

PLACENTA



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COURSE : DEGREE-I
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PAPER : II

Placenta

- ❖ nutritional, endocrine, & immunological organs
- ❖ provide hormones enabling uterus to
 1. retain pregnancy &
 2. accelerate development of mammary gland
- ❖ block potential maternal immune response against developing fetus

Classification of Placenta

Placenta is classified on the basis of 3 main factors:

- (i) Nature of extra-embryonic membranes involved
- (ii) Distribution of villi and shape of placenta
- (iii) Degree of intimacy between foetal and maternal tissues or histology

According to extra-embryonic membranes involved

three kinds are recognized :

1. **Yolk Sac Placenta:** derived from yolk sac and chorion

Yolk sac development:

from lower part of blastocyst

nearly encompasses entire embryo & its amnion

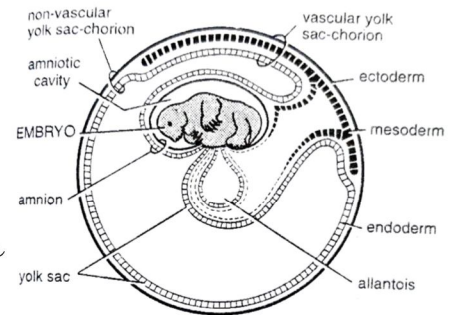
Yolk sac wall

1. in direct contact with chorion (trophoblast) forming villi into uterine wall

2. develops vitelline blood vessels — transporting secretions; uterine milk from uterus to embryo

Found in Kangaroo, Opossum

Metatheria have weakly developed yolk sac placenta, young is born & transferred to marsupium

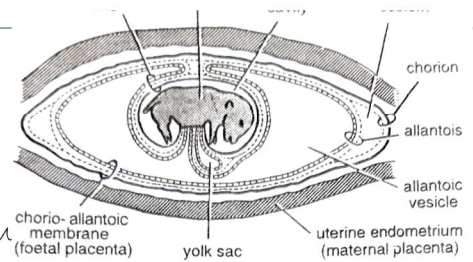


2. Allantoic placenta.

consists of allantois and chorion

a sac-like outgrowth from hindgut of embryo

lined internally by endoderm & externally by mesoderm



Formation of allantoic placenta

Allantois spreads in extra-embryonic cavity, its mesoderm fuses with that of chorion

allanto-chorion: layer formed by fusion of allantois and chorion

- ❖ becomes richly vascular & thrown into small, villi
- ❖ uterine wall forms corresponding crypts penetrated by foetal villi forming allantoic placenta

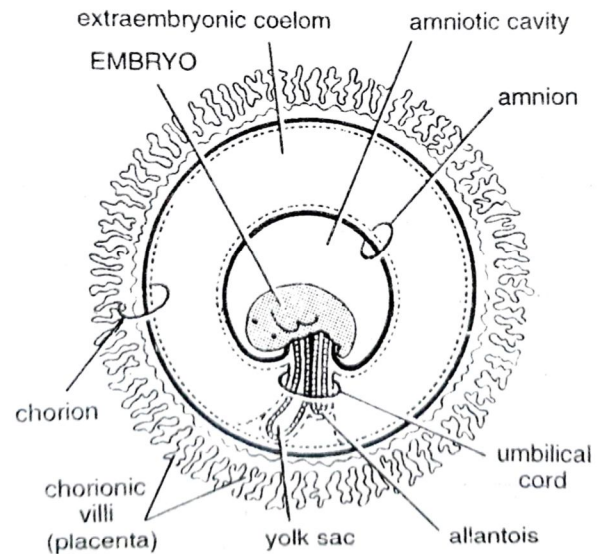
allantoic blood vessels carry materials absorbed from maternal blood through allantoic placenta to foetus

Found in *Perameles* (bandicoot) and many eutherians

uterine wall is syncytial and highly vascularised. Physiological exchange takes place between foetal blood and maternal blood.

3. Chorionic placenta:

- ❖ found in man and apes and
- ❖ formed only by chorion.
- ❖ Allantois remains small, burrows into umbilical cord but does not reach chorion
- ❖ mesoderm and blood vessels grow up to chorion. Its villi enter uterine crypts and form chorionic placenta





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