Amniocentesis

Amniocentesis is a procedure indicated in the early identification of chromosomal and genetic abnormalities, as well as an indicator of fetal lung maturity and a secondary tool for evaluating fetal hemolytic disease. It is completed no earlier than 14 weeks gestation and involves withdrawing amniotic fluid under direct visualization ultrasound and evaluating the fetal cells contained in the amniotic fluid.

PLAY PICMONIC

Mechanism

Transabdominal Puncture
Abs Punctured
The procedure involves a needle puncture through the abdominal wall into the amniotic sac under direct visualization ultrasonography.

> 14 weeks gestation
>14 weeks Pregnant-woman
This procedure can be performed anytime after the 14th week of gestation. After the 14th week there is typically sufficient amniotic fluid for examination and the uterus is easily identifiable under ultrasonography.

Indications

Genetic and Congenital Anomalies
Genes and Animal-anomalies in Pregnancy
This procedure allows for the early diagnosis of more than 40 chromosomal genetic abnormalities like Down syndrome, as well as many developmental abnormalities such as neural tube defects. This early diagnosis allows for the mother to make an informed decision about therapeutic abortion, if that is her choice. The presence of alpha-fetoprotein (AFP) is an indicator of neural tube defects.

Fetal Hemolytic Disease
Fetus with Lysed RBCs
This procedure allows for the early identification of fetal hemolytic diseases of the newborn by evaluating the fetal cells in amniotic fluid.

Fetal Lung Maturity
Fetus with Lungs
The maturity of the fetal lungs can be determined by assessing the amniotic fluid. However, this procedure is no longer routinely performed.

Complications

Miscarriage
Missed-carriage
Amniocentesis especially when performed earlier in the pregnancy is associated with a higher risk of spontaneous abortion or miscarriage due to irritation of the membrane.

Hemorrhage
Hemorrhage-hammer
While pain is common within the first 48 hours after the procedure, the risk of bleeding or hemorrhage is possible as damage may occur to the highly vascular muscular layers of the uterus and placenta and cause direct injury to the fetus. Ultrasound has greatly decreased the risk of hemorrhage.

Infection

Infectious-bacteria

Maternal or fetal infections can result after this procedure including chorioamnionitis. Ensuring strict use of sterile procedures reduces this risk.

Considerations

RhoGAM (Rh Immune Globulin)

Row-groom

The possibility of interaction of fetal and maternal blood indicates the administration of Rh immune globulin (RhoGAM) to Rh negative mothers after this procedure to prevent antibody formation.