RESEARCH ARTICLE

# A Few Words about Spontaneous Abortion

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**ABSTRACT**

Spontaneous abortion is considered the loss of a fetus before the 20th week of gestation, and most often occurs in the first 12 weeks of gestation. It occurs in about 15 percent of pregnancies. 85 percent of women who have had a miscarriage can become pregnant normally and carry out their next pregnancy. The symptoms of spontaneous abortion vary. Abortion usually causes more or less severe cramps, often accompanied by bleeding, from mild to very severe, and blood clots. In addition to the diagnosis of spontaneous abortion according to the characteristic clinical picture, gynecological examination, ultrasound diagnostics and measurement of human chorionic gonadotropin (β-hCG) levels are also of great help.

**Key words:** Abortion, Spontaneous Abortion, PAC, Legal View

## INTRODUCTION

Without doubt, abortion is a controversial topic that tends to raise an emotional response [1]. There is nothing wrong with having an opinion on the ethics of abortion, provided it is supported by analysis, debate and a thorough understanding. There are generally one of two positions a person may take. One view is that at any stage abortion is abhorrent and, once conception has taken place, the foetus should be regarded as a person and cannot be aborted. The other view is that it is the woman's autonomous decision what she decides to do with her body. We shall see that there is also a middle ground. We begin the discussion with a focus on the moral status of the fetus.

Spontaneous abortion, or miscarriage, is the loss of a pregnancy from natural causes prior to the 20th week of gestation [2]. Approximately 15% to 20% of pregnancies end in miscarriage.

The causes of spontaneous abortion are varied and often unknown[3]. The most common cause for first-trimester abortions is fetal genetic abnormalities, usually unrelated to the mother. Those occurring during the second trimester are more likely related to maternal conditions, such as incompetent cervix, congenital or acquired anomaly of the uterine cavity, hypothyroidism, diabetes mellitus, chronic nephritis, use of crack cocaine, inherited and acquired thrombophilias, lupus, and acute infection such as rubella virus, cytomegalovirus, herpes simplex virus, bacterial vaginosis, and toxoplasmosis.

## ABORTION

The termination of a pregnancy is a powerful act, with significant psychologic meanings and implications arising from personal psychodynamics and experience, religion, interpersonal relationships, and biology [4]. Induced abortion is an act enmeshed in its social surroundings in every respect: etiology, performance, and sequelae. Although, pregnancies have been terminated at every time in history and on every continent of the world, the psychologic aspects of abortion are so closely culture bound that it is not possible either to discuss it generically or to do justice to more than one culture and its legal system.

Abortion is a medical intervention that evokes a great amount of feeling in the United States. Elections for public office are

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**DOI:** 10.33309/2638-7697.040102

won and lost on the basis of candidates' positions toward abortion funding, access, availability, acceptable grounds, and the right of potentially concerned parties other than the pregnant woman herself to be informed of or to consent to the procedure. Both the intensity of feeling about abortion and the avoidance of the subject are reflected in confusing terminology. The term abortion is used by gynecologists to describe both induced abortion and spontaneous abortion, or miscarriage. Induced is a more accurate descriptor than elective; abortion is also induced in cases of fetal defects incompatible with life and of medical complications threatening the life of the mother.

The issue of abortion is so contentious that fundamental realities are often overlooked. Consideration of these realities is essential not only for policymaking but also for clinical practice and scientific study. First of all, abortion is performed only on women who are pregnant. If an abortion is not performed (and barring complications such as spontaneous abortion), these women will go on to deliver. Study of the outcome of abortion without comparison with the sequelae of labor, delivery, and motherhood has very limited scientific validity and practical utility. The only truly appropriate control group for such studies is women who found their pregnancies similarly problematic, who sought abortion, and who were unable to obtain it. Findings from the few such studies that have been performed are summarized here. Women considering abortion are not only pregnant, but pregnant under circumstances they experience as untenable. The circumstances also make a substantive contribution to outcome; the abortion procedure does not have an impact in isolation. Last, the effects of social and medical context on the experience and outcome of abortion are often overlooked. These considerations are discussed further in the section on psychiatric issues.

Abortion entails two simultaneous events: it kills a living fetus (or embryo or zygote), and it also puts an end to the woman's condition of being pregnant [5]. The point is easy enough to see in the case of a forced abortion. When a pregnant woman wishes to remain pregnant until the birth of her child, the forced termination of her pregnancy through abortion results in the infliction of two harms. It attacks both the life of the fetus and the pregnant woman's bodily integrity.

People on both sides of the abortion issue understand this confluence of interests when a woman wants to be pregnant, which is why pro-life and pro-choice advocates can comfortably unite in opposing forced abortions as a profound violation of human rights. For similar reasons, most of us can empathize with the grief that can accompany a miscarriage (or "spontaneous abortion") for a pregnant woman who wanted to remain pregnant. In Japan, people acknowledge and provide a means of commemorating the loss of a fetus or embryo, called a "mizuko" or "water baby," whether through miscarriage or induced abortion (which can itself represent an ambivalent choice).

## ETIOLOGY

Etiology is unknown, but postulated causes for miscarriage include the following [2]:

• Genetic anomalies/chromosomal disorders

• Inadequate endometrial stem cells

• Maternal infections

• Endocrine disorders

• Uterine anomalies

• Incompetent cervix

• Age; According to the ACOG (American College of Obstetricians and Gynecologists), one-third of pregnancies in women over the age of 40 results in early pregnancy loss

## SYMPTOMS

• Vaginal bleeding or spotting [2]

• Severe, persistent headaches

• Prolonged vomiting, severe enough to prevent adequate intake of liquids

• Blurred vision or spots before the eyes

• Fever and chills, not accompanied by a cold

• Sudden intense or continual abdominal pains and cramping

• Sudden gush of fluid from the vagina

• Sudden swelling of hands, feet, and ankles

• Frequent burning urination

• Pronounced decrease in fetal movement

## HEMORRHAGE

Hemorrhage during pregnancy continues to be a leading cause of morbidity and mortality [6]. Although at times

it may be minor, bleeding can be life threatening when profuse hemorrhage leads to maternal hypovolemia, anemia, and complications such as infection. Major causes of hemorrhage during pregnancy include ectopic pregnancy (implantation outside of the uterus), threatened spontaneous abortion (confirmed pregnancy with vaginal bleeding), inevitable spontaneous abortion (ruptured membranes with progressive cervical dilation before 20 wk gestation), complete spontaneous abortion (bleeding and cramping until passage of the whole conceptus (before 20 wk gestation), incomplete abortion (bleeding and cramping with retention of some of the conceptus), missed abortion (fetus has died but is retained with the placenta in the uterus), septic abortion (from infection), gestational trophoblastic disease ([GTD]; and includes hydatidiform mole [molar pregnancy]), cervical insufficiency (painless dilation of the cervix in the absence of contractions), placenta previa (abnormally implanted placenta that partially or completely covers the cervix), placental abruption (premature separation from the uterine wall of a normally implanted placenta), and uterine rupture.

In early pregnancy, assessments begin with confirmation of pregnancy, determination of gestational age, and correlation of gestational age with fundal height. The amount and characteristics of bleeding as well as its origin, the severity of pain, and other accompanying signs determine priorities in physical assessment. In late pregnancy, medical and nursing assessments are often simultaneous. Bleeding can range from light pink spotting to dark brown (old blood). It may be like a heavy menses (up to 1000 mL of blood flows through the placenta). Bleeding can progress rapidly to massive hemorrhage with significant morbidity or mortality for the mother and fetus.

## DIAGNOSIS

Spontaneous abortion is diagnosed by history of bleeding and pain, physical examination, and by ultrasound examination when available [7]. Serial serum quantitative human chorionic gonadotropin (hCG) monitoring helps in some cases. Because routine, early first-trimester prenatal sonogram for dating or for first-trimester screening is highly prevalent in the USA and many other countries, women often receive the diagnosis of EPF (early pregnancy failure) prior to the development of any symptoms.

Sonographic findings diagnostic of EPF include either an embryo 5 mm or greater in size without cardiac activity or a mean gestational sac diameter 13 mm or greater with absent yolk sac. A recent report using 5 to 6 mHz transducers found that 100% specificity was not reached until a cutoff of 16 mm. With or without symptoms, these findings indicate EPF. Because both pregnancy dating and sonography are imperfect, diagnosis of spontaneous abortion in a woman with a wanted pregnancy may require two sonographic assessments to differentiate an EPF from a misdated pregnancy. When no yolk sac is visible, the clinician must also consider the diagnosis of ectopic pregnancy. In addition to ultrasound, serial hCG levels performed approximately 2 days apart can help distinguish normal from abnormal pregnancies. When a yolk sac is not clearly visible on ultrasound and serial hCG levels are not rising normally, uterine evacuation with inspection of tissue for the presence of villi can definitively distinguish between ectopic pregnancy and EPF.

## Fetal Death

Intrauterine fetal deaths that occur later in pregnancy (after twenty weeks, defined as stillbirths) are not common, occurring in about 0.6 percent of pregnancies [8]. Stillbirths are generally caused by partial detachment of the placenta from the wall of the uterus, which is called placental abruption, or by obstruction of the blood supplied through the umbilical cord. Compression of the blood vessels in the umbilical cord, shutting off the blood supply to the fetus, may occur if the cord becomes knotted or wrapped tightly around the infant's neck or limbs. If the placenta becomes separated or the cord becomes obstructed, the fetus no longer receives oxygen and nutrients from the mother, and dies. Drug abuse during pregnancy is also associated with stillbirths (about 4 percent). Cocaine use is of particular note because the vasoactive effects may lead to placental abruption. A dead fetus is usually expelled promptly, but occasionally it is retained within the uterine cavity for several weeks or months.

If a dead fetus is retained for some time within the uterine cavity, products of degenerated fetal tissue diffuse into the maternal circulation. This material has thromboplastic activity and may induce a hemorrhagic disease in the mother because of depletion of maternal blood coagulation factors, which occurs when the coagulation mechanism is activated by the thromboplastic material. A retained dead fetus is one cause of the disseminated intravascular coagulation syndrome (DIC), which is discussed in the abnormalities of blood coagulation.

## DEPRESSION

Depression may present as a major depressive episode or as minor depression during pregnancy although studies are not consistent that there is any increased occurrence of depression during pregnancy [9]. The somatic changes of

pregnancy may include fatigue, sleep, and appetite changes such that inquiring about sadness, guilt, anxiety symptoms, or suicidal thoughts become more important in establishing the diagnosis of major depression. Unfavorable outcomes of untreated major depression during pregnancy may include inadequate prenatal care, low birth weight, preterm delivery, fetal hyperactivity, and neonatal depressive symptoms.

Effects of antidepressant during pregnancy may include the following: a one and a half times greater likelihood of spontaneous abortions, unlikely major congenital malformations except slight possible increase in cardiovascular malformations with paroxetine, minimal preterm risk (<1 week), unlikely small for gestational age births, and unlikely persistent pulmonary hypertension with later pregnancy SSRI (selective serotonin reuptake inhibitors) or SNRI (serotonin norepinephrine reuptake inhibitors) use. The neonatal behavioral syndrome may occur due to SSRI/SNRI use in the third trimester with neonates experiencing jitteriness, increased reflexes, and vomiting that resolve within 2 weeks, while more severe symptoms may need special care nursery admission.

## TREATMENT

Successful management of spontaneous abortion depends on early diagnosis [910]. Every patient should have a complete history taken and a physical examination performed. Laboratory studies include a complete blood count, blood type, and cervical cultures to determine pathogens in case of infection.

If the diagnosis of threatened abortion is made, pelvic rest can be recommended, although it has not been shown to prevent subsequent miscarriage. Prognosis is good when bleeding and/or cramping resolve.

If the diagnosis of a missed or incomplete abortion is made, options include surgical, medical, or expectant management. In the past, surgery was the standard of care because of concern that medical or expectant management would lead to higher rates of retained pregnancy tissue and subsequent infection. More recently, expectant or medical management are acceptable alternatives and have even shown lower rates of infection despite their higher rates of retained products of conception. These patients also avoid the risks of surgery, including uterine perforation, intrauterine adhesions, and cervical insufficiency. The advantages of performing a D&C (dilation and curettage ) include convenient timing and low rates of retained products of conception.

Expectant management allows the spontaneous passage of products of conception and avoids risks of surgery. Risks and side effects include unpredictable timing until the abortion is completed with the possibility of significant pain and bleeding, occasionally requiring emergent D&C. Expectant management also has the highest rates of retained pregnancy tissue, necessitating treatment with misoprostol (prostaglandin E1) or D&C.

## PAC

Postabortion care (PAC) is a critical health-care service that can save women's lives in settings where abortion is performed unsafely [11]. At minimum, PAC services should provide treatment for complications of spontaneous or induced abortion and strengthened family planning counseling and contraceptive method provision, both immediately after a procedure and in subsequent follow-up, to prevent unintended pregnancies that can lead to repeat abortions. Attempts to institute PAC services only gained momentum in the wake of the 1994 Cairo conference. International health organizations and donors then began providing technical and financial support for PAC programs. Several PAC models were introduced with links slowly developed between emergency abortion treatment services and comprehensive reproductive health care, focused primarily on clinical and related facility-based services from a health-care provider perspective. Attention was given to improving both technical competence in medical treatment of incomplete abortion and interpersonal communication with patients. This also led to an increased stress on the holistic treatment of the patient as opposed to improving a single aspect of services, such as the use of MVA instruments.

Current best practices in PAC programming, like those in safe motherhood programming, show the importance of minimizing delays in receiving care. At the facility level, at least three types of services are needed. These include emergency treatment of postabortion complications, counseling on PAC treatment and family planning, including direct provision of contraceptives or referral, and referral for other reproductive health services. These might include, for example, STI/HIV prevention education, screening, diagnosis, treatment, screening for sexual and/or domestic violence (with treatment as needed), and referral for medical, social, and economic services and support. Effective contraceptive methods should be initiated immediately postabortion or no later than 7 days, in order to prevent another unwanted pregnancy. Primary care facilities with limited health-care capacity can stabilize and refer clients with postabortion complications to hospitals for treatment, provide referrals for reproductive and other health services to other accessible facilities in providers' networks, and serve as a site for follow-up and provision of family

planning counseling and methods to better space or prevent subsequent pregnancies.

## LEGAL VIEW

When it comes to deciding upon the general structure of abortion regulation, the law has a whole menu of options from which to choose [12]. Abortion can be criminalized in its entirety, or decriminalized only where specific circumstances are made out, as it is under the Abortion Act 1967 in England, Wales, and Scotland. The British legislation, introduced in order to legalize abortions deemed socially acceptable, operates by providing exceptions to default criminal liability for abortion where certain specified grounds are attested to by two doctors. Those grounds become stricter once the pregnancy has surpassed its twenty-fourth week.

A law of abortion which begins with default criminal liability and carves out exceptions can make those exceptions narrow or broad, numerous or few. Moreover, a lot depends on how much is open to interpretation. Some would argue that the liberal construction by medical professionals of ground 1(1) (a) of the Abortion Act in the years since its enactment has resulted in something close to 'abortion on demand' before twenty-four weeks of pregnancy. The ground provides that no one shall be criminally liable for an abortion where two registered practitioners form the good faith opinion that continuing the pregnancy poses a risk to a woman's 'physical or mental health', 'greater than if the pregnancy were terminated'. As it happens, medical professionals in Britain have interpreted this ground widely and do not, for example, insist on demonstrable proof that continued pregnancy will cause a woman clinical depression or another medically recognized psychiatric condition before agreeing that a 'mental health' ground is made out. But it is easy to see how things might be very different. By placing the interpretive and decision-making power in the hands of medical professionals, the Abortion Act effectively made the medical profession the gatekeepers of legal abortion in Britain. While this has resulted in a fairly permissive abortion practice today, a significant shift in medical opinion about abortion morality is all that it would take to completely overhaul this open practice.

A different kind of permissive abortion law might regulate only the medical procedures used in abortion to ensure standards of health and safety, leaving the decision to terminate entirely to women, either independently or in consultation with their doctors.

Access to abortion could be construed as a constitutional or human right within a legal system, or necessary for the fulfillment of some broader right, such as the right to privacy or procreative control. This, in essence, is the legal position on abortion in the United States as declared in the landmark decision Roe v Wade in 1973. In this alternative, the law does interfere, but on behalf of those who wish to obtain abortions. It might do so by placing principled legal limits on the kinds of restrictions on abortion that can be constitutionally valid, as in the US system, or, even, by making safe abortion provision a state obligation, something which Roe v Wade did not do.

## CONCLUSION

Common symptoms of spontaneous abortion are vaginal bleeding, uterine contractions, which are manifested by cramping pain in the lower abdomen, and leakage of amniotic fluid and the exit of parts of the fetus and placenta or fetus from the vagina. Symptoms occur in varying intensity and in different combinations, depending on the type of spontaneous abortion. It is important to emphasize that any bleeding in pregnancy is considered a pathological sign until the cause is found.

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**How to cite this article:** Franjic S, A Few Words about Spontaneous Abortion. Clin Res Obstetr Gynecol 2021;4(1):8-13.
DOI: 10.33309/2638-7697.040102