CHORIONIC VILLUS SAMPLING

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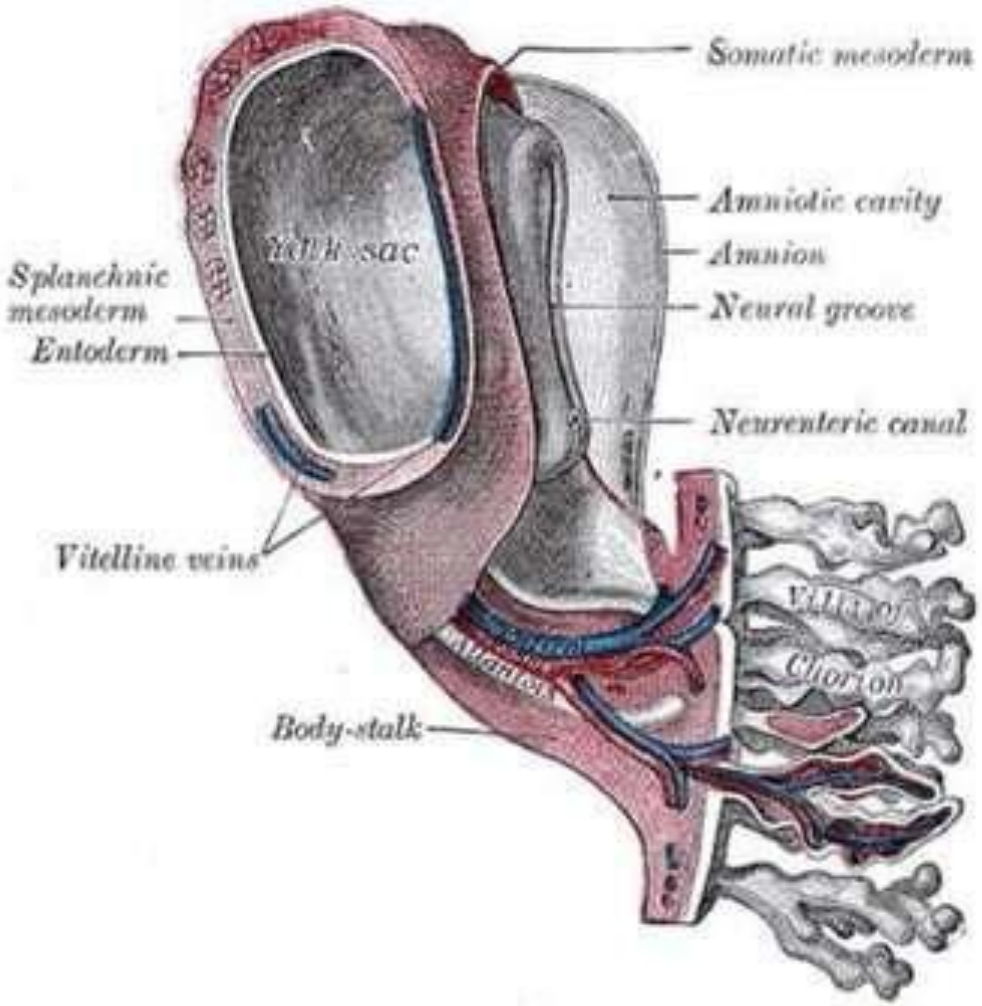
CHORIONIC VILLI

- Chorionic villi are villi that sprout from the chorion in order to give a maximum area of contact with the maternal blood.

- Embryonic blood is carried to the villi by the branches of the umbilical arteries, and after circulating through the capillaries of the villi, is returned to the embryo by the umbilical veins.

- Thus, the villi are part of the border between maternal and fetal blood during pregnancy.

- Villi cells have the same genetic makeup as the growing fetus so it is easy to analyze and identify genetic & chromosomal abnormalities


Somatic mesoderm
Amniotic cavity
Amnion
Neural groove
Yolk sac
Splanchnic mesoderm
Entoderm
Neurenteric canal
Vitelline veins
Chorion
Body-stalk

Chorionic Villus Sampling (CVS)

- Chorionic villus sampling (CVS) is the removal of a small piece of chorionic villi (placenta) from the uterus during early pregnancy to screen the baby for genetic defects.

- In 1983 an Italian biologist named Giuseppe Simoni discovered it.

INDICATIONS

- Abnormal first trimester screen results
- Increased nuchal translucency or other abnormal ultrasound findings
- Family history of a chromosomal abnormality or other genetic disorder
- Parents are known carriers for a genetic disorder
- Advanced maternal age (maternal age above 35).

AMA is associated with increase risk of Down's syndrome risk is 1:400.

PROCEDURE

- Two ways 1. Transcervical
  2. Transabdominal

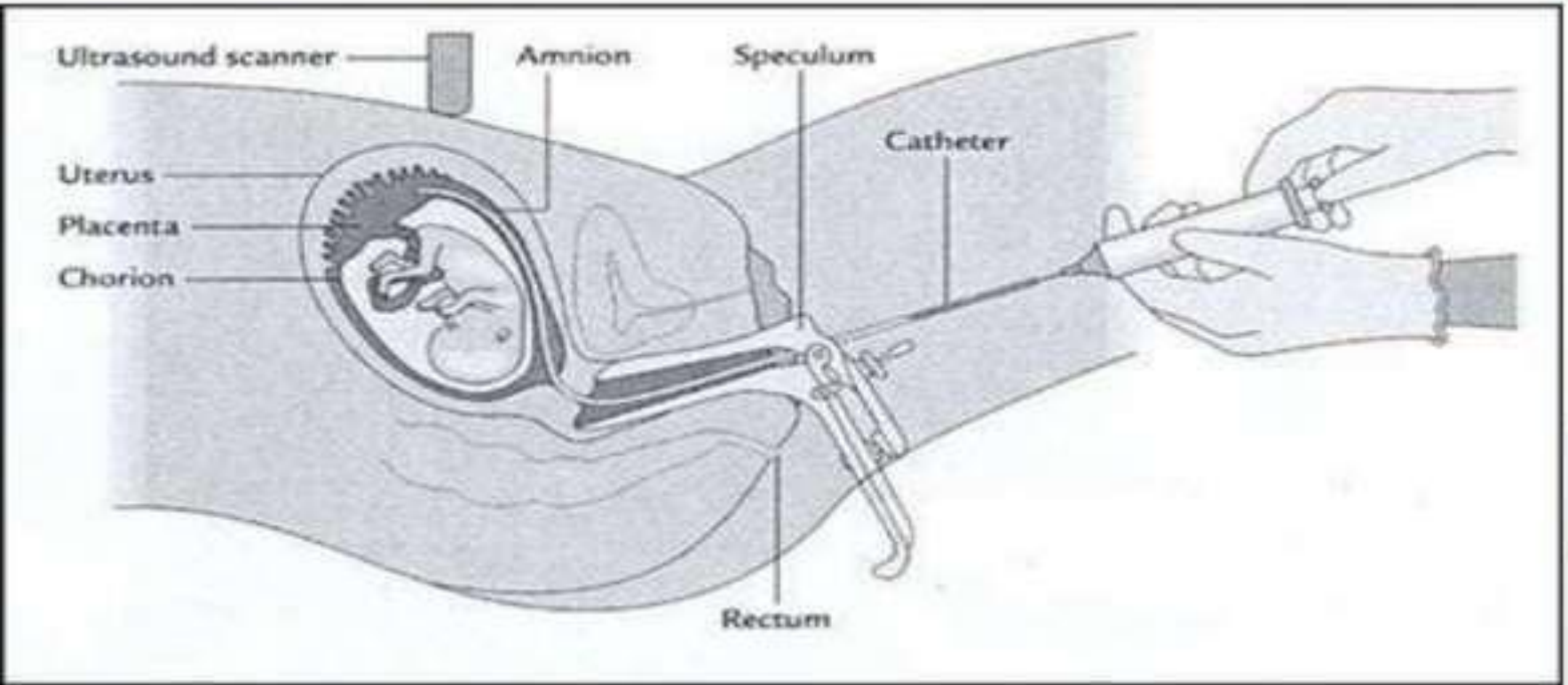
- Preparation of the patient

- An abdominal ultrasound is performed to determine the position of the uterus, the size of the gestational sac, and the position of the placenta within the uterus.
  vulva, vagina, cervix, and abdomen are cleaned with an antiseptic.

TRANSCERVICAL

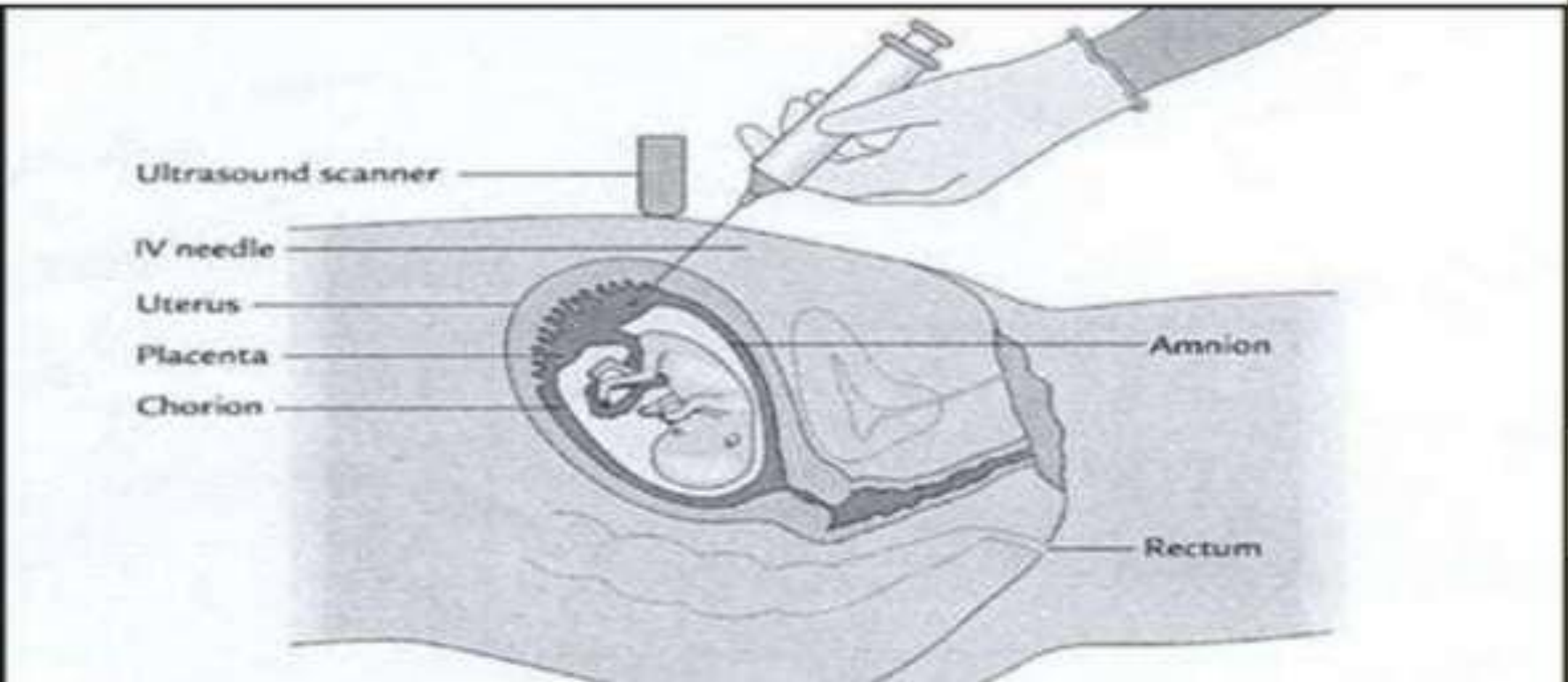
It is performed by inserting a thin plastic tube through vagina & cervix to reach placenta with the help of ultrasound guided images

- 10 weeks to 12 weeks



TRANSABDOMINAL

- It is performed by inserting a needle through the abdomen utreus to reach placenta with the help of ultrasound guided images
- 10 weeks to term



- Sample collected are sent to lab for direct preparation and culture in special fluids
- The sample is used to study the DNA , chromosomes, and certain signs (called chemical markers) of disease in the developing baby.
- It can be done sooner than amniocentesis, about 10 to 12 weeks after last menstrual period.
- Test results take about 2 weeks.

RESULTS

- Normal Results

A normal result means there are no signs of any genetic defects.

- Abnormal Results
- Down syndrome
- Hemoglobinopathies- sickle cell anemia
- Tay-Sachs disease
- sex linked disorders – muscular dystrophy

More than 200 gentic disorder can be identified

- Flase positive – placental mosaics
  maternal cell contamination

- It does not detect
  Neural tube defects
  Rh incompatibility
  Congenital defects

- It is also useful in determining paternity of a child prior to delivery

Risks

- Miscarriage 1:100
- Infection
- Spotting
- Cramping and pain at puncture point
- Bleeding
- Rupture of membrane
- Limb reduction defects (LRD) when performed at <9 weeks

CONTRAINDICATIONS

- Women who
  - Have an active infection(STD)
  - Carrying twins
  - Have experinced vaginal bleeding during pregnancy
  - Having uterine fibroids
  - Having tilted utreus

THANK YOU