Amniocentesis

Science, Biology

AMNIOCENTESIS Amniocentesis Amniocentesis is a procedure which involves the extraction of a small quantity of amniotic fluid from the mother's uterus for diagnostic purposes. This amniotic fluid can be used to detect many genetic and metabolic disorders of the baby because the fluid carries cells of the baby as it circulates in and out of the baby's body. The role of amniocentesis as a prenatal diagnostic test is controversial. Firstly, it is an invasive procedure and is associated with a list of potential risks. Although it is highly beneficial in detecting the genetic and hereditary metabolic disorders, some people who are against abortion will not find this procedure useful (Sloane 2002; O'Mara et al 2003). The risks and benefits of amniocentesis should be considered before opting for this prenatal test. Amniocentesis is mostly recommended after false positive or false negative triple screen test which is a simple blood tests used for the same purposes. Amniocentesis is performed with the aid of ultrasound and the amniotic fluid is collected through a needle and takes about 45 minutes. The collected fluid is used for laboratory analysis. 14 and 20 weeks of pregnancy are the most suitable time for the procedure to be performed. However, the amniocentesis can be delayed till the third trimester (America Pregnancy Association 2006). The procedure is indicated mostly in pregnant women above the age of 35, a couple who has a history of previous children with Down's Syndrome or any other chromosomal abnormality, history of genetic disease in the family and detection of any chromosomal abnormality in any of the parents (Sloane 2002).

The most common chromosomal abnormality looked for in amniocentesis is Down's syndrome or Trisomy 21. Neural tube defects like spina bifida and

genetic disorders like cystic fibrosis are also looked for in the amniotic fluid. More than 70 inborn errors of metabolism can be detected through amniocentesis for instance Tay’ Sachs disease, Fabry’s disease, galactosemia and Gaucher’s disease. The increasing age of the mother is a high risk factor for development of chromosomal abnormalities specifically Down’s syndrome. Hence, the importance of amniocentesis in older age mothers increases. With early detection of the disorders, an abortion can be performed to prevent the birth of a baby suffering from a lifetime of deformity and suffering. However, those who disagree with the notion of abortion, this procedure is mostly useless for them (Sloane 2002; American Pregnancy Association 2006).

Since amniocentesis is an invasive procedure, it is also associated with some unsafe outcomes. A potential risk of miscarriage of about 1-3% has been observed. However, the risk can be reduced if the procedure is performed with high levels of skill and care. Observations of low birth weight babies in an estimate of 0. 5% mothers and increased incidence of respiratory distress syndrome have also been documented. In case the procedure has to be repeated because of any reason, the risk of miscarriage increases from 3% to 6% (O’Mara et al 2003). Maternal risks include rupture of bladder, intestines or any blood vessels. Some minor potential side effects include cramping pains, fluid leakage and irritation at the site of the puncture (Sloane 2002; American Pregnancy Association 2006).

Amniocentesis is greatly effective in the early detection of genetic, chromosomal and neural defects in the baby. This provides the couple an early awareness of their baby’s condition and they can plan before time for

instance planning for a fetal surgery, indentifying support groups and special needs for the child and even early abortion. In spite of its significant role in prenatal testing, amniocentesis is associated with minor maternal risks and some high potential fetal risk factors like miscarriages.

References

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