After formation of Zygote, it enters the stage of cleavage. Zygote undergoes repeated mitotic division to form blastomeres in this stage. In human embryo begin to implant about 7-8 days after fertilization.

The implantation site for human is the mid dorsal or mid ventral area of the uterus. The secretion of progesterone hormone by the corpus luteum cells of the mother make the endometrium tissue layer of uterus ready to receive the embryo. The blastocyst of the embryo penetrate inside the soft endometrial tissue. The rapid growth of trophoblast produces a thick and spongy tissue bed. The trophoblastic cells release proteolytic enzyme which erode epithelial cells of uterine mucosa. The embryo with blastocyst sink into the pit formed in the endometrium and the endometrium also grows around the blastocyst to make the implantation more intimate.

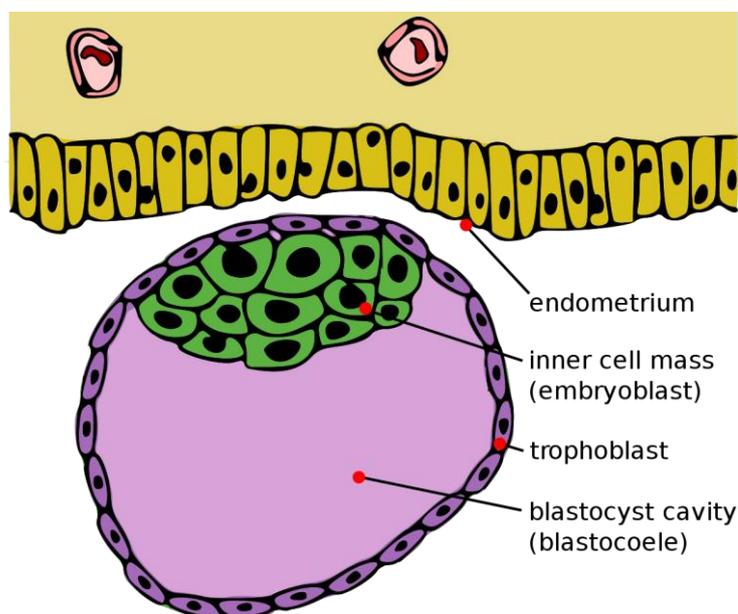
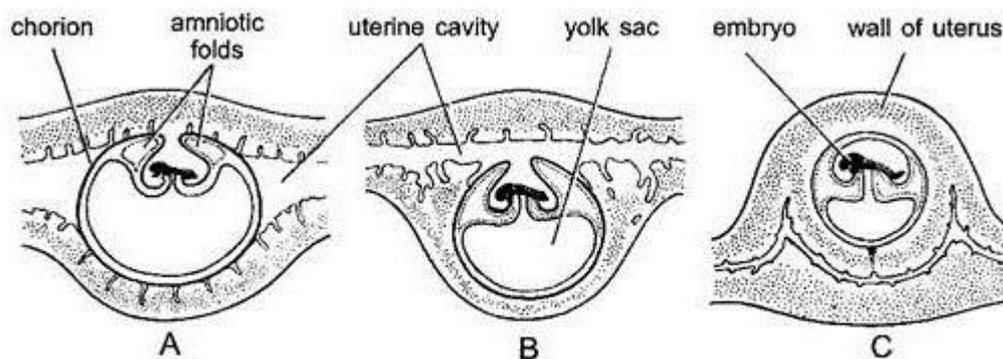


Fig- Diagrammatic representation to show implantation

On the basis of position and mode of attachment of embryo there are three types of implantation-

- i) Central or superficial implantation- In this implantation the embryo remain within the lumen of the uterus and the extra embryonic membranes (amnion, chorion, allantoic and yolk sac) make superficial attachment with the uterine mucosa. It is found in pig, cow, rabbit, sheep, dog, cat etc.
- ii) Eccentric implantation- Here the embryo remain between the uterine epithelial fold. The folds soon cover the blastocyst almost completely. Eg. found in mouse, rat etc.
- iii) Interstitial implantation- In this type of implantation the embryo completely burrowed under the uterine mucosa. This type is found in human, guinea pig, chimpanzee etc.



. Variations in the depth of implantation among mammals. A-Superficial (dog); B-Eccentric (ground squirrel). C-Interstitial (hedgehog).