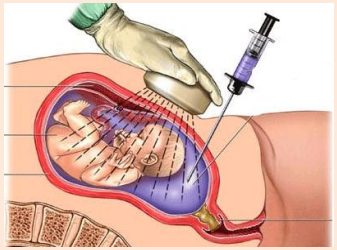
Complication of amniocentesis

Small amount of amniotic fluid about 20 cc. can be taken out without harmful to both mother and fetus. Before perform amniocentesis, obstetrician will do ultrasonogram examination to determine gestational age, fetal position, placenta position and detect major structure abnormality of the fetus. The proper area that can insert the needle safely will be marked. Abdominal wall will be clean with antiseptic solution. Small needle will be inserted through abdominal wall under ultrasound guided into amniotic sac to make sure that the needle will be in the right place, then 20 cc of amniotic fluid will be withdrawn and needle removed. The patient will feel slight discomfort as same as blood test. Amniocentesis usually will be done at 16 - 18 weeks of gestation. Therefore, before performing amniocentesis the couple should always be informed about the risk and benefit.

The fetal loss rate after second trimester genetic amniocentesis

The fetal loss rate attribute to amniocentesis is less than 1% (1 in 500 – 1 in 769). The total fetal loss rate was not significantly different from that observed in patients who had no procedure.



Amniotic Fluid Aspiration

There is a higher risk of fetal loss following amniocentesis in woman >40 years of age compare with aged 20-34 years, bleeding in the current pregnancy, a history of 3 or more first trimester abortions, a second trimester miscarriage or termination of pregnancy seem to be significant predisposing factors for fetal loss with the odd ratio of 2.4-3.0.

Limitation of amniocentesis

Baby with mental retardation or some abnormality can occur from other causes beside chromosome abnormality. Therefore fetus with normal chromosome does not mean that he will be 100 % normal.

Couple who need genetic counseling

1. Woman who is 35 year old or older
2. Couple with previous child with mental retardation or chromosome abnormal
3. Couple with previous congenital malformation child
4. More than 2 spontaneous miscarriages
5. Exposed to radiation during pregnancy
6. Family history of genetic diseases

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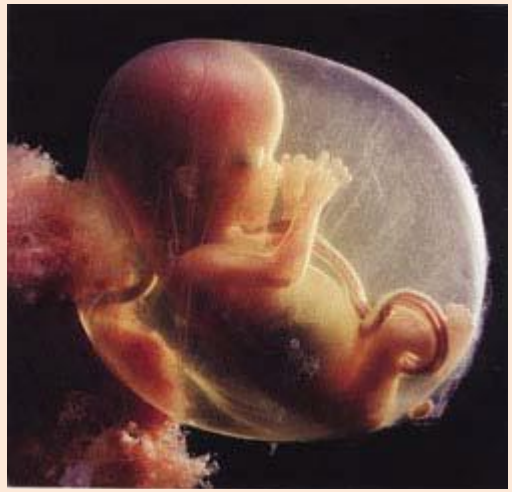
CHROMOSOME CENTER

Chromosome Laboratory Center CO., LTD

Detection of Abnormal Fetal Chromosome



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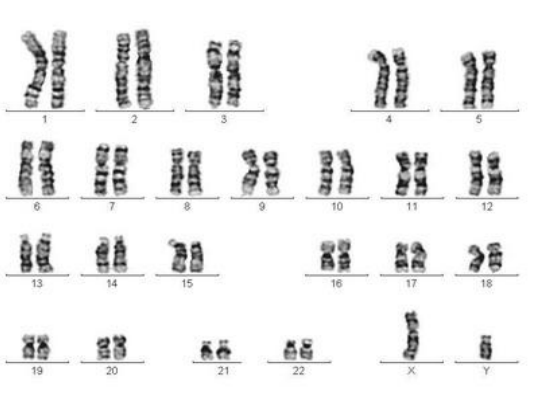
Chromosome

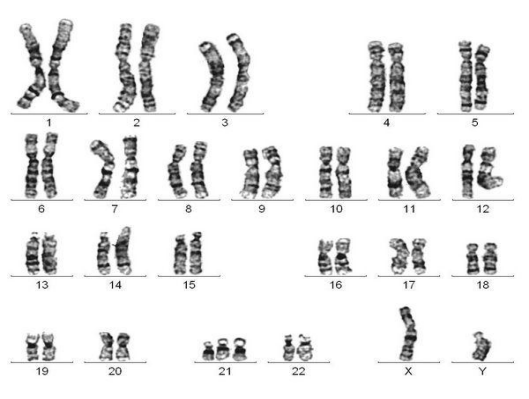
Human organs consist of many tiny units call “cell”. Cells of each organ have difference shape and functions. At present we do not know what control function of these cells. There is small mass call “nucleus” inside these cells. Inside the nucleus there are tiny thread like structures call “chromosome” Even though these cells are difference in shape and function but chromosomes are the same in every organ. Each chromosome consists of small unit call “gene” inside. The genes‟ function is to control the development of human organs and characteristic such as sex, color of eyes, skin, and hair and also help development of intelligence and function of organs. At present the scientists know only function of some gene.

In human there are 23 pairs of chromosomes. One member of each pair comes from the father’s sperm cell and the other member of the pair comes from the mother’s egg cell. In other words, the baby receives half of its genetic material from the mother and half from the father. The sex chromosome is Chromosome X and Y. The male chromosome is XY, and a female chromosome is XX.



Normal Karyotype [46, XY]

People who do not have exactly 23 pair of chromosomes will have some kind of deformity or mental retardation. At present the scientists know only function of some gene. Example of people with abnormal chromosome that is well recognized is people with Down syndrome who has shot status flat nose, flat forehead, mental retardation and some may has congenital heart defect. People with Down syndrome have 3 pieces of chromosome number 21.



Trisomy 21 (Down Syndrome)

Chromosome abnormal occurs during fertilization. There are many factors that increase risk of chromosome abnormality such as woman’s age, older woman will have higher incidence of baby with abnormal chromosome, couple with previous child with abnormal chromosome also has higher risk.

How old is too old?

For obstetric consideration, pregnant woman who is beyond 35 year old is call elderly gravida and she is at risk of having chromosome abnormal child. The estimate risk is

1% for 35 year old woman
2 % for 39 year old woman
8 % for 45 year old woman

How can we detect fetal chromosome

With modern medical technology, doctor can detect fetus’s chromosome by technique call “amniocentesis”. Amniocentesis is the procedure that obstetrician obtain small amount of fluid around the fetus (amniotic fluid) by insert small needle through abdominal wall under ultrasound guided into amniotic sac. There are many fetal cells in amniotic fluid. These fetal cells will be cultured and grew in the laboratory. The numbers and character of chromosome can be studied after culture for 2-3 weeks. By doing “amniocentesis” obstetrician can detected fetus with abnormal chromosome before the baby is born. This process is call “prenatal diagnosis”. The couple who have fetus with chromosome abnormal will be giving genetic counseling so they can decide the plan for management of the pregnancy