**Abortion / Miscarriage**

Miscarriage, also known as spontaneous abortion and pregnancy loss, is the natural death of an embryo or fetus before it is able to survive independently. Some use the cutoff of 20 weeks of gestation after which fetal death is known as a stillbirth. The most common symptoms of a miscarriage is vaginal bleeding with or without pain. Sadness, anxiety and guilt may occur. Tissue or clot-like material may also come out of the vagina.

Risk factors for miscarriage include an older parent, previous miscarriage, exposure to tobacco smoke, obesity, diabetes, and drug or alcohol use, among others. In those under the age of 35 the risk is about 10% while it is about 45% in those over the age of 40. Risk begins to increase around the age of 30. About 80% of miscarriages occur in the first 12 weeks of pregnancy (the first trimester). The underlying cause in about half of cases involves chromosomal abnormalities. Other conditions that can produce similar symptoms include an ectopic pregnancy and implantation bleeding. Diagnosis of a miscarriage may involve checking to see if the cervix is open or closed, testing blood levels of human chorionic gonadotropin (hCG), and an ultrasound.

Prevention is occasionally possible with good prenatal care. Avoiding drugs and alcohol, infectious diseases, and radiation may prevent miscarriage. No specific treatment is usually needed during the first 7 to 14 days. Most miscarriage will complete without additional interventions. Occasionally the medication misoprostol or a procedure such as vacuum aspiration is required to remove the failed pregnancy. Women who are rhesus negative may require Rho(D) immune globulin. Pain medication may be beneficial. Emotional support may help with negative emotions.

Signs and symptoms

The most common symptom of a miscarriage is vaginal bleeding. The bleeding may come and go over several days. However, light vaginal bleeding is relatively common during the first trimester of pregnancy (the first 12 weeks) and does not necessarily indicate a miscarriage.

Miscarriage may be detected during an ultrasound exam, or through serial human chorionic gonadotropin (HCG) testing. Those who became pregnant using assisted reproductive technology methods, and those with a history of miscarriage may be monitored closely, and may be diagnosed with miscarriage sooner.

The physical symptoms of a miscarriage vary according to the length of pregnancy, though most miscarriages cause pain or cramping. The size of blood clots and pregnancy tissue that are passed become larger with longer gestations. After 13 weeks' gestation, there is a higher risk of placenta retention.

Causes

Miscarriage may occur for many reasons, not all of which can be identified. Some of these causes include genetic, uterine, or hormonal abnormalities, reproductive tract infections, and tissue rejection. Miscarriage caused by invasive prenatal diagnosis (chorionic villus sampling (CVS) and amniocentesis) is rare (about 1%).

Induced miscarriage

If a pregnant woman does not want to give birth, doctors may induce a therapeutic abortion. In places where induced abortion is illegal or carries heavy social stigma, those who wish to end the pregnancy may attempt self-induced abortion, sometimes called "induced miscarriage" or "self-induced miscarriage".

Risk factors

* Multiple pregnancy
* Intercurrent diseases (diabetes, polycystic ovary syndrome (PCOS), hypothyroidism, certain infectious diseases, and autoimmune diseases)
* Diseases transmitted vertically (through the placenta to the fetus), such as rubella or chlamydia
* Mycoplasma genitalium infection is associated with increased risk of preterm birth and miscarriage
* Smoking
* Age (Advanced maternal age)
* Morning sickness (Nausea and vomiting of pregnancy are associated with a decreased risk)
* Exercise(with the exception of swimming) prior to 18 weeks
* Caffeine
* Antidepressant medication
* Other (Sexual intercourse, Cocaine)

Diagnosis

Bleeding during early pregnancy is the most common symptom of both impending miscarriage and of ectopic pregnancy. Pain does not strongly correlate with the former.

Tests: Typically, in the case of blood loss, pain, or both, **transvaginal ultrasound** is performed. If a viable intrauterine pregnancy is not found with ultrasound, **serial βHCG tests** should be performed to rule out ectopic pregnancy, which is a life-threatening situation.

A miscarriage may be confirmed via **obstetric ultrasound** and by the examination of the passed tissue. When looking for microscopic pathologic symptoms, one looks for the products of conception.

**Ultrasound criteria:**

Miscarriage should be diagnosed only if any of the following criteria are met upon ultrasonography visualization:

* Crown-rump length of at least 7 mm and no heartbeat.
* Mean gestational sac diameter of at least 25 mm and no embryo.
* Absence of embryo with heartbeat at least 2 weeks after an ultrasound scan that showed a gestational sac without a yolk sac.
* Absence of embryo with heartbeat at least 11 days after an ultrasound scan that showed a gestational sac with a yolk sac.

In addition, signs upon ultrasonography that are suggested to be suspicious for miscarriage, but not diagnostic of it, include:

* Crown–rump length of less than 7 mm and no heartbeat.
* Mean gestational sac diameter of 16–24 mm and no embryo.
* Absence of embryo with heartbeat 7–13 days after an ultrasound scan that showed a gestational sac without a yolk sac.
* Absence of embryo with heartbeat 7–10 days after a scan that showed a gestational sac with a yolk sac.
* Absence of embryo at least 6 weeks after last menstrual period.
* Amniotic sac seen adjacent to yolk sac, and with no visible embryo.
* Yolk sac of more than 7 mm.
* Small gestational sac compared to embryo size (less than 5 mm difference between mean sac diameter and crown–rump length).

Classification

* Anembryonic pregnancy (also called an "empty sac" or "blighted ovum")
* Inevitable miscarriage occurs when the cervix has already dilated
* Complete miscarriage is when all products of conception have been expelled
* Incomplete miscarriage occurs when some products of conception have been passed, but some remains inside the uterus.
* Missed miscarriage (delayed miscarriage, silent miscarriage, or missed abortion) is when the embryo or fetus has died, but a miscarriage has not yet occurred.
* Septic miscarriage occurs when the tissue from a missed or incomplete miscarriage becomes infected
* Recurrent miscarriage ("recurrent pregnancy loss" (RPL) or "habitual abortion")

Prevention

Prevention of miscarriage centers on decreasing risk factors. This may include good prenatal care, avoiding drugs and alcohol, preventing infectious diseases, and avoiding radiation. Identifying the cause of the miscarriage may help prevent future pregnancy loss, especially in cases of recurrent miscarriage. Often there is little a person can do to prevent a miscarriage.

Treatment

It is estimated about half of early miscarriages will complete on their own; in other cases, medication treatment or aspiration of the products of conception can be used to remove remaining tissue. Emergency care may become necessary in cases of very heavy bleeding or fever.

Methods

No treatment is necessary for a diagnosis of complete miscarriage (so long as ectopic pregnancy is ruled out). In cases of an incomplete miscarriage, empty sac, or missed abortion there are three treatment options: **watchful waiting**, medical management, and surgical treatment. With no treatment (watchful waiting), most miscarriages (65–80%) will pass naturally within two to six weeks. This treatment avoids the possible side effects and complications of medications and surgery. **Medical treatment** usually consists of using **misoprostol (a prostaglandin)** to contract the uterus, pushing the products of conception out of the cervix. **Surgical treatment** for a miscarriage can be used to complete the removal of pregnancy tissue, and shortens the duration and severity of bleeding and pain. **Vacuum aspiration** or **sharp curettage** can be used, though vacuum aspiration is lower-risk and more common.