

CHAPTER 8 POST-ABORTAL CARE

Learning Objectives

By the end of this chapter, the participant will:

1. Discuss the impact of unsafe abortion on maternal morbidity and mortality.
2. List the methods of medical and surgical post abortion care.
3. Recognize post-abortion care as an essential component of emergency obstetrical care and that it should be available in every health facility.

Introduction

Abortion – whether spontaneous or induced – can be unsafe leading to death and injury for women. Treatment of abortion complications or post-abortion care (PAC) is considered an essential component of emergency obstetrical care services because it is one of the main causes of maternal mortality and morbidity.

Facts and Figures Related to Maternal Mortality due to Unsafe Abortion

- Of the 40 to 60 million abortions performed annually worldwide, an estimated 20 million are deemed unsafe, and 95% of these occur in developing countries.
- The World Health Organization (WHO) estimates that at least 80,000 women die annually as the result of unsafe abortion, accounting for almost 13% of the maternal deaths world wide, and in some countries up to 60%.
- Unlike many pregnancy-related problems and other accidents and illnesses, deaths and injury due to unsafe abortion are entirely preventable. They are caused by punitive laws, narrowly defined health policies, and failure to provide adequate health and family planning services.

Definition

The World Health Organization defines abortion as “the termination of pregnancy from whatever cause before the fetus is capable of extra uterine life (WHO, 1997: 2).

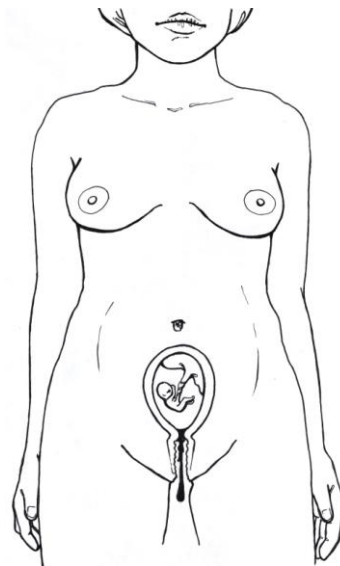
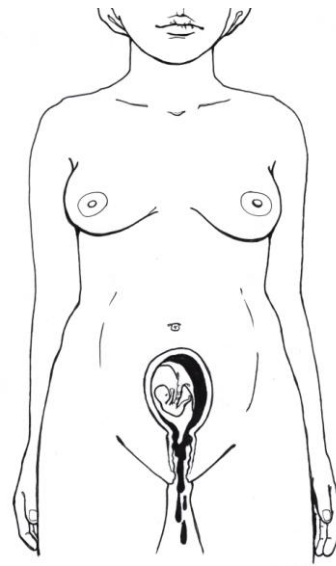
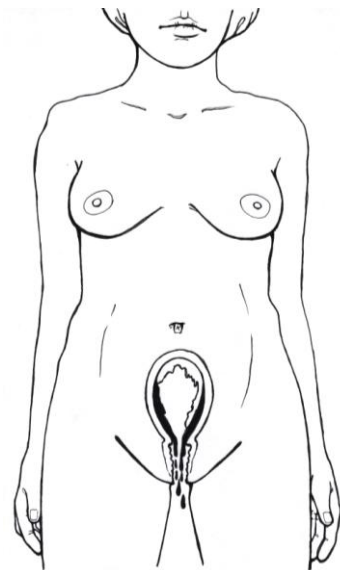
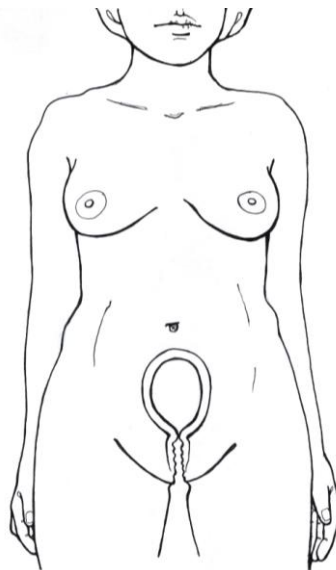
Types of Abortion

Spontaneous abortion

Spontaneous abortion refers “to those terminated pregnancies that occur without deliberate measures,” before 22 weeks of gestation” (WHO, 1997: 2). In the first trimester, spontaneous abortions are common, often because of chromosomal or developmental anomalies where normal development of an embryo or fetus does not occur.

The stages of spontaneous abortion may include:

- **Threatened abortion:** Bleeding occurs in early pregnancy without the opening of the cervix and/or evacuation of the products of conception (POC). It resolves by itself with no medical treatment.
- **Inevitable abortion:** The cervix is open and POC are visible. The pregnancy will not continue and will proceed to incomplete or complete abortion.
- **Incomplete abortion:** POC are partially expelled.
- **Complete abortion:** POC are completely expelled.

**Figure 1 - Threatened abortion****Figure 2 - Inevitable abortion****Figure 3 - Incomplete abortion****Figure 4 - Complete abortion**

Induced abortion

Induced abortion refers to “termination of pregnancy through a deliberate intervention intended to end the pregnancy.”(WHO, 1997: 2)

Induced abortion can be conducted in either a safe or an unsafe setting according to legal and health policy guidelines, or it may occur outside the health care system.

Septic abortion

Septic abortion is a spontaneous or induced abortion complicated by fever, endometritis, and parametritis leading to generalized infection or sepsis. It is often the result of an unsafe abortion.

Distinction between safe and unsafe abortion

- **Safe abortion** is a procedure and technique performed by trained health-care providers with proper equipment, correct technique, and sanitary standards.
- **Unsafe abortion** is a procedure performed either by persons lacking necessary skills or in an environment lacking minimal medical standards or both. Sepsis conditions are a frequent complication of unsafe abortion involving unsterilized instrumentation and procedure (WHO, 2003: 14).

Post-Abortal Care

Post-abortion care refers to the package of care needed to provide quality services following spontaneous abortion and unsafe abortion. Post-abortion care services should include both medical and preventive care.

Essential elements of the PAC model include:

- Emergency treatment of incomplete abortion and potentially life-threatening complications
- Post-abortion family planning counseling and services
- Links between post-abortion emergency services and the reproductive health care system (Winkler et al, 2000: 1-2)

Family planning services are an essential component of PAC. See Appendix 1, Family Planning Services as an Essential Component of Post-Abortal Care. Women who receive PAC without the necessary tools or information needed to prevent subsequent unwanted pregnancies and abortions may find themselves returning to health centers for similar services in the future. Lack of family planning information and tools leave women trapped in what has been called a harmful cycle of unwanted pregnancy and unsafe abortion (Senanayake, 2003). Research shows that reaching women at this critical stage helps to increase contraceptive use significantly, leading to fewer repeat and possibly unsafe abortions.

Clinical Features for Diagnosis of Abortion

The following table provides a summary of the main signs and symptoms to aid prompt differential diagnosis of an abortion.

Symptoms and Signs Typically Present	Symptoms and Signs Sometimes Present	Probable Diagnosis
Light bleeding* Closed cervix Uterus corresponds to date	Cramping Lower abdominal pain Uterus softer than normal	Threatened abortion
Heavy bleeding† Dilated cervix Uterus corresponds to dates	Cramping Lower abdominal pain Tender uterus No expulsion of POC	Inevitable abortion
Light bleeding Closed cervix Uterus smaller than dates Uterus softer than normal	Light cramping Lower abdominal pain History of expulsion of POC	Complete abortion

Symptoms and Signs Typically Present	Symptoms and Signs Sometimes Present	Probable Diagnosis
Heavy bleeding Dilated cervix Uterus smaller than dates	Cramping Lower abdominal pain Partial expulsion of POC	Incomplete abortion
Bleeding Dilated or closed cervix Uterus may or may not correspond to dates	Cramping Lower abdominal pain Tender uterus POC may or may not be retained Fetus may be alive or dead Fever	Septic abortion

***Light bleeding** takes longer than 5 minutes for a clean pad or cloth to be soaked.

† **Heavy bleeding** takes less than 5 minutes for a clean pad or cloth to be soaked.

Adapted from: *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth*. WHO, 2000: S-7-S-17.

Management

General management

Every health care system must provide some level of PAC, whether at the district and/or community level. The services provided will depend on the type of facility and its capacities.

Suggested post-abortion care services by level of health care facility and staff

Level of Care	Possible Staff	Suggested Post-Abortal Care Activities
Community	<ul style="list-style-type: none"> Health workers and visitors (e.g. health assistants and equivalents) Nurses Midwives including traditional birth attendants Family physicians and general practitioners 	<ul style="list-style-type: none"> Education about the dangers of unsafe abortion Promotion and provision of family planning information and services Recognitions of signs and symptoms of abortion and complications Timely referral to the formal health care system Performing emergency care
District	<ul style="list-style-type: none"> Health workers and visitors (e.g. health assistants and equivalents) Nurses Midwives including traditional birth attendants Family physicians and general practitioners 	<p>All of the above, plus</p> <ul style="list-style-type: none"> Simple physical and pelvic examination Diagnosis of spontaneous abortion Resuscitation and preparation for treatment or transfer to next level of care Hemoglobin and hematocrit testing Referral, if needed <p>If trained staff and appropriate equipment are available, the following additional activities can be performed at this level:</p> <ul style="list-style-type: none"> Initiation of essential PAC including antibiotic therapy, intravenous fluids replacements and administration of uterotonics Uterine evacuation during first trimester (manual vacuum aspiration) Basic pain management (paracervical block, simple analgesia, sedation)

Level of Care	Possible Staff	Suggested Post-Abortal Care Activities
Referral	<ul style="list-style-type: none"> • Nurses • Midwives • Family physicians and general practitioners • Specialists with training in obstetrics and gynaecology 	All of the above, plus <ul style="list-style-type: none"> • Emergency uterine evacuation in the second trimester • Treatment of most complications of abortion • Blood cross-matching and transfusion • Local and general anesthesia • Laparotomy and indicated surgery, including for ectopic pregnancy, if skilled staff are available • Diagnosis and referral for severe complications such as septicemia, peritonitis, or renal failure
Tertiary Care	<ul style="list-style-type: none"> • Nurses • Midwives • Family Physicians/General Practitioners • Specialists with training in obstetrics and gynaecology 	All of the above, plus <ul style="list-style-type: none"> • Uterine evacuation as indicated • Treatment of bowel injury, tetanus, renal failure, gas gangrene, severe sepsis • Treatment of coagulopathy

Adapted from: *Managing incomplete abortion, Education material for teachers of midwifery. Second Edition. WHO: 2006: 28.*

Wherever a woman in need of PAC presents herself, the following management guidelines should be followed:

1. Every woman seeking PAC care should receive supportive and compassionate care responsive to her circumstances. Care should include counselling about contraception. In every circumstance, the woman must understand the nature of the proposed procedure, including pain relief, possible immediate effects, and future side effects, as well as potential complications. It is essential to obtain the informed consent from the woman and maintain confidentiality. Counselling for adolescents requires special skills, care, and attention.
2. All women have the right to access quality care from health care providers who are qualified to perform PAC procedures, as well as to identify and manage their complications.
3. A diagnosis of abortion complications must be considered in any woman of reproductive age who has missed her period and has one or more of the following: bleeding, cramping, partial expulsion of POC, dilated cervix, or smaller uterus than expected.
4. The possibility of complications due to unsafe abortion must be assessed:
 - Injury to internal organs from pressure applied to the abdomen
 - Permanent damage to organs of reproduction and the vagina which hinders further sexual relations
 - Permanent damage to bladder or bowel which causes chronic problems with elimination
 - Permanent infertility
 - Death from complications including infection and hemorrhage
5. Differential diagnosis must be considered. The most common differential diagnosis for ectopic pregnancy is threatened abortion. Others are acute or chronic pelvic inflammatory disease, ovarian cysts, and acute appendicitis.
6. Health care providers have to facilitate appropriate measures for managing unsafe abortion. These include providing treatment for or referring women who present with signs of inevitable, incomplete, and septic abortions. Women with incomplete abortion, either spontaneous or induced, can be treated safely and effectively with procedures, such as manual vacuum aspiration (MVA) (WHO, 2003).
7. In all cases, health care providers must:
 - Rapidly evaluate the general condition of the women including vital signs—pulse, blood pressure, respiration, and temperature. Keep shock in mind when evaluating the woman further because her status may worsen rapidly.

- If unsafe abortion is suspected, examine for signs of infection or uterine, vaginal, or bowel injury. Thoroughly irrigate the vagina, without pressure, to remove any herbs, local medications, or caustic substances.
- Ask for help as required, proceed to MVA, and/or refer woman without delay.
- Ensure the confidentiality of the entire procedure, especially in countries where abortion is illegal. All interventions performed should remain confidential at all times. Do NOT chart the information that could potentially be used against the woman.

Management of spontaneous abortion

The following information has been adapted from *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth*, World Health Organization, 2000: pp S-7 to S-17.

Threatened abortion

1. Medical treatment is usually not necessary.
2. The woman is advised to avoid strenuous activity and sexual intercourse, but bed rest is not necessary.
3. If bleeding stops: Follow-up in antenatal clinic. Reassess if bleeding recurs.
4. If bleeding persists: Assess for fetal viability (pregnancy test or ultrasound) or ectopic pregnancy (ultrasound). Persistent bleeding, particularly in the presence of a uterus larger than expected, may indicate twins or molar pregnancy.
5. Do not give hormones because they will not prevent miscarriage.

Inevitable abortion

1. If pregnancy is less than 16 weeks: Plan for MVA of uterine contents.
2. If evacuation is not immediately possible: Give ergometrine 0.2% mg IM (repeated after 15 minutes if necessary) OR misoprostol 400 µg by mouth (repeated once after 4 hours if necessary).
3. Arrange for evacuation of uterus as soon as possible.
4. If pregnancy is greater than 16 weeks:
 - Await spontaneous expulsion of POC and then evacuate the uterus to remove any remaining POC.
 - If necessary, infuse oxytocin 40 units in 1L IV fluids (normal saline or Ringer's lactate at 40 drops per minute) to help achieve expulsion of POC.
 - Ensure follow-up of the woman after treatment.

Incomplete abortion

1. If bleeding is slight to moderate and pregnancy is less than 16 weeks: Use fingers or ring (or sponge) forceps to remove POC protruding through the cervix.
2. If bleeding is heavy and pregnancy is less than 16 weeks: Evacuate the uterus: MVA is the preferred method of evacuation. Evacuation by sharp curettage should only be done if MVA is not available.
3. If evacuation is not immediately possible: Give ergometrine 0.2 mg IM (repeated after 15 minutes if necessary) or misoprostol 400 µg orally (repeated once after 4 hours if necessary).
4. If pregnancy is greater than 16 weeks: Infuse oxytocin 40 units in 1 L IV fluids (normal saline or Ringer's lactate) at 40 drops per minute until expulsion of POC occurs.
5. If necessary, give misoprostol 200 µg vaginally every 4 hours until expulsion, but do not administer more than 800 µg.
6. Evacuate any remaining POC from the uterus.
7. Ensure follow-up of the woman after the treatment.

Complete abortion

1. Evacuation of the uterus is NOT necessary.
2. Observe for heavy bleeding.
3. Ensure follow-up of the woman after the treatment.

Management of Induced Abortion Performed in Unsafe Environment

Any woman, who has experienced an incomplete abortion, particularly if it is the result of an unsafe abortion, may also suffer from one or more serious conditions: shock, severe vaginal bleeding, infections or sepsis, or intra-abdominal injury including uterine perforation.

Emergency treatment for post-abortal complications includes:

1. An initial assessment to confirm the presence of abortion complications.
2. Supporting the woman while assessing her condition and explaining the treatment plan.
3. Medical evaluation (brief history, limited physical and pelvic examinations, history of excessive bleeding, easy bruising or known blood disorder that could be due to coagulopathy, and risk for excessive bleeding).
4. Prompt referral and transfer if the woman requires treatment beyond the capacity of the facility where she is seen.
5. Stabilization of emergency conditions and treatment of any complications—complications present before treatment and those occurring during or after the treatment procedure.
6. Assessment of the signs and symptoms of septic abortion, such as fever $>38.5^{\circ}\text{C}$ 48 hours following abortion, chills or sweats, foul-smelling vaginal discharge, lower abdominal tenderness and/or pain, mucous from the cervix, prolonged bleeding (for more than 8 hours), general discomfort, flu-like symptoms, hemodynamic and acid-based equilibrium changes. As the condition worsens, the patient is less alert with tachycardia, hypotension, peripheries pale and clammy, nausea, vomiting, and diarrhea. If a septic abortion with hypotension out of proportion of the blood loss, septic shock should be suspected. See Chapter 7, Infections (under Management of Septic Shock).
7. Uterine evacuation to remove retained POC.

Post-abortal follow-up

Women who have had a spontaneous abortion:

- Must be supported psychologically.
- Should be informed that spontaneous abortion is common and occurs in at least 15% (1 in every 7) of clinically recognized pregnancies.
- Must be reassured that their chances for a subsequent successful pregnancy are good unless there has been sepsis or a cause of abortion that has been identified as having an adverse effect on future pregnancies (this is rare).
- Should be encouraged to delay the next pregnancy until they are completely recovered.

Women who have had an unsafe abortion:

- Must be counselled on family planning methods that can be started immediately (within 7 days). See Appendix 1, Family Planning Services as an Essential Part of Post-Abortal Care.
- Must be referred to any other reproductive health services that may be needed: RhoGAM, tetanus prophylaxis or tetanus booster, treatment for sexually transmitted infections, cervical cancer screening, etc.
- Must be invited to express their feelings and fears related to the circumstances of the unwanted pregnancy, such as rape, failed contraception, lack of access to contraception, etc.

Surgical and Medical Methods for the Management of Spontaneous and Unsafe Abortion, and Approved International Guidelines

The purpose of this section is to provide internationally recognized clinical guidelines of surgical and medical methods for the management of post-abortal complications.

Summary of medical and surgical methods

Evidence has shown that in situations where post-abortal procedures are required, there are two recommended methods: medical and surgical. The preferred method varies according to the number of weeks of pregnancy.

Medical methods, also known as non-surgical methods, make use of pharmacological drugs to treat conditions of post abortion.

Surgical methods make use of transcervical procedures, such MVA, dilatation and curettage (D&C), and dilatation and evacuation (D&E).

Medical and surgical methods are safe, and can save the life of the woman if used properly and effectively. In countries where abortion services are legal, they are recognized as the safest approach to medical and surgical abortion care. The Society of Obstetricians and Gynaecologists of Canada, the American College of Obstetricians and Gynecologists, the Royal College of Obstetricians and Gynaecologists (UK), and WHO have all adopted guidelines for abortion care.

Complete Weeks Since Last Menstrual Period	Preferred Medical Methods	Surgical Methods and Others
Up to 9 weeks since last menstrual period (LMP)	a) Mifepristone and prostaglandin: Proven to be highly effective, safe, and acceptable for early first trimester abortions. Efficacy rates are up to 98%. b) Misoprostol or gemeprost alone is effective.	a) Vacuum aspiration: Manual or electric b) Dilatation and curettage
From 9 to 12 weeks since LMP	a) Mifepristone and prostaglandin: Under investigation (Initial positive findings need to be confirmed in order to establish the optimal regimens.)	a) Vacuum aspiration b) Dilatation and curettage
After 12 to 16 completed weeks since LMP	a) Mifepristone and prostaglandin: A regimen of mifepristone followed by repeated doses of misoprostol or gemeprost is safe and highly effective. <ul style="list-style-type: none"> • Laminaria tents in cervix • Dilatation and curettage or dilatation and evacuation • Vacuum aspiration (electric) • IV high-dose oxytocin 	The alternative routes of administration such as intra-amniotic injection of hypertonic saline or extra-amniotic of prostaglandin are much more invasive and less safe than the newer medical methods. Methotrexate is no longer recommended for inducing abortion, based on concern about teratogenicity.
From 16 to 20 to 22 weeks since LMP	<ul style="list-style-type: none"> • Misoprostol according to protocol • D&C for retained placenta • IV high-dose oxytocin according to protocol 	

Medical methods of treating spontaneous and unsafe abortion

For the medical method of termination of pregnancy up to 12 weeks since the LMP, see Appendix 2, Misoprostol for Treatment of Incomplete Abortion and Miscarriage.

The use of a medical method requires the back up of vacuum aspiration (surgical method) on site. If not, a referral may need to be made to a higher-level care facility in the case of a failed or an incomplete abortion. See Appendix 3, Procedure for Manual Vacuum Aspiration.

Surgical methods of post abortion to evacuate the uterus

Surgical methods of post abortion include:

- MVA
- Dilatation and curettage
- Dilatation and evacuation

After any surgical method, immediate examination of POC is important to exclude the possibility of ectopic pregnancy, verify any appearance suggestive of molar pregnancy, and to consider incomplete abortion.

Manual vacuum aspiration: Vacuum aspiration is the most preferred, appropriate, and cost-effective procedure in low-resource settings. It is the preferred surgical technique up to 16 weeks. Its high efficacy has been well established in several randomized controlled trials. Vacuum aspiration has replaced D&C in routine use in most industrialized countries and in many other countries. See Appendix 3, Procedure for Manual Vacuum Aspiration, for procedure details.

With MVA, the vacuum is created using a hand-held, hand-activated, plastic 60 ml syringe. It takes from 3 to 10 minutes to complete, and can be performed on an outpatient basis, using analgesics and/or local anaesthesia. Though rare, complications with vacuum aspiration can include pelvic infection, excessive bleeding, cervical injury, incomplete evacuation, uterine perforation, anesthesia complications, and ongoing pregnancy. Abdominal cramping or pain and menstrual-like bleeding are normal side effects with any abortion procedure.

Precautions for performing manual vacuum aspiration

In the course of the initial assessment, conditions may be discovered that indicate delaying the MVA procedure and initiating other treatment(s) before beginning the MVA, or the need to use a different technique for removing POC. See Appendix 4, Precautions for Performing Manual Vacuum Aspiration, for each of these conditions.

Dilatation and curettage: Also known as sharp curettage, D&C involves dilating the cervix with mechanical dilators or pharmacological agents and using sharp metal curettes to scrape the walls of the uterus. It is less safe than vacuum aspiration and considerably more painful for women.

Dilatation and evacuation: D&E is used from about 12 completed weeks of pregnancy. It is the safest and most effective surgical technique for later abortion where skilled, experienced providers are available. D&E requires preparing the cervix with a prostaglandin, dilating the cervix, and evacuating the uterus using electric vacuum aspiration with 14 mm to 16 mm diameter cannulae and forceps.

Society of Obstetricians and Gynaecologists of Canada: Guidelines on Induced Abortion and Medical Termination of Early Pregnancy

In June 1999, the United Nations Assembly agreed that “in circumstances where abortion is not against the law, health systems should train and equip health service providers and should take other measures to ensure that such abortion is safe and accessible. Additional measures should [also] be taken to safeguard women’s health” (ICPD Plus Five, 1999: Para 63.iii). In support of this international consensus and in the spirit of sharing resources in an effort to improve women’s health outcomes, Society of Obstetricians and Gynaecologists of Canada has included its clinical guidelines related to induced abortion and medical termination of early pregnancy in Appendices 5 and 6.

It is hoped that these guidelines will be used in countries where abortion is legal to improve the quality of services. In other countries, these resources can be used as reference documents for discussions about ways to deal with maternal deaths due to unsafe abortions.



Key Messages

1. Unsafe abortion is one of the five leading causes of maternal death worldwide that is completely preventable.
2. Early diagnosis and treatment of post-abort complications can save the lives of women
3. The availability of safe PAC services requires non-judgmental health care providers.
4. The barriers that women encounter when trying to access PAC are a breach of their sexual and reproductive rights.

Suggestion for Applying the Sexual and Reproductive Rights Approach to this Chapter

Abortion is illegal in many countries. Ensuring confidentiality when treating complications due to unsafe abortion is essential. The information about a woman's PAC, as well as the written documentation regarding the treatment, is privileged, confidential information. It is important that such information NOT be discussed with anyone other than the health care providers involved in the provision of care. Even where abortion is not illegal, confidentiality must be maintained. Women deserve absolute confidentiality regarding any and all health care procedures, and the information they receive from individual health care providers and the facilities they work within.

When you are providing PAC care, do not let your personal views interfere with the care you give. Women need to know that they will not be denied care or penalized for seeking care after an unsafe abortion.

Resources

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APPENDIX 1

FAMILY PLANNING SERVICES AS AN ESSENTIAL COMPONENT OF PAC

Adapted from: The “Contraceptive Services” chapter in Jeanine Herrick et al., *Woman-Centered Post-Abortion Care: Reference Manual, 2004*.

Introduction

Access to family planning services is a basic human right, and is fundamental to reproductive and sexual health. Beyond clinical treatment, women should receive family planning counselling and contraceptive methods as part of PAC services, with the aim of breaking the cycle of repeated, unwanted pregnancies and unsafe abortions. Although the reasons for an unwanted pregnancy differ among women, they often report feeling that prevention of pregnancy is beyond their control. For example, contraceptive supplies are often unavailable locally. The common factor among women receiving PAC is that they are at a critical juncture in their reproductive lives.

The goal of post-abortal contraceptive counselling is to help a woman understand the factors that led to the abortion, so that she can avoid the same situation in the future. Through counselling, she may be better able to evaluate individual factors, and therefore choose a more effective and sustainable method of contraception for herself. Overall, greater access to information through counselling will help her to make informed decisions more freely about her own sexual and reproductive health and her own body.

Why Contraception?

Contraception, including post-abortal contraception, is critical to women’s health and well-being for several reasons and Ipas cites the following:

Contraceptive use can:

- Reduce maternal mortality and morbidity by helping women avoid future unwanted pregnancies and the possibility of an unsafe abortion that can end in injury or death
- Promote women’s health by increasing the spacing between pregnancies
- Improve infant health and save infant lives by allowing mothers a safe means to achieve spacing between births
- Give women the freedom to improve their quality of life, pursue an education or establish a career

Two Core Components in Family Planning Services

1. Rights to confidentiality, privacy and informed choice

Privacy and confidentiality are essential, especially in the post-abortal setting. Arrangements should be made to counsel the woman in a private area out of the sight and sound of others. At the beginning of a family planning counselling session, the health care provider should assure the woman that the information they will be discussing is confidential. After the session, the health care provider should follow professional protocols that protect the confidentiality of the woman’s information. This includes not releasing the woman’s information without her consent, and not discussing the woman’s situation in the presence of others.

Women have the right to make a free and informed choice about the contraceptive method they will use. Acceptance of contraception or of a specific method should never be a prerequisite for obtaining PAC treatment.

Free and informed choice means that a woman chooses a method voluntarily, without coercion or pressure. It requires that she has a variety of methods to choose from and a clear understanding of the benefits and risks of each one. Women who are offered multiple methods and are allowed to freely choose from among them are more likely to accept and continuously use contraceptives.

Female sterilization requires voluntary informed consent and proper counselling because it is a permanent method. If a woman has chosen female sterilization as her preferred method and has received counselling about this decision prior to her PAC service visit, then this method may be considered. *In a PAC emergency situation, or in other situations where fully informed consent cannot be obtained, this method should not be provided concurrently with the uterine evacuation procedure.*

2. Medical eligibility for post-abortion contraceptive use

When providing contraception to a woman in a PAC setting, health care providers need to consider her medical eligibility for each method. In general, all modern contraceptive methods can be used immediately following PAC, provided:

- **There are no severe complications requiring further treatment**
- **The client receives adequate counselling**
- **The provider screens** for any precautions for using a particular contraceptive method

In addition, it is recommended that women not have sexual intercourse until post-abortion bleeding stops (usually 5 to 7 days) and any complications are resolved. Natural family planning methods are not recommended until a regular menstrual pattern returns. Some situations require a delay in the use of certain methods. During the counselling session, health care providers should inform women as to which contraceptive method is appropriate for them, based on their medical condition. The *Ipas Woman-Centered Post-abortion Care: Reference Manual* lists all available methods. In summary, the most appropriate contraceptive methods for various clinical conditions may include:

- **Barriers methods**, such as male condoms, spermicides, diaphragms, cervical caps
- **Hormonal methods**, such as oral contraceptives, injectables, implants, skin patches, vaginal ring
- **Intrauterine methods**, such as the intrauterine device (IUD)
- **Fertility awareness-based methods**, such as basal body temperature and calendar methods

For every woman, post-abortion services require individualized care that considers her special needs and the unique situation she has to face.

- Woman does not want to be pregnant?
 - Was there a contraceptive failure in the past?
 - Is she ashamed using the method?
 - Has she not used any method in the past?
 - Due to her own decision
 - Due to partner unwillingness
- Woman does want to become pregnant?

Refer to Table A1.1 when providing counseling about contraceptive methods.

Table A1.1 - Contraceptive services: Individual factors and counselling recommendations and rationales (more than one may apply)

If the woman	Recommendations	Rationales
Does not want to be pregnant soon	<ul style="list-style-type: none"> Consider all temporary methods. 	<ul style="list-style-type: none"> Seeking PAC treatment sometimes suggests that the woman does not want to be pregnant.
Is under stress or in pain	<ul style="list-style-type: none"> Consider all temporary methods. Do not encourage use of permanent methods at this time. Provide referral for continued contraceptive care. 	<ul style="list-style-type: none"> Stress and pain interfere with making free, informed decisions. The time of PAC treatment is not a good time for a woman to make a permanent decision.
Was using a contraceptive method when she became pregnant	<ul style="list-style-type: none"> Assess why contraception failed and what problems the woman might have had using a method effectively. Help the woman choose a method that she will be able to use effectively. Make sure she understands how to use the method, get follow-up care and re-supply, discontinue use, and change methods. 	<ul style="list-style-type: none"> Method failure, unacceptability, ineffective use or lack of access to supplies may have led to unwanted pregnancy. These factors may still be present and may lead to another unwanted pregnancy.
Has stopped using a method	<ul style="list-style-type: none"> Assess why the woman stopped using contraception (for example, side effects or lack of access to re-supply). Help the woman choose a method that she will be able to use effectively. Make sure she understands how to use the method, get follow-up care and re-supply, discontinue use, and change methods. 	<ul style="list-style-type: none"> Unacceptability or lack of access may have led to unwanted pregnancy. Those factors may still be present and may lead to another unwanted pregnancy.
Has a partner who is unwilling to use condoms or will prevent use of another method	<ul style="list-style-type: none"> If the woman wishes, include her partner in the counselling. Protect the woman's confidentiality (even if she does not involve her partner). Discuss methods that the woman can use without her partner's knowledge, such as injectables. Do not recommend methods that the woman will not be able to use effectively. 	<ul style="list-style-type: none"> In some instances, involving the partner in counselling will lead to their use of and support for contraception; however, if the woman, for whatever reasons, does not want to involve a partner, her wishes should be respected.
Wants to become pregnant soon	<ul style="list-style-type: none"> Do not try and persuade her to accept a method. Provide information or referral if the woman needs other reproductive health services. 	<ul style="list-style-type: none"> If the woman has had repeated spontaneous abortions, she may need to be referred for infertility treatment.

Adapted from: Leonard and Ladipo, 1994 as cited in Herrick, Jeannine et al., *Woman-Centered Post-abortion Care: Reference Manual* (Chapel Hill, NC; IPAS) 2004, 90.

Post-Abortal Contraception

A woman's fertility generally returns within 2 weeks after an incomplete abortion in the first trimester. Unfortunately, many women are not aware of this, because it differs from the postpartum period where the return of fertility is delayed. Because of the subsequent risk of repeat pregnancy, use of post-abortion family planning should be initiated as soon as possible.

Appropriate contraceptive methods for various clinical conditions

Uncomplicated PAC when uterine size is equivalent to 12 weeks or less

All modern contraceptive methods can be used immediately.

Uncomplicated PAC when uterine size is greater than 12 weeks

Most modern contraceptive methods can be used immediately. Intrauterine devices can be inserted at the time of the abortion, but some concern exists about the risk of expulsion. Also, an enlarged uterus may require a provider skilled in high fundal IUD placement. There is a lack of data on post-abortion intrauterine system (IUS) use, but it is similar to that of the IUD.

PAC with complications: infection

It is important to keep in mind that even when a reproductive-tract infection is not apparent at the time of treatment, one may subsequently develop. In cases where an infection is evident or presumed, the provider should advise the woman to avoid intercourse until the infection is resolved or ruled out. When abstinence is not realistic, women should avoid using certain methods. Female sterilization is not appropriate until infection is either ruled out or resolved, because the presence of infection may substantially increase the risk of post-surgical infection. Intrauterine devices and IUS are not appropriate until the infection is resolved, because insertion may substantially worsen the condition. In these cases, the woman should be given a method such as condoms to prevent the spread of the infection to her partner and, if desired, she should be given an additional, more effective method to prevent pregnancy.

PAC with complications: genital trauma

Genital trauma resulting from female genital cutting or unsafe abortion procedures can include burns, perforations, and cervical tears or lacerations. These injuries may require a delay in the use of certain contraceptive methods, depending on the location and severity of the trauma. Methods whose use may be temporarily restricted include female sterilization, IUDs, IUS, and barrier methods other than the male condom. In these cases, the provider must make a clinical judgment about which methods to recommend for the short-term. In the case of permanent anatomic distortions, the provider must decide whether the condition contraindicates any particular methods.

PAC with complications: excessive blood loss

Excessive blood loss may require a delay in the use of female sterilization and IUDs, depending on the severity of the loss. For sterilization, delay is recommended if laboratory tests or clinical signs indicate anemia.

Guidelines based on clinical condition follow in Table A1.2.

Table A1.2 - Guidelines for contraceptive use by clinical condition

Clinical Condition	Precautions	Recommendations
<p>No complications after treatment of incomplete abortion</p>	<p>Natural family planning: Do not recommend until a regular menstrual pattern returns.</p> <p>Female voluntary sterilization: The time of treatment for incomplete abortion usually is not the best time for clients to make decisions about methods that are permanent</p>	<p>Consider all temporary methods.</p> <p>Norplant implants: Can begin use immediately.</p> <p>Injectables (DMPA, NET-EN): Can begin use immediately.</p> <p>IUD: Can begin use immediately.</p> <p>Oral contraceptives (combined or progestin only): Can begin use immediately.</p> <p>Condoms (male or female): Can be used when sexual activity is resumed.</p> <p>Spermicidal foams, jellies, tablets, sponge, or film: Can be used when sexual activity is resumed.</p> <p>Diaphragm or cervical cap: Can be used when sexual activity is resumed.</p>
<p>Confirmed or presumptive diagnosis of infection</p> <p>Signs and symptoms of sepsis or infection</p> <p>Signs of unsafe or unclean induced abortion</p> <p>Unable to rule out infection</p>	<p>Female voluntary sterilization: Do not perform procedure until risk of infection is ruled out or infection is fully resolved (approximately 3 months).</p> <p>IUD: Do not insert until risk of infection ruled out or infection fully resolved (approximately 3 months).</p>	<p>Norplant implants: Can begin use immediately.</p> <p>Injectables (DMPA, NET-EN): Can begin use immediately.</p> <p>Oral contraceptives (combined or progestin only): Can begin use immediately.</p> <p>Condoms: (male or female): Can be used when sexual activity is resumed.</p> <p>Spermicidal foams, jellies, tablets, sponge, or film: Can be used when sexual activity is resumed.</p> <p>Diaphragm or cervical cap: Can be used when sexual activity is resumed.</p>
<p>Injury to genital tract</p> <p>Uterine perforation (with or without bowel injury)</p> <p>Serious vaginal or cervical injury, including chemical burns</p>	<p>Female voluntary sterilization: Do not perform procedure until serious injury healed.</p> <p>IUD: Do not insert until serious injury healed.</p> <p>Spermicidal foams, jellies, tablets, sponge, or film: Do not begin use until vaginal or cervical injury healed.</p> <p>Diaphragm or cervical cap: Do not begin use until vaginal or cervical injury healed.</p>	<p>Norplant implants: Can begin use immediately.</p> <p>Injectables (DMPA, NET-EN): Can begin use immediately.</p> <p>Oral contraceptives (combined or progestin only): Can begin use immediately.</p> <p>Condoms: (male or female): Can be used when sexual activity is resumed.</p> <p>Spermicidal foams, jellies, tablets, sponge or film: can be used when sexual activity is resumed.</p> <p>Diaphragm or cervical cap: can be used when sexual activity is resumed (can be used with uncomplicated uterine perforation).</p>

Clinical Condition	Precautions	Recommendations
<p>Severe bleeding (hemorrhage) and related severe anemia (Hb <7 gm/dl or Hct >20)</p>	<p>Female voluntary sterilization: Do not perform procedure until the cause of hemorrhage or anemia resolved.</p> <p>Progestin-only pills: Use with caution until acute anemia improves.</p> <p>Norplant implants: Use with caution until acute anemia improves.</p> <p>Injectables (DMPA, NET-EN): Delay starting until acute anemia improves.</p> <p>IUD: (inert or copper-bearing): Delay insertion until acute anemia improves.</p>	<p>IUD (progestin-releasing): Can be used with severe anemia (decreases menstrual blood loss).</p> <p>Combined oral contraceptives (COCs): Can begin use immediately (beneficial when hemoglobin is low)*</p> <p>Condoms (male or female): Can be used when sexual activity is resumed.</p> <p>Spermicidal foams, jellies, tablets, sponge, or film: Can be used when sexual activity is resumed.</p> <p>Diaphragm or cervical cap: Can be used when sexual activity is resumed.</p> <p>* “Some experts recommend starting COCs exactly 1 week post abortion, as there is a suggestion of a slight increase in coagulation factors measurable in the first few days after first trimester abortion, in women starting COCs immediately. If started later than 1 week, COCs may not be immediately effective because the ovary resumes follicular development as soon as 1 week after first trimester abortion.”¹</p>
<p>Second trimester incomplete abortion</p>	<p>Female voluntary sterilization: Advisable to delay procedure until uterus returns to pre-pregnancy size (4 to 6 weeks). If this is not possible, use minilap technique.</p> <p>IUD: Size of uterus requires skilled, experienced provider for high fundal placement. If this is not possible, delay insertion for 4 to 6 weeks.</p> <p>Diaphragm or cervical cap: Should be refit when uterus returns to pre-pregnancy size (4 to 6 weeks).</p>	<p>Norplant implants: Can begin use immediately.</p> <p>Injectables (DMPA, NET-EN): Can begin use immediately.</p> <p>Oral contraceptives: (combined or progestin only): Can begin use immediately.</p> <p>Condoms: (male/female): Can be used when sexual activity is resumed.</p> <p>Spermicidal foams, jellies, tablets, sponge, or film: Can be used when sexual activity is resumed.</p>

Source: Blumenthal and McIntosh, 1995; Leonard and Ladipo, 1994 as cited in *Post-abortion Care: A Reference Manual for Improving Quality of Care*, ed. By Judith Winkler et al. (Chapel Hill, NC: The Post-abortion Care Consortium) 2000, 9-13.

Any woman who has been treated for post-abort complications may have medical conditions that could affect the selection of a contraceptive method. Because contraceptive safety is so important, the division of Reproductive Health and Research, WHO, developed *The Medical Eligibility Criteria for Contraceptive Use* (Third edition 2004) to help health care providers to offer the safest options for every woman. To help health care providers understand the process, based on the medical eligibility criteria, a descriptive case is presented below. Please refer to this publication while you do this exercise.

Case Description

A young woman of 17 years old consults for PAC services following a pregnancy of 14 weeks. She has a *Chlamydia* infection; she is obese, and has a family history of deep venous thrombosis (DVT) and pulmonary embolism (PE)

As health care providers, how do you manage this situation?

1. Oral contraceptives	<ul style="list-style-type: none"> • STIs: <i>Chlamydia</i> • Smoking • Obesity • Family history of DVT and PE
2. Condom: Barrier methods	<ul style="list-style-type: none"> • Menarche • Second trimester • Smoking • Family history of DVT and PE • STIs: <i>Chlamydia</i> • Not married: High risk of HIV/AIDS
3. IUD	<ul style="list-style-type: none"> • Menarche • Parity (nulliparous) • Second trimester • Smoking • Obesity • Family history of DVT and PE • STIs: <i>Chlamydia</i>

Expanding the number of method choices offered can lead to improved satisfaction, increased acceptance, and increased prevalence of contraceptive use. Proper education and counselling both before and at the time of method selection can help adolescents address their specific problems, and make informed choices and voluntary decisions.

Resources

- Herrick, Jeannine et al., *Woman-Centered Post-abortion Care: Reference Manual* Chapel Hill, NC: IPAS, 2004.
- Technical Guidance Working Group: *Recommendations for Updating Selected Practices in Contraceptive Use: Results of a Technical Meeting*. Vol. 1. Chapel Hill, NC: Program for International Training in Health, 1994.
- Reproductive Health and Research, *The Medical Eligibility Criteria for Contraceptive Use*. Geneva, World Health Organization, Third edition 2004.

APPENDIX 2

MISOPROSTOL FOR TREATMENT OF INCOMPLETE ABORTION AND MISCARRIAGE

BACKGROUND

Misoprostol is a prostaglandin E1 analog generally registered for prevention and treatment of gastric ulcers resulting from chronic administration of nonsteroidal anti-inflammatory drugs. Because misoprostol also induces uterine contractions, it is commonly used off-label for treatment of early pregnancy failures, including incomplete and missed abortions. Studies have demonstrated that misoprostol can be used effectively and safely for these indications. This information is presented for the guidance of trained health care providers.

INDICATION AND USAGE

Misoprostol is indicated for treatment of incomplete abortion and miscarriage for women with **uterine size less than or equal to 12 weeks LMP** at presentation.

Use of misoprostol for incomplete abortion has a success rate of 66%–100% using the recommended dose. Use of misoprostol for missed abortion has a success rate of 60%–93% using the recommended dose.

CONTRAINDICATIONS

1. History of allergy to misoprostol or other prostaglandin
2. Suspicion of ectopic pregnancy
3. Signs of pelvic infection and/or sepsis
4. Symptoms of hemodynamic instability or shock

PRECAUTIONS

1. Women eligible for misoprostol, but with an IUD in place, should have the IUD removed before drug administration.
2. Caution is advised when treating women with known bleeding disorders or currently taking anticoagulants.
3. Misoprostol may be used with caution in patients with uterine size larger than 12 weeks LMP but with a known gestational age less than or equal to 12 weeks (e.g. uterine enlargement due to fibroids).
4. Small amounts of misoprostol or its active metabolite may appear in breast milk. There are no known consequences of this and no adverse effects on nursing infants have been reported.

EFFECTS AND SIDE EFFECTS

Prolonged or serious effects and side effects are rare.

Bleeding

After administration of misoprostol, bleeding typically lasts up to 2 weeks, with additional days of spotting that can last until the next menstrual period.

The woman should be instructed to contact a health care provider if any of the following occur: (1) if she soaks more than two extra large sanitary pads an hour for more than 2 consecutive hours, (2) if she suddenly experiences a heavy onset of bleeding after bleeding has slowed or stopped for several days after taking misoprostol, (3) if she has bled continuously for several weeks and begins to feel dizzy or light-headed.

Cramping

Cramping usually starts within the first few hours and may begin as early as 30 minutes after misoprostol administration. The pain may be stronger than that experienced during a regular period. Nonsteroidal anti-inflammatory drugs or other analgesia can be used for pain relief without affecting the success of the method.

Fever and/or Chills

Chills are a common side effect of misoprostol but are transient. Fever is less common and does not necessarily indicate infection. An antipyretic can be used for relief of fever, if needed. If fever or chills persist beyond 24 hours after taking misoprostol, the woman may have an infection and should seek medical attention.

Nausea and Vomiting

Nausea and vomiting may occur and will resolve 2 to 6 hours after taking misoprostol. An antiemetic can be used if needed.

Diarrhea

Diarrhea may also occur following administration of misoprostol but should resolve within a day.

DOSAGE AND ADMINISTRATION**Incomplete abortion**

The recommended regimen for treatment of incomplete abortion with misoprostol is a single dose of **600 µg misoprostol orally**.

Missed abortion

In the instance where diagnosis of missed abortion is certain and/or the cervix is firmly closed, the recommended regimen is a single dose of **800 µg misoprostol vaginally**.

Highest success rates are achieved with extended follow-up (7 to 14 days) to allow completion of the process of expulsion. Surgical intervention is not recommended prior to 7 days after treatment administration unless medically necessary.

Notes

- There is also evidence that a repeated dose may increase efficacy.
- Misoprostol probably also works well when placed between the cheek and gum (buccally) or under the tongue (sublingually).

Resources

- Consensus Statement: Instructions for Use – Misoprostol for Treatment of Incomplete Abortion and Miscarriage. Expert Meeting on Misoprostol sponsored by Reproductive Health Technologies Project and Gynuity Health Projects. June 9, 2004. New York, NY.
For a reference list of literature supporting this document or for more information, refer to www.gynuity.org or www.rhtp.org.
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APPENDIX 3

PROCEDURE FOR MANUAL VACUUM ASPIRATION

Adapted from: *Integrated Management of Pregnancy and Childbirth: Managing Complications in Pregnancy and Childbirth*, World Health Organization, 2000.

1. Review indications:
 - Inevitable abortion before 16 weeks
 - Incomplete abortion
 - Molar pregnancy or
 - Delayed post partum hemorrhage due to retained placental fragments
2. Provide emotional support and encouragement to the woman.
3. Offer pain relief:
 - Give paracetamol 30 minutes before the procedure.
 - OR
 - Perform a paracervical block.
4. Prepare the MVA syringe:
 - Assemble the syringe.
 - Close the pinch valve.
 - Pull back on the plunger until the plunger arms lock.

Note: For molar pregnancy, when the uterine contents are likely to be copious, have three syringes ready for use.

In very early pregnancy, the canulae may be inserted without prior dilatation of the cervix. Menstrual regulation refers to this type of procedure usually up to 8 weeks.
5. Give oxytocin 10 units IM or ergometrine 0.2 mg IM before the procedure to make the myometrium firmer and reduce the risk of perforation.
6. Perform a bimanual pelvic examination to re-assess the size and position of the uterus and the conditions of the fornices.
7. Insert sterile speculum and visualize the cervix.
8. Apply antiseptic solution to the vagina and cervix, especially around the os.
9. Check the cervix for tears or protruding POC. If POC are present in the vagina or cervix, remove these using ring (or sponge) forceps.
10. Gently grasp the anterior lip of the cervix with a ring forceps or single-toothed tenaculum.

Note: With incomplete abortion, a ring or sponge forceps is preferable because it is less likely than the tenaculum to tear the cervix with traction, and it does not require the use of lignocaine for placement. If using a tenaculum to grasp the cervix, first inject 1 mL of 0.5% lignocaine solution into the anterior or posterior lip of the cervix, which has been exposed by the speculum (the 10 o'clock or 12 o'clock position is usually used).
11. Dilatation is needed only in cases of missed abortion or when POC have remained in the uterus for several days. Dilatation using mechanical or osmotic dilators, alone or in combination, or cervical priming with mifepristone or a prostaglandin is required before insertion of the cannula:
 - Gently introduce the widest gauge suction cannula.
 - Use graduated dilators only if the cannula will not pass. Begin with the smallest dilator and end with the largest dilator that ensures adequate dilatation (usually 10–12 mm). See Figure A3.1.
 - Take care not to tear the cervix or to create a false opening.

12. While gently applying traction to the cervix, insert the cannula through the cervix into the uterine cavity just past the internal os. See Figure A3.1. (Rotating the cannula while gently applying pressure often helps the tip of the cannula pass through the cervical canal.)

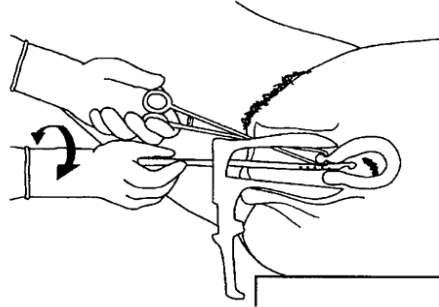


Figure A3.1 - Inserting the cannula

13. Slowly push the cannula into the uterine cavity until it touches the fundus, but not more than 10 cm. Measure the depth of the uterus by dots visible on the cannula and then withdraw the cannula slightly.
14. Attach the prepared MVA syringe to the cannula by holding the ring forceps or tenaculum and the end of the cannula in one hand and the syringe in the other.
15. Release the pinch valve(s) on the syringe to transfer the vacuum through the cannula to the uterine cavity.
16. Evacuate remaining contents by gently rotating the syringe from side to side (10 to 12 o'clock) and then moving the cannula gently and slowly back and forth within the uterine cavity. See Figure A3.2.

Note: To avoid losing the vacuum, do not withdraw the cannula opening past the cervical os. If the vacuum is lost or if the syringe is more than half full, empty it and then re-establish the vacuum. Avoid grasping the syringe by the plunger arms while the vacuum is established and the cannula is in the uterus. If the plunger arms become unlocked, the plunger may accidentally slip back into the syringe and push material back into the uterus.

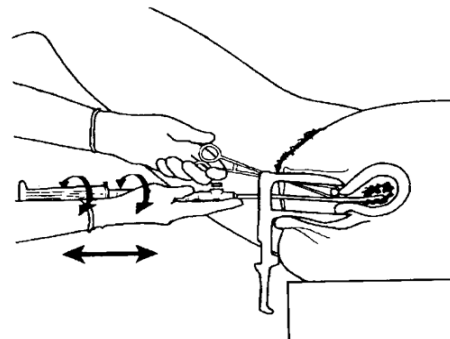


Figure A3.2 - Evacuating the contents of the uterus

17. Check for signs of completion:
 - Red or pink foam but no more tissue is seen in the cannula.
 - A grating sensation is felt as the cannula passes over the surface of the evacuated uterus.
 - The uterus contracts around (grips) the cannula.
18. Withdraw the cannula. Detach the syringe and place the cannula in decontamination solution.
19. With the valve open, empty the contents of the MVA syringe into a strainer by pushing on the plunger.

Note: Place the empty syringe on a high-level disinfected tray or container until you are certain the procedure is completed.

20. Perform a bimanual examination to check the size and firmness of the uterus.
21. Quickly inspect the tissue removed from the uterus:
 - For quantity and presence of POC
 - To assure complete evacuation
 - To check for a molar pregnancy (rare)If necessary, strain and rinse the tissue to remove excess blood clots, then place in a container of clean water, saline, or weak acetic acid (vinegar) to examine. Tissue specimens may also be sent to the pathology laboratory, if indicated.
22. If no POC are seen:
 - All POC may have been passed before the MVA was performed (complete abortion).
 - The uterine cavity may appear to be empty but may not have been emptied completely. Repeat the evacuation.
 - The vaginal bleeding may not have been due to incomplete abortion (e.g. breakthrough bleeding, as may be seen with hormonal contraceptives or uterine fibroids).
 - The uterus may be abnormal (i.e. cannula may have been inserted in the non-pregnant side of the double uterus).

Note: Absence of POC in a woman with symptoms of pregnancy raises the strong possibility of ectopic pregnancy.
23. Gently re-insert a speculum into the vagina and examine the bleeding. If the uterus is still soft and not smaller or if there is persistent risk bleeding, repeat the evacuation.
24. Post-Procedure Care:
 - Give paracetamol 500 mg by mouth as needed.
 - Consider antibiotics.
 - Encourage the woman to eat, drink, and walk about as she wishes.
 - Offer other health services, if possible, including tetanus prophylaxis, anti-D immunoglobulin, counselling or a family planning method.
25. Discharge uncomplicated cases in 1–2 hours.
26. Advise the woman to watch for symptoms and signs requiring immediate attention:
 - Prolonged cramping (more than a few days)
 - Prolonged bleeding (more than 2 weeks)
 - Bleeding more than normal menstrual bleeding
 - Severe or increased pain
 - Fever, chills, or malaise
 - Fainting

APPENDIX 4

PRECAUTIONS FOR PERFORMING MANUAL VACUUM ASPIRATION

Condition	Precaution/Management	Rationale
<p>Shock (due to hemorrhage or sepsis)</p> <ul style="list-style-type: none"> • rapid, weak pulse (>110) • low blood pressure (diastolic <60) • pallor (Hb <7 gm/dl) • sweatiness • rapid breathing (>30) • anxiousness, confusion, unconsciousness 	<p>Stabilize the patient:</p> <ul style="list-style-type: none"> • oxygen • IV fluids • antibiotics (if there are signs of septic shock) • blood transfusion if needed <p>Delay MVA until shock management has begun.</p> <p>Perform MVA immediately after the patient's condition has stabilized.</p>	<p>Shock is a life-threatening condition. It should be managed and the patient stabilized before the MVA is performed.</p>
<p>Severe vaginal bleeding</p> <ul style="list-style-type: none"> • heavy bright red bleeding, with or without clots • blood soaked pad, towels, clothing • pallor (Hb <7 gm/dl) 	<p>Assess all causes of bleeding.</p> <p>Sources of bleeding other than retained POC (e.g. vaginal and/or cervical laceration, genital trauma, intra-abdominal injury, uterine perforation) should be managed first.</p> <p>If tissue can be seen in the cervical os, remove it.</p> <p>Evacuate POC using MVA after patient's condition has been stabilized.</p>	<p>Severe bleeding may also be due to intra-abdominal injury, cervical or vaginal laceration, or uterine perforation, and may be life threatening.</p> <p>Sometimes the simple act of removing tissue will allow the uterus to contract and slow the bleeding.</p>
<p>Intra-abdominal injury (including suspicion of ectopic pregnancy or existing uterine perforation)</p> <ul style="list-style-type: none"> • distended abdomen • decreased bowel sounds • rigid abdomen (tense and hard) • rebound tenderness • nausea, vomiting, pain, fever, abdominal pain, cramping 	<p>Assess and manage potential intra-abdominal injury immediately (IV fluids, antibiotics, and blood transfusion if signs of shock).</p> <p>Perform surgery (laparoscopy or laparotomy as required).</p> <p>Evacuate the POC using MVA after patient's condition has been stabilized.</p>	<p>A rigid abdomen or severe acute abdominal pain indicates the possibility of a serious intra-abdominal injury and the need for immediate surgical assessment.</p>
<p>Septic abortion (local or generalized infection from the abortion)</p> <ul style="list-style-type: none"> • chills or sweats • fever (>38°C) • foul-smelling or purulent (pus-like) vaginal discharge • distended abdomen • rebound tenderness • history of unsafe abortion • abdominal pain • prolonged bleeding • general discomfort, flu-like symptoms 	<p>Give antibiotics (preferably intravenously) and IV fluids.</p> <p>If exposure to tetanus possible and if uncertain about patient's vaccination history, give tetanus toxoid or tetanus antitoxin.</p> <p>Evacuate POC using MVA as soon as antibiotic cover is established.</p>	<p>Infection or sepsis (tetanus and gangrene), septic shock, septicemia, and peritonitis can develop due to retained POC. Such infections can be life threatening and must be treated immediately.</p> <p>Performing MVA without first initiating antibiotic treatment can worsen the infection.</p>

Condition	Precaution/Management	Rationale
Medical History		
History of blood disorder that could lead to coagulopathy (excessive bleeding)	MVA should be performed with extreme caution and where full emergency backup facilities are available, including fresh blood and clotting factor products.	The potential for excessive bleeding during and after MVA requires that full emergency backup facilities must be immediately available.
Severe anemia (Hb <7 gm/dl)	Perform MVA with extreme caution where full emergency backup facilities are available, especially IV fluids and possibly plasma expanders.	The bleeding resulting from MVA potentially could further worsen the anemia, leading to shock.
Physical and Pelvic Examination		
Uterine size larger than LMP history	<p>Review history for possible causes of size discrepancy.</p> <p>Repeat pelvic exam after patient has emptied her bladder.</p> <p>Be sure enlargement is not due to adnexal or rectal mass.</p> <p>Have more experienced provider examine the patient.</p> <p>Proceed with caution and where full emergency backup facilities are available.</p>	May indicate pregnancy is more advanced than LMP history, multiple pregnancies, molar pregnancy (trophoblast disease), uterine cavity filled with blood clots (post-abortal syndrome), or uterine fibroids.
Uterine size uncertain	<p>If there is uncertainty about the uterine size, proceed as if the uterus is larger than the history indicates.</p> <p>Suggestions for getting a better assessment of uterine size:</p> <ul style="list-style-type: none"> • A retroverted uterus may be more accurately assessed by rectovaginal exam. • A more experienced provider may give a more accurate sizing. • Ultrasound, if available, can give an accurate assessment of uterine size. 	The potential for excessive bleeding and the clinical skill required increase with uterine size. It is imperative that the clinician who performs the MVA be as certain as possible about the size of the uterus before beginning the procedure.

APPENDIX 5**Society of Obstetricians and Gynaecologists of Canada*****CLINICAL PRACTICE GUIDELINES*****POLICY STATEMENT**

No. 46, August 1996

INDUCED ABORTION GUIDELINES

This SOGC Policy Statement has been prepared by the Social and Sexual Issues Committee of the Society of Obstetricians and Gynaecologists of Canada and approved by its Council in December 1995.

INTRODUCTION

Induced abortion is a subject that generates a great deal of emotion and controversy in our society. This document is not meant to support either side of the ethical debate. As however, induced abortion is a legal medical procedure in Canada, it is the responsibility of physicians willing to provide this service to do so safely and effectively. This document was developed to assist physicians in developing their own quality management program and to act as a guide for assessing the quality of patient care provided in their facility.

In developing these clinical practice guidelines, the objective is to create a range of appropriate options for given situations based on the available research data and the best professional consensus. The recommendations contained in these guidelines, therefore, should not be thought of as being “cast in stone” but, rather, should be subject to individual interpretation based on clinically significant patient differences.

Policy Statements: This policy reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed. Local institutions can dictate amendments to these opinions. They should be well documented if modified at the local level. To enquire about ordering additional copies, please contact the Society of Obstetricians and Gynaecologists of Canada (SOGC) information and documentation centre. None of the contents may be reproduced in any form without prior written permission of SOGC.

COUNSELLING

Every woman seeking abortion should receive supportive and compassionate counselling responsive to her circumstances. Abortion is not a means of contraception; it is the last recourse for a pregnant woman who does not want to give birth.

Every effort should be made to encourage the woman’s partner to be present at counselling sessions. She must be advised appropriately so that she understands her options: to carry the pregnancy to term and keep the child or have it adopted, as well as the opportunities that exist in society for assistance. The maintenance of strict confidentiality is imperative.

If she chooses abortion, she must fully understand the nature of the proposed procedure, including anaesthesia, the safety, possible immediate and future side effects, as well as potential complications.

Contraceptive counselling, both before and after abortion, should be comprehensive and should include information about the relevant contraceptive methods available, including their advantages and disadvantages.

Counselling pregnant adolescents seeking abortion requires special skill, care, and attention. The proportion of second trimester abortions in this group is high because adolescents tend to delay seeking advice and present later.^{1,2}

All patients choosing abortion are entitled to quality care by practitioners who are qualified to perform these procedures, as well as to identify and manage their complications.

The physician must assure the patient of post-abort counselling.

ABORTION FACILITY

First trimester abortion can be performed safely in a clinic, a free-standing or independent health care facility, or a surgery centre that has met the standards of the governing College of Physicians and Surgeons.^{3, 4} Mid- and late second trimester induced abortions are performed more safely in a hospital setting where emergency facilities can be available immediately.

INFORMED CONSENT

As in the case of any surgical procedure, it is essential to obtain the patient's written consent. The surgeon must make sure that the woman understands the nature and the consequences of the procedure, and that she has the necessary information to make an informed decision.

PRE-OPERATIVE EVALUATION

An adequate pre-operative history and physical examination must be conducted and the following points should be noted:

1. Confirm the diagnosis of pregnancy by urinary or quantitative serum β -hCG measurements
2. Determine the gestational age by one of the following:
 - a) bimanual pelvic examination to ensure that uterine size is consistent with dates
 - b) diagnostic pelvis ultrasound when gestational age is questionable or the presence of an intrauterine pregnancy is uncertain
3. Pelvic ultrasound could be used to determine the gestational age in cases scheduled for second trimester induced abortions between 13 to 16 weeks, and should be used to determine the gestational age in all cases of late second trimester abortions greater than 16 weeks.
4. The identification of any pre-existing conditions or complications, including diabetes, heart disease, blood coagulation disorders, anaemia, mental disorders, cardio-respiratory disease, inability to cooperate during pre-operative evaluation and abortion, and malignant hyperthermia.
5. Detection of any factors which could influence the choice of procedure, anaesthesia, or the pre- and post-operative management.

SCREENING

Routine pre-operative screening of hemoglobin levels and Rh factor is recommended for all pregnant women (treat with Rh immune globulin following surgery if Rh negative).

Other screening procedures, including, but not limited to rubella (treat if susceptible), sexually transmitted diseases (syphilis, gonorrhoea, *Chlamydia*, hepatitis B, HIV), cervical cytology, and sickle cell anaemia, may be carried out and the appropriate treatment, follow-up, and treatment of partners, if necessary, may be arranged accordingly.

FIRST TRIMESTER ABORTION PROCEDURES

Menstrual Extraction

Early diagnosis of pregnancy within one week of a missed period is now possible by using sensitive pregnancy tests. Abortion of these early pregnancies with a small-bore vacuum cannula is called “menstrual regulation,” “menstrual extraction,” or “mini suction.” A properly trained physician can perform these procedures in the office. The only instruments required are a speculum, a tenaculum, the Karman cannula, and a modified 50 ml syringe. At the end of the procedure, it is imperative to examine the tissue obtained by floating it in a clear plastic dish over a light source. In this manner, chorionic villi and/or the gestational sac can be identified. Because the failure rate is as high as 12% due to continuing pregnancy or incomplete abortion, and complication rates are similar to those of early vacuum aspiration (7 to 8 weeks), there seems to be no advantage to menstrual extraction over vacuum aspiration.⁷

Vacuum Aspiration

Vacuum aspiration can be performed easily and safely with little discomfort in the first trimester under local anaesthesia and pre-medication with narcotics and/or sedation if necessary. The advantages over using general anaesthesia are:

- decreased anaesthetic risk from complications of general anaesthesia⁸
- decreased incidence of blood loss, perforation, and cervical laceration
- quicker recovery from anaesthesia with less disorientation
- faster turnover in the recovery room
- quicker discharge and resumption of normal activity
- patient acceptance
- greater economy.

Exceptions would include:

- definite known allergic response to local anaesthesia
- conditions where local anaesthetic and/or drugs used for pre-medication are contraindicated
- non-compliant patients who are difficult to manage
- very young nulliparous women who are extremely difficult to examine
- any patient who is psychologically or physically unable to cope with the procedure under local anaesthesia.

Pre-Insertion of Osmotic Dilators

There are currently three alternatives to “forcible and instrumental dilatation” of the cervix: **laminaria tents**,¹⁰ a **synthetic dilator made of polyacrylonitrile** (Dilapan),¹¹ and the **magnesium sulphate sponge** (Lamicel).¹² Laminaria is the stem of a seaweed, *Laminaria japonicum*, or *Laminaria digitata*. These osmotic dilators are hygroscopic. The great advantage of using these dilators in gynaecology, and especially in cases of therapeutic abortion, is that they bring about gradual and safe dilatation of the cervix with a reduction in rates of cervical laceration and uterine perforation.^{10,13}

Laminaria tents require 6 to 8 hours to achieve dilatation. Polyacrylonitrile and magnesium sulphate sponges cause dilatation faster, with the former producing both dilatation and softening and the latter primarily producing softening.¹⁴ Other alternatives which are still under investigation include low-dose prostaglandin given by vaginal administration and mifepristone (RU486).

Procedure for the Insertion of Osmotic Dilators

1. The cervix is visualized by inserting a speculum and then washed with an antiseptic solution.
2. The anterior lip of the cervix is grasped with a single-toothed tenaculum or another appropriate instrument.
3. The cervical canal is then straightened by pulling on the tenaculum, and the canal is probed to determine its length and diameter, as well as the position and tightness of the internal os.
4. The size and number of laminaria tents required are then determined.
5. The tent is grasped at its distal end with uterine forceps and inserted into the cervical canal just through the internal os while counter traction is applied to the cervix.
6. The tent may then have to be held in place for several seconds or even twisted in the os to ensure it remains in the correct position.
7. One or multiple 4X4 gauze sponges are then placed against the external os of the cervix and lateral vagina. They are left in place until the removal of the tent.

Pre-Operative Medications

Several analgesic and sedation regimens have been suggested using varying dosages and routes of administration. If an anaesthetist is not present during the procedure, the attending physician must assume the ultimate responsibility if any complications arise.

All physicians using pre-operative intravenous medication and local anaesthesia must be trained in resuscitation and stabilization techniques and the use of equipment, and must be prepared to initiate the management of complications if they arise.

Note: *All patients receiving pre-operative analgesia or sedation should have their blood pressure monitored as well as be attached to a pulse oxymeter to measure blood oxygen saturation.*

It is important that post-operative discharge instructions be developed to reflect the use of these medications and that appropriate precautions be taken regarding the need for an escort. Post-operative procedure activities should be defined.

Pre-operative medications and complications

Local Anaesthesia	Narcotics and Sedation
<ul style="list-style-type: none"> - anaphylaxis - minor allergies - toxicity (central nervous system excitation, convulsion, cardiac and respiratory arrest) 	<ul style="list-style-type: none"> - minor allergies and sensitivity - over-sedation - respiratory depression - regurgitation and aspiration

Operative Procedure

The first steps in approaching a surgical problem are the application of sound principles of surgical technique and the prevention of complications, and should include:

- accurate pre-operative diagnosis and evaluation
- high level of operator skill
- sound sterile technique
- atraumatic surgical technique
- thorough removal and identification of tissue
- careful post-operative supervision and follow-up

An intravenous infusion should be started prior to the surgical procedure. Prophylactic intra-operative administration of oxytocin has not been shown to be effective in reducing blood loss.

1. The patient is prepared and draped in the lithotomy position in comfortable stirrups.
2. A screen is not recommended because communication between the physician and the patient is imperative.
3. A bimanual examination is performed to assess uterine position and size. The use of a metal probe for this purpose is not recommended because perforation of the uterus or cervix could occur.
4. The cervix is visualized with the aid of a speculum.
5. Five (5) cc of a local anesthetic solution are injected into the anterior lip of the cervix **prior** to grasping it.
6. The anterior lip of the cervix is then grasped with atraumatic forceps.
7. A uterosacral block is then commenced.¹⁵ See Figures A5.1 and A5.2. Eight (8) cc of a local anesthetic solution is injected into each uterosacral ligament, and a further 2 cc is injected under the mucosa at the needle insertion site. The patient should be informed prior to the injection that she will feel a pinch or slight sensation.
8. Wait approximately 3 to 4 minutes before commencing the dilatation, but continue to converse with the patient.
9. The cervix is then dilated gently until the desired dilatation is achieved by using tapered dilators such as Pratt's dilators rather than Hegar dilators.¹⁶ It is suggested that the cervix be dilated to a **#27** Pratt's dilator in a uterus up to 8 weeks gestation, **#31** to **#33** Pratt's dilator in a uterus up to 10 weeks gestation, and **#37** to **#39** Pratt's dilator in a uterus up to 12 weeks gestation. These recommendations are dependent upon the size of the cervix, the firmness of the cervix, and the prior use of laminaria tents. A thin laminaria tent will dilate the cervix to a diameter of a **#31** to **#33** Pratt's dilator.
10. During the dilation, inform the patient that she will feel pain similar to menstrual cramps. It is important to work slowly; thus decreasing patient discomfort.
11. Vacuum aspiration is then performed in the usual manner, trying to avoid repeated trauma to the internal os. The greatest discomfort during the aspiration occurs when the suction curette is pulled over the internal os.
12. Once the uterus seems empty, the uterine cavity can be examined with a sharp curette, following the above mentioned principles.

Examination of Tissue

All tissue should be examined grossly during or at the end of the procedure. In the absence of visible fetal parts or placenta, the tissue should be examined by floating it in a clear plastic dish over a light source. If chorionic villi cannot be identified, the possibility of an ectopic pregnancy, or incomplete or failed abortion, must be entertained. The tissue should be submitted to the laboratory with all possible haste for microscopic examination.

When the tissue removed from the uterus has been examined post-operatively to the satisfaction of the physician, it should either be disposed of by the institution or submitted to a pathologist for examination and subsequent disposal. The disposal of abortal tissue should be done in a manner consistent with good medical practice.

Post-Operative Care

A physician must be available to treat the patient should significant complications arise. Prior to discharge, post-operative care should be directed towards confirming that the patient is at minimal risk of serious complications. Periodically, the patient's pulse rate, blood pressure, external bleeding, and general physical condition must be observed by an individual who is trained in the care of post-operative patients. If systemic drugs are used for analgesia/sedation, the patient may be discharged after a reasonable length of time with appropriate discharge instructions. The patient must also be accompanied, and should not drive a vehicle. She must be informed where she may obtain emergency care should complications arise.

Complications

Cervical shock

Even after local anaesthetic block of the cervix, vasovagal reactions can occur. A tonic clonic reaction may be confused with a seizure, but it is distinguished by the presence of bradycardia, the patient's rapid recovery, and the absence of any post-ictal state. Routine use of laminaria tents or routine use of atropine with cervical anaesthesia prevents cervical shock.

Perforation

The clinical presentation of perforation depends on the precise anatomical location of the perforation. At the isthmus portion of the uterus can lacerate the ascending branch of the uterine artery within the broad ligament and can give rise to severe pain, a broad ligament haematoma, or intra-abdominal bleeding. The immediate management is laparotomy and ligation of the severed vessels as well as repair of the uterine injury. Hysterectomy may be required to manage such an injury in unusual circumstances.

Low cervical perforations, on the other hand, may injure the descending branch of the uterine artery within the dense collagenous substance of the cardinal ligaments. This is usually a result of forceful dilatation of the cervix. Osmotic dilators are useful in preventing this complication.⁹ In such a case, there is no intra-abdominal bleeding; the bleeding is usually outward and may subside temporarily as the artery goes into spasm. Deaths have occurred as a result of bleeding several hours, or even days, after an unrecognizable low cervical perforation. This complication has usually been managed with hysterectomy, but consideration should be given to arteriography and selective embolization of the hypogastric arteries.

If perforation occurs at the end of the procedure and is fundal, expectant management is usually all that is necessary.

Perforation before or during evacuation of the uterus (false passage) can be managed best by either laparoscopy, followed by completion of the procedure under direct observation, or by evacuation using ultrasonic guidance. If perforation occurs prior to evacuation of the uterus, and omentum and/or bowel are brought into the uterine cavity or through the cervix with a suction curette or other instrument, laparoscopy and/or laparotomy may be necessary to complete the procedure and examine the intra-abdominal contents for injury.

Hemorrhage

Excess bleeding may indicate **uterine atony**, a low-lying implantation, a pregnancy of more advanced gestational age, or perforation. Intravenous oxytocin should be administered, and the abortion completed. The uterus is then massaged between two hands to ensure contraction. If this fails, giving IM or intramyometrial 15-methyl prostaglandins F₂ may be effective. Persistent post-abortal bleeding strongly suggests retained tissue or clot (hematometra) or trauma, and the best management would be prompt surgical intervention (repeat curettage or laparoscopy).

Hematometra (Post-Abortal Syndrome)

Lower abdominal pain of increasing intensity in the half-hour after an abortion suggests haematometra formation. The uterus is large, globular, tense, and could be mistaken for a broad ligament haematoma, except that the mass is midline and arises from the cervix. The treatment is immediate re-evacuation.

Prophylactic Antibiotics to Reduce Infection

Prophylactic antibiotics seem to be the strongest single factor contributing to the reduction of postabortion infection. Most studies show about a 50% reduction in risk, and either tetracycline or doxycycline seem to be excellent choices. Pre-operative administration is not practical and leads to significant gastrointestinal upset. If given after surgery, they are just as effective. Most studies suggest doxycycline 200 mg, one dose immediately after surgery, or tetracycline 500 mg, followed by three further doses 6 hours apart.

Medical Follow-Up

The patient should report for a gynecological examination 2 to 4 weeks after the procedure, and should inform the physician if she does not have a menstrual period within 6 weeks following the abortion. An oral contraceptive can be started within 1 week following the procedure, and an IUD can be placed safely within 2 weeks. Contraceptive compliance and continuation must be discussed, and the emotional response to the abortion evaluated.

SECOND TRIMESTER ABORTION PROCEDURES (14 WEEKS GESTATION OR GREATER)

There is a considerable amount of controversy regarding which method of pregnancy termination in the second trimester is safest, produces the least number of complications, produces the least stress for the patient and provider, and is the most cost effective.” However, dilatation and extraction (D&E) abortion is safer than instillation abortion, and both are safer than hysterotomy and hysterectomy.*” Dilatation and evacuation is definitely safer than instillation procedures up to 16 weeks²¹ and, in experienced hands, morbidity and mortality are greatly reduced using modern D&E techniques.²²

Dilatation and Extraction

Osmotic dilators

Overnight placement of several osmotic dilators is usually sufficient preparation prior to 18 weeks but, beyond 18 weeks, serial sets of osmotic dilators inserted over 2 days are preferable. In general, greater dilatation and softening of the cervix are achieved by using several smaller tents rather than one large tent. A uterosacral block or topical application of a local anesthetic at the time of insertion may be useful in difficult cases to decrease morbidity.

Procedure

Because of decreased morbidity,²³ it is preferable to use local anesthesia with intravenous sedation or analgesia rather than general anesthesia for D&E procedures. If multiple or serial osmotic dilators are used, it is usually unnecessary to dilate the cervix further. The uterus can usually be evacuated up to 15 to 16 weeks gestation with a #16 suction curette or with the use of extraction forceps. After 16 weeks gestation and prior to a forceps extraction, the amniotic fluid should be slowly and carefully evacuated with a suction curette or other instruments.

There are various forceps which have been developed for the extraction of fetal parts and placenta at later gestations. The type of forceps required depends upon the length of gestation and the degree of cervical dilatation obtained. It is suggested that, during a forceps extraction, the physician keep one hand on the **fundus** so that the top of the uterus can be felt, thus preventing perforation. Some prefer to carry out the forceps extraction under direct ultrasound guidance.

It is important not to remove fetal tissue forcefully through the cervix in later second trimester procedures. Bone spicules can tear the cervix. Crushing and rotating techniques have been developed to minimize the cervical trauma.

After a forceps extraction, a large curette should be inserted to ensure complete evacuation, and POC are examined for completeness. If the uterus has not been emptied completely, the evacuation should be repeated.

If bleeding seems to be heavier than expected, oxytocin can be given intravenously, and 0.25 mg ergometrine can be injected directly into the cervix. Not many centres are performing D&E procedures in the very late second trimester, and those that are are doing them for serious medical, psychiatric, or genetic reasons. At this stage, further modifications have been developed using multi-stage laminaria treatment, urea injection into the amniotic sac, followed by extraction after labour begins and after fetal maceration has occurred.²⁴

Prostaglandin F₂ Alpha Amnio-Infusion

Pre-insertion of laminaria tents

Pre-insertion of multiple laminaria tents 6 to 24 hours prior to amnio-infusion may shorten the instillation-abortion time (A-I time), and decrease the risk of cervical laceration.²⁵ One very serious complication which is virtually eliminated is posterior uterine wall rupture, with or without cervical laceration.

Pre-medication

Since there is a higher incidence of gastrointestinal side effects with prostaglandin F₂ alpha (PGF₂ alpha), a recommended pre-medication regime is prochlorperazine, 10 mg IM or IV, or any other antiemetic, and loperamide, 4 mg orally 1 hour prior to amnio-infusion.

Techniques for amniocentesis

The optimal site for amniocentesis is approximately 1 inch below the most prominent part of the uterus palpated through the abdominal wall. Some physicians prefer to perform amniocentesis with a #16 Teflon® extracath. Once the amniotic cavity is entered and amniotic fluid is identified, the rigid central needle should be removed and drainage of amniotic fluid should continue.

A pH test should be performed in order to confirm that the fluid is amniotic fluid. Prostaglandin F₂ alpha is then injected into the amniotic cavity.

Recommended Dose of Prostaglandin F₂ Alpha

Forty (40) or 50 mg of PGF₂ alpha in one injection is quite satisfactory and produces the required result.²⁰ It is mandatory to give a test dose of 5 mg over 1 minute to detect those patients who have extreme sensitivity to the drug or have received an accidental intravascular injection. The remainder can be given over the next few minutes. Constant confirmation of the catheter's position in the amniotic cavity must be assured. A booster dose of 20 to 40 mg of PGF₂ alpha can be beneficial if the membranes are intact and if there is no evidence of cervical effacement or adequate uterine activity.

Care Following Amnio-Infusion

Intravenous oxytocin should not be used before delivery of the fetus unless the membranes are ruptured and there is no uterine activity. Prostaglandin suppositories, if available, or IM 15-methyl prostaglandin are quite useful in this situation.

Once the fetus has been passed, a high dose intravenous infusion of oxytocin should be administered at a concentration of 80 IU/ml to 100 IU/ml per 1,000 ml of lactated Ringer solution. It is imperative that the patient should be examined immediately after passage of the fetus from the uterus because bleeding as a result of a partially or completely retained placenta can be significant and very brisk. If the placenta is retained in the uterus, the patient is afebrile, and bleeding is minimal, it is appropriate to wait for up to 2 hours for spontaneous evacuation of the uterus. If the placenta is retained longer, the uterus should be evacuated. It should be noted that it is rarely necessary to go to the operating room. Evacuation in an examination room with appropriate instruments is usually quite satisfactory.

The cervix should be examined in all cases following prostaglandin amnio-infusion.

Hyperosmolar Urea Amnio-Infusion

Intra-amniotic PGF₂ alpha in doses of 5, 10, or 20 mg added to hyperosmolar urea can be used to procure second trimester abortion.²⁶ The urea solution is prepared by dissolving 80 grams of urea in 100 cc of 5% dextrose in water to make a solution of 59.7% concentration.

Following successful amniocentesis and removal of approximately 200 cc of amniotic fluid, the solution is slowly infused by gravity feed. Prostaglandin F₂ alpha (5, 10, or 20 mg) can be administered 4L immediately following the infusion of urea. Forty (40) grams of urea have also been used with various doses of PGF₂ alpha.

Some advantages of this combination include:

- Low failure rate^{20,26}
- The need for re-injection of booster doses of PGF₂ alpha is eliminated.
- The abortion of live fetuses, particularly in gestations of more than 18 weeks duration, is eliminated.

Extra-Amniotic Prostaglandin F₂ Alpha

Extra-amniotic PGE₂ and PGF₂ alpha have been used to terminate pregnancies complicated by intrauterine fetal death, congenital anomalies incompatible with life, and life-threatening maternal disease prior to fetal viability.^{27,28} Despite the reported usefulness of this route, the technique has not been widely adopted in North America. This is probably related to the fact that approval for prostaglandin use is limited at present to oral and vaginal PGE₂a for induction of labour and intra-amniotic PGF₂ alpha for a second trimester termination of pregnancy.

The extra-amniotic route for delivering PGF₂ alpha can be used quite successfully in selected cases of late second trimester abortion in which there is minimal amniotic fluid, or access into the amniotic cavity is quite difficult. A small (12 gauge) Foley catheter with inflation of the bulb with 15 ml of saline minimizes trauma to the extra-amniotic space, and reduces the risk of intravascular infusion and subsequent hypertonic contractions. Small doses of 0.5 to 1 mg PGF₂ alpha diluted in saline, given intermittently, and titrated to the severity of contractions reduce the risk of hypertonic contraction and lead to successful evacuation of the uterus. It is very important to leave a time interval between PGF₂ alpha and oxytocin administration in order to decrease the risk of hypertonic contractions and the more serious complication of uterine rupture.

The extra-amniotic PGF₂ alpha intermittent infusion technique can be considered a safe, effective, well-accepted alternative in the management of those patients requiring termination of pregnancy in the late second and, even, third trimester of pregnancy.²⁷

Carboprost (Hemabate®)

Carboprost has been used for the following indications:

- Failed second trimester abortion using conventional therapy (i.e. oxytocin, intra-amniotic PGF₂ alpha)²⁹
Termination of pregnancy in late second trimester and third trimester in selected cases with minimal or no amniotic fluid^{30, 31}
- Refractory postpartum or post-abort uterine bleeding³²

Intra-amniotic failures with PGF₂ alpha occur as a result of a low rate of transfer or a high rate of JB metabolic degradation leading to sub-therapeutic concentrations reaching the myometrial cells. The absence or a decrease in the amniotic fluid volume as a result of ruptured membranes or genetic abnormalities may require an alternate route for the administration of prostaglandins.

Carboprost, the synthetic 15-methyl form of PGF₂ alpha, is more potent and has increased uterine smooth muscle stimulating potency as well as a longer duration of activity than PGE₂ and PGF₂ alpha because of its increased resistance to enzymatic degradation. Thus, it can be administered IM.

Successful use of carboprost given IM in patients not responding to conventional therapy has been demonstrated in approximately 95% of patients within 10 to 20 hours.²⁹

Use of this drug as a reserve treatment for intra-amniotic failures will avoid unnecessary morbidity and anxiety for the patient associated with prolonged evacuation procedures.

Oxytocin should not be used concurrently with carboprost and should not be started until at least 4 hours after the final dose unless the fetus has been passed.

The use of multiple laminaria tents should decrease the injection to abortion time. The recommended dosage for failed abortion and/or late second trimester termination is 250 µg given by deep IM injection. The dose can be repeated every two hours as needed. Total doses used have ranged from 1,250 to 2,500 µg.²⁹⁻³¹

Some advantages of carboprost over other forms of prostaglandins and oxytocin are:

- It is more potent, allowing individualization of the dose used in contrast to intra-amniotic methods.
- The IM route is less painful and easier with less danger of infection because it is less invasive.
- It can be used in patients with ruptured membranes where there is no amniotic fluid present.
- It allows the patient to be ambulant for a longer period of time.
- After diagnosis of intrauterine death, there is no need to wait for spontaneous labour because the non-term uterus does respond to carboprost.

Some disadvantages of carboprost include a significant incidence of vomiting and diarrhoea.

Concentrated Oxytocin Infusion

Oxytocin has not been commonly used as a means of abortion induction because it was not thought to be particularly effective for gestations of less than 24 weeks. Oxytocin administered in an increasing concentrated fashion has been efficacious in achieving mid-trimester pregnancy termination in preliminary studies with a mean induction to delivery interval of 8.2+!/5.1 hours.³³ Further exploration of its use for second trimester abortion is warranted.

Hysterotomy and Hysterectomy

Hysterotomy is essentially an early classical cesarean section. With today's technology, there is rarely an indication for this procedure as a primary method for abortion. The morbidity and mortality associated with this procedure are far greater than for any other technique. In most cases, failed abortion is now managed with parenteral prostaglandins, and the only time that hysterotomy should ever be considered after a failed abortion is when a definite uterine anomaly is suspected.

If pregnancy co-exists with a separate indication for hysterectomy, as in cervical dysplasia or uterine or ovarian cancer, this may perhaps be an indication for a gravid hysterectomy. Most patients, however, would be served better by a simpler means of pregnancy termination and a more complete evaluation of their other gynaecologic problems prior to definitive therapy.

REDUCING ABORTION COMPLICATIONS

Hemorrhage from Dilatation and Curettage, and Dilatation and Evacuation Abortions

General anaesthesia seems to increase the blood loss during D&C and D&E procedures, especially if halothane or other similar agents are used, as compared to procedures performed under local anaesthesia with intravenous narcotics and sedation.^{9, 23}

Locally injected vasoconstrictors have had some success in preventing hemorrhage, especially in later pregnancies. Epinephrine does not seem to have an effect;³⁴ however, vasopressin significantly reduces blood loss if 5 units are mixed in the 20 cc of local anaesthetic solution injected into the pericervical area.³⁵ The difference in blood loss seems to be related to the gestational age, and is significant in gestations of 15 weeks or greater. There does not seem to be any untoward side effects from the injection; however, rare serious complications have been reported.³⁵

Perforation

Complete or partial perforation of the uterus is not uncommon. There are several factors which seem to be beyond the control of the physician.³⁶ There is a relative risk of 1.4 for each additional two weeks of gestation and, if the patient is multiparous, she has a relative risk of 3.4.

There are several factors, however, which are within the control of the physician.³⁶ Laminaria tents are associated with a significantly decreased risk of perforation. There is a relative risk of 0.2 if laminaria are used. If general anaesthetic is used, the risk is increased and the relative risk is 1.3. The most important factor is training and experience. The relative risk of perforation by residents is 5.5, when compared to experienced physicians.

Failed attempted abortion

This complication occurs in approximately two per 1,000 abortions performed at less than 12 weeks gestation. Several factors³⁷ that increase the risk of this complication include:

- Previous pregnancy: Relative risk is 2.2 for gravity greater than one.
- Gestational age: Relative risk is 2.9 for gestation less than 6 weeks.
- Small cannula size: Relative risk is 11.1 if mm diameter is less than weeks of gestation for pregnancies less than 6 weeks.
- Uterine anomaly: Relative risk is 90.6 if present.
- Physician training: Relative risk is 2.2 for residents.

It is, therefore, necessary to inspect all tissue after every case and, if fetal parts are not identified, the tissue should be examined with a back light suspended in solution. A magnifying glass can be used if necessary.

MIFEPRISTONE (RU486)

Mifepristone (RU486) is an analogue of norethindrone with a high affinity for progesterone receptors.³⁸ It blocks natural progesterone and acts as a false transmitter. It is effective in inducing abortion at very early gestations after a single oral dose, and its effectiveness is increased to approximately 95% by the addition of a low-dose prostaglandin analogue.³⁹

Its use as an abortive agent has been investigated intensively; lower doses have been used with higher efficacy, and regimens are being fine-tuned.⁴⁰ It also appears that mifepristone may be very useful in producing cervical softening and ripening prior to pregnancy termination, and may be useful in induction of labour closer to term.⁴¹ This drug is a very effective post-coital contraceptive, and its use as a once-a-month contraceptive is now being extensively investigated.⁴¹

CONCLUSION

It should be noted that the use of all techniques to effect therapeutic abortion requires proper training. Operators must be skilled, not only in the initiation of abortion, but also in the management of incomplete and failed procedures, uterine perforation, as well as such complications as hemorrhage, infection, and cervical laceration. Adequate training and ongoing experience using modern techniques with new instruments will lead to a significant decrease in complication rates and resultant morbidity.

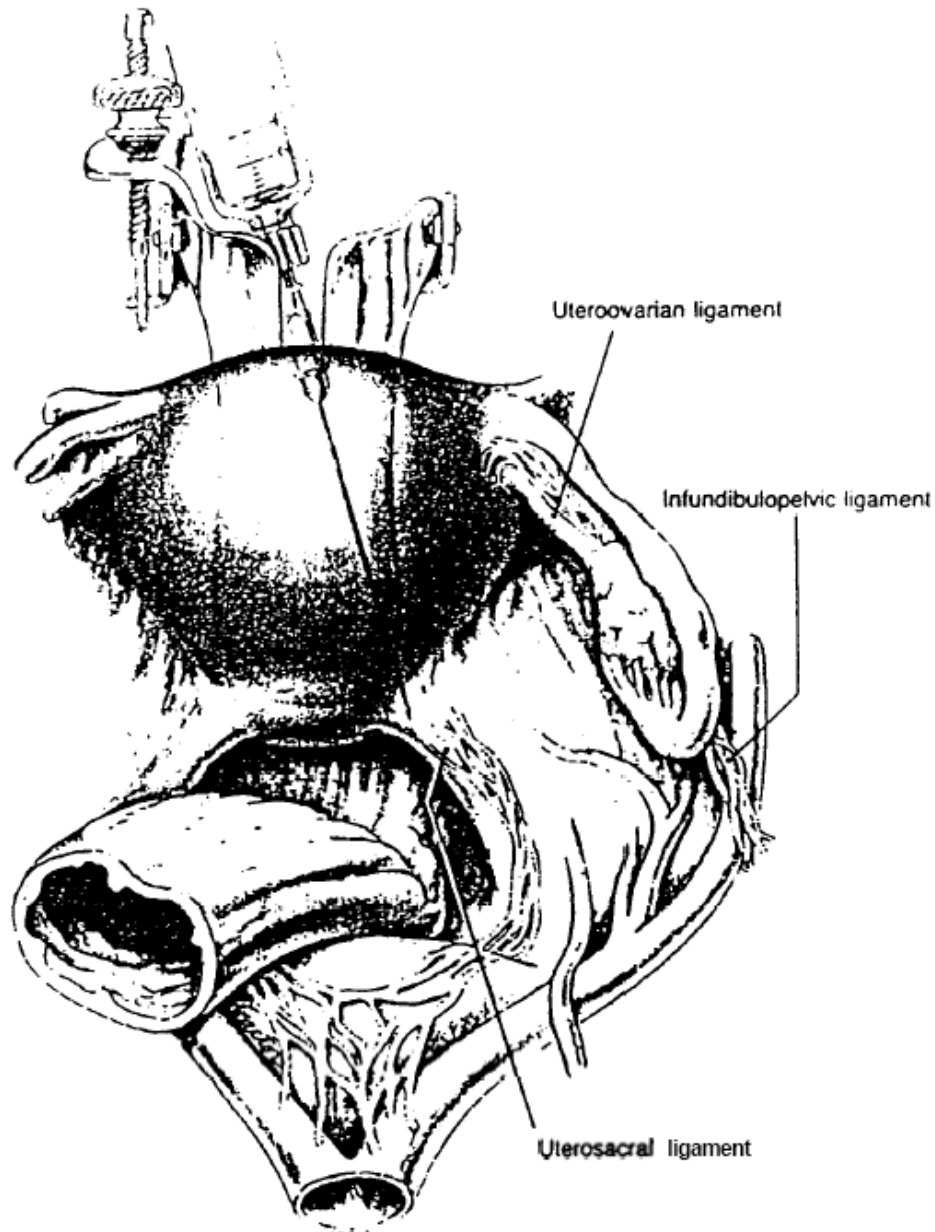


Figure A5.1 - Uterosacral Ligament

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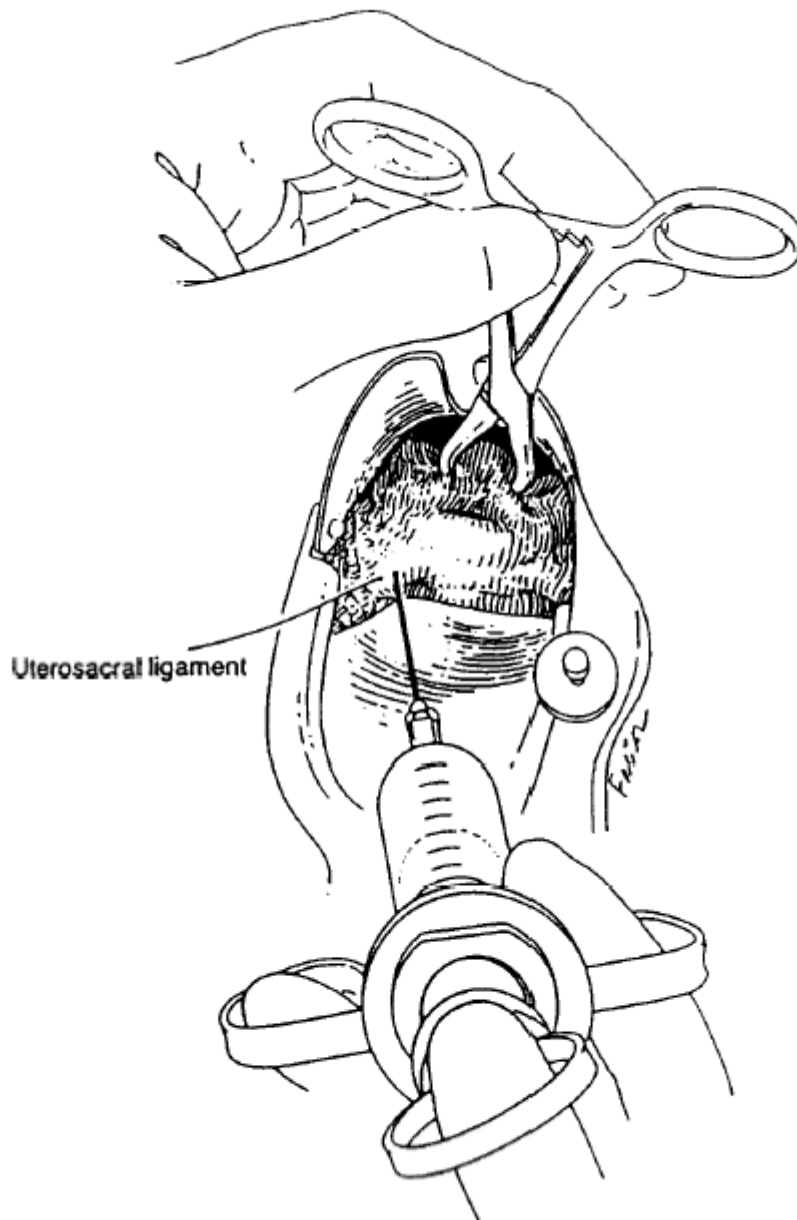


Figure A5.2 - Uterosacral ligament

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APPENDIX 6**CLINICAL PRACTICE GUIDELINES****POLICY STATEMENT***

October 1999

No. 82,

**GUIDELINES FOR
MEDICAL TERMINATION
OF EARLY PREGNANCY**

This Policy Statement has been reviewed and approved by the Social and Sexual Issues Committee of the Society of Obstetricians and Gynaecologists of Canada and was approved by its Council in November 1998.

SOCIAL AND SEXUAL ISSUES COMMITTEE MEMBERS

***Policy Statement:** this policy reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed. Local institutions can dictate amendments to these opinions. They should be well documented if modified at the local level. None of the contents may be reproduced in any form without prior written permission of SOGC.

ABSTRACT

The objective of this Policy Statement is to provide a protocol for the medical termination of pregnancy. The usual method of termination of pregnancy in Canada is surgical. Medical abortion is technically simple but demands careful follow-up. It can be performed in the office and carried out either by gynaecologists or family physicians. Medical abortion avoids surgical complications, and is particularly useful when the uterine cavity is distorted with fibroids.

Methotrexate, which has no adverse effects on reproductive function, is injected into the deltoid. Five, six or seven days later, misoprostol (a prostaglandin of the E₁ series) is administered vaginally.

The entire procedure is described in the guidelines. It should be carried out within 7 weeks of the last menstrual period. The advantages of medical over surgical abortion are: patient autonomy; early and easy access; cost effectiveness and technical simplicity.

The expected successful abortion rate will be over 90%. Side effects include nausea (7%), vomiting (3%) and diarrhea (8%).

As with all medical procedures, medical termination must be discussed in detail with the patient and her consent must be obtained.

INTRODUCTION

Induced abortion is a legal medical procedure in Canada, and it is currently effected by surgical methods. In Europe and China, the medical termination of pregnancy, using mifepristone (RU-486) and a prostaglandin, has been available since 1989. In North America, political and social forces have delayed the testing and introduction of mifepristone for medical abortion.

Medical abortion has important benefits, as surgical complications, including uterine perforation and cervical lacerations, are avoided. Medical abortion may be preferable to surgical evacuation of the uterus when access to the uterine cavity is complicated by fibroids or other genital tract abnormalities.

Since 1952, methotrexate has been known to have cytotoxic effects on trophoblastic tissue, and has been used to treat molar pregnancies and choriocarcinoma.¹ When used as a chemotherapeutic agent, methotrexate treatment had no adverse effect on reproductive functions.² Since 1989, selected ectopic pregnancies have been treated medically with IM methotrexate (50mg/m²), and studies have shown that future fertility is not impaired.³ The low dose of methotrexate used to treat ectopic pregnancies is not associated with the side effects seen with chemotherapeutic regimens. In 1993, Creinin and Darney⁴ described the use of methotrexate (50mg/m²) and misoprostol to induce abortion in women with a gestational age of up to 8 weeks from the LMP, and the complete abortion rate was reportedly 90%.⁴ Since that time, there have been several studies using these medications to induce abortion in early gestations, all reporting success rates of 90% or more.⁵⁻⁸ When Creinin used oral methotrexate followed by vaginal misoprostol, the efficacy was similar to that of IM methotrexate, but there were more gastrointestinal side effects. Over 25 tablets (2.5 mg each) are required to achieve a dose of 50 mg/m²; this is more costly than IM methotrexate.⁹ The level of evidence for methotrexate and misoprostol to induce early pregnancy termination is II-3, that is evidence based on comparison with or without the intervention. It would be unethical to have an untreated control group when pregnancy termination is requested, therefore, all patients fall into the “intent to treat” group.

Misoprostol, a prostaglandin of the E₁ series, is an inexpensive oral preparation that, unlike other prostaglandin preparations, is stable at room temperature. Misoprostol is marketed for the prevention of gastric ulcers in people taking anti-inflammatory drugs, but is known to have uterotonic and cervical ripening properties. In the United Kingdom and France, misoprostol is used to augment medical abortion with RU-486. Several studies have shown that vaginal placement of misoprostol is more effective and has fewer gastro-intestinal side effects than oral administration.¹⁰ Misoprostol (800 µg) is placed in the vagina on the fifth, sixth, or seventh day after the methotrexate has been given.^{5,7} The success rate is lower if misoprostol is placed on the third day following methotrexate administration.^{6,11}

Medical abortions are limited to a gestational age of 7 weeks from the LMP in France and China, and 9 weeks from the LMP in the UK and Sweden.¹² There is evidence to suggest that the efficacy of medical abortion decreases with increasing gestational age, increasing gravidity (>4), and in members of the Asian race.⁵ The studies in Europe and in North America indicate that medical abortion is highly acceptable to women, and to avoid the psychological and physically invasive surgery, women will tolerate multiple visits and the wait for POC to pass.¹³

The objective of these guidelines is to provide a protocol, based on current literature, for the medical termination of pregnancy. Although medical abortion is technically simpler than suction curettage, it is logistically more complex due to the need for close follow-up and commitment by the patients and physicians. Medical abortion may be initiated at an office visit either by gynaecologists or family physicians.

COUNSELLING

Every woman seeking abortion needs supportive, compassionate counselling. As recommended in the 1996 Society of Obstetricians and Gynaecologists of Canada (SOGC) Guidelines,¹⁴ counselling should include discussion about the issue of continuing the pregnancy.

When discussing medically induced abortion, it must be emphasized that the procedure has a failure rate of approximately 5%, and that a surgical evacuation of the uterus may be necessary. Medical abortion involves several clinic visits and blood tests to determine if the termination has been successful. Women who cannot commit to follow-up should be offered suction curettage.

Miscarriage normally occurs within the first 24 hours after insertion of the misoprostol and will involve cramps of varying severity, and bleeding with clots and the passage of tissue. Women who cannot tolerate these symptoms, or the sight of POC, should be offered surgical abortion. Less than 1% of patients require a dilatation and curettage for bleeding following medical abortion.¹³

Approximately 10% of successful medical terminations will be “delayed” in that the complete evacuation of the uterus may take several days and, on occasion, weeks. If the woman seeking medical abortion is aware of this possibility, she will be more likely to accept the delay and avoid unnecessary surgical intervention.

In the event of a continuing viable gestation, immediate suction curettage is strongly advised, as methotrexate and misoprostol are reportedly associated with birth defects.^{6, 13}

The safety of the medications and the lack of effect on future fertility should be discussed, together with side effects, including nausea (7%), vomiting (3%) and diarrhea (8%).⁵

Medical abortion can be offered up to 9 weeks from the LMP as long as the woman is made aware that the failure rate may be increased after 7 weeks gestation. The same is true for those who have had more than four pregnancies.

When patients are well informed, the need for intervention in the event of a delayed reaction or heavy prolonged bleeding will be reduced. The patient should feel free to contact the office to ask further questions, to seek reassurance, to discuss her progress, and for post-abortion counselling. It should be made clear that the patient can request a suction curettage at any time and that, in the event of a complication, surgery will be arranged without delay.

INFORMED CONSENT

Although medical abortion is not a surgical procedure, obtaining the patient’s written consent is recommended. The consent should refer to the risk of the teratogenic effect of the medications in the event of a continuing viable gestation and declare that, in this circumstance, a surgical abortion is “strongly advised.” The physician must be certain that the woman understands the nature and the consequences of the procedure in order to make an informed decision in choosing medical over surgical abortion.

ABORTION FACILITY

Medical abortion of gestations less than 9 weeks from the LMP can be performed in a private office or in a clinic. As this procedure poses no unique safety issues, availability of facilities that could deal with women having spontaneous miscarriage is sufficient.

EVALUATION

A history and physical examination must be conducted and the following points noted:

1. Confirmation of the diagnosis of pregnancy by hCG or ultrasound.
2. Determination of gestational age (< 9 weeks from LMP) by:
 - a) menstrual history
 - b) bimanual pelvic examination to ensure that the uterine size is consistent with dates
 - c) ultrasound if the gestational age or the presence of an intrauterine gestation is in question
3. The identification of any condition which may contraindicate medical abortion: emotional instability, risk of loss to follow-up, gestation >63 days, active liver or renal disease (AST >2 x normal, creatinine >120 umol/L), leukopaenia (count <3.0 10⁹/L), inflammatory bowel disease, anaemia (Hb <95 gm/L), known intolerance or allergy to methotrexate or misoprostol.

SCREENING

In addition to identifying the woman's Rh status, selective screening may include measurements of hemoglobin, white blood cells, AST, creatinine, and rubella immunity. Cervical cytology and cultures may need to be taken.

PROCEDURE

1. Methotrexate 50 mg/m² is given by IM injection into the deltoid.
Rh immune globulin is given if the woman is Rh negative.
Analgesics, an antiemetic and eight 200 µg tablets of misoprostol are prescribed.
The patient is told to abstain from intercourse, and to avoid nutritional supplements and foods containing folic acid including green vegetables, legumes, and oranges.
2. On the fifth, sixth, or seventh day after the methotrexate was administered, the patient places four misoprostol tablets high in the vagina. If there is no bleeding or passage of tissue after 24 hours, then four more tablets should be inserted.
3. Two days after the first application of misoprostol, a quantitative hCG is drawn or an ultrasound performed.
4. The day after the hCG or the ultrasound, an office visit may be arranged to determine if the termination is a success. The judgment is made depending on the amount of bleeding, passage of tissue, or loss of pregnancy symptoms. If the ultrasound shows no POC, the termination is judged to be a success.
5. The outcome is monitored by following hCG levels. One week after the first measurement, the test is repeated. The next day, the patient makes an office visit. If the hCG has fallen by more than 80% over the 7 days, the termination was a success. If the hCG has decreased by less than this amount, weekly hCGs should be carried out until the level approaches zero or there is a 1-week interval decrease of greater than 80%. This represents a delayed reaction, defined as the passage of tissue more than 24 hours after the last misoprostol dose. If the hCG plateaus or increases, this represents an incomplete abortion or an ongoing viable gestation, and suction curettage should be arranged.
6. Final confirmation that the termination is complete is made by bimanual examination and the discovery of a non-pregnant uterus. At this visit, time should be taken for contraception counselling and the most appropriate method of contraception started.

COMPLICATIONS

Bleeding

Most women (76%) abort within 12 hours after the insertion of misoprostol, and during this time the bleeding may be heavy. Clots may be passed. The woman should call if, for more than 4 hours, more than two pads per hour are soaked. Arrangements should be made for physical assessment. Often the POC can be visualized in the cervix and removed. If there are any concerns, a suction curettage should be arranged.

Delayed reaction

In this situation, there is a delay in the passage of all or some of the POC. As long as the hCG is falling, the pregnancy is not viable. In most circumstances, the hCG will fall slowly until completion occurs, and then the hCG levels drop abruptly. Oral misoprostol (800 µg) can be given after the initiation of the procedure in an attempt to expedite the miscarriage. This may take days to weeks, and the decision about when to intervene surgically can be made between the patient and her physician.

Failed termination

Most failures (5%), defined as need for surgical intervention, are incomplete abortions. Less than 1% of attempted medical abortions will have a continuing viable gestation, and arrangements for suction curettage should be made. In this situation, there may be little or no bleeding, and the symptoms of pregnancy persist. An hCG value greater than 50,000 IU 2 days after the misoprostol is associated with, but not diagnostic of, an unsuccessful procedure. Depending on the hCG level and the clinical assessment, a repeat hCG or ultrasound can be performed to determine if the pregnancy is viable. If there is no fetal cardiac activity, the patient can be treated as having a delayed response.

Anxiety

If the woman or the physician has any serious concerns, at any time, a suction curettage should be arranged. Pretreatment counselling and proper patient selection will minimize this problem.

Teratogenesis

Continuation of a viable gestation after failed medical abortion with methotrexate and misoprostol may result in the birth of a baby with anomalies, especially the Mobius sequence and limb defects.^{6, 13} The risk has not been quantified.

ADVANTAGES OF MEDICAL OVER SURGICAL ABORTION

- **Patient autonomy:** More privacy and control, less frightening, non-invasive, “natural”
- **Early access:** No surgical waiting time. Some physicians prefer to wait until more than 7 weeks gestation from LMP to perform surgical abortion because of the small increase in the risk of failure when terminating earlier gestations.
- **Avoids surgical complications:** Perforation, cervical laceration
- **Cost effective:** Medications are easily obtained and are inexpensive (Cost to patient: methotrexate \$50.00 and misoprostol \$5.00, a total of \$55.00. Health care costs different from surgical: hCG x 3 \$45.00, ultrasound \$55.00, extra office visit x 2 \$37.00, a total of \$137.00). Significantly cheaper than a surgical abortion in a hospital (Cost to patient: laminaria tent \$50.00. Health care cost: surgery \$100.00, anaesthesia \$80.00, hospital \$360.00, a total of \$540.00).
- **Technically simple:** Can be offered through an office.
- **Alternative to failed surgical abortion:** Inability to gain access to the uterine cavity due to fibroids or uterine anomaly.

DISADVANTAGES

- **Patient and clinician commitment:** Dedication to follow-up. There is always the worry that a patient will be lost to follow-up and that the pregnancy will continue, with the delivery of an infant with birth defects.
- **Longer process:** From initiation to the reassurance that the abortion is complete takes a minimum of 1 week when monitored by ultrasound and 2 weeks with hCG monitoring.
- **Higher failure rate**
- **More bleeding:** As POC are passed.
- **Cramps:** Need for narcotic analgesia is higher.

OTHER MEDICAL TERMINATIONS

Misoprostol is a prostaglandin that has cervical ripening properties and may be used as an alternative to laminaria tents prior to surgical abortion. However, cramps, bleeding, and miscarriage may occur before the procedure. Several studies have evaluated misoprostol for the evacuation of incomplete and missed abortions. In these cases, the success rate, with 800 µg misoprostol per vagina once, is approximately 80%. This can provide an alternative to surgery if expectant management fails.¹⁵⁻¹⁷

In the second trimester, misoprostol is a very efficient agent for the termination of pregnancies complicated by genetic anomalies, ruptured membranes or fetal demise. In gestations of less than 24 weeks, misoprostol (400 µg) is given every 4 hours (q 4 h) for up to six doses. Once delivery occurs, intravenous oxytocin is then administered. In non-viable gestations between 24 and 30 weeks and greater than 30 weeks, 200 µg and 100 µg of misoprostol, respectively, are given as described earlier.

If there is any uterine scar, it is preferable to give three doses of 50 µg each. In this situation, the amount of misoprostol may be increased to 100 µg /dose if the patient is not in labour.

Misoprostol given orally is associated with more gastro-intestinal side effects than when given intravaginally.

CONCLUSION

The medical termination of early pregnancy using methotrexate and misoprostol appears to be a safe and effective alternative to surgical abortion. The SOGC believes that abortion should not be a primary means of family planning. Wide-scale programmes, emphasizing responsible sexuality and providing both information and access to reliable contraception, will do much to reduce the demand for abortion. Despite these efforts, contraceptive failures will result in a continuing demand for abortion services. Further research is encouraged to provide safer and more effective forms of pregnancy termination.

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