AN OVERVIEW ON ABORTION

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ABSTRACT
Abortion is the expulsion or extraction of an embryo or foetus from its mother when it is not capable of independent survival. An abortion that occurs spontaneously is called miscarriage. When deliberate steps are taken to end a pregnancy, it is called an induced miscarriage. Modern methods use medications or surgery for abortions. The drug mifepristone in combination with prostaglandin is safe and effective as surgery during the first and second trimester of pregnancy. The most common surgical technique involves dilating the cervix and using a suction device. When performed legally and safely, induced abortions do not increase the risk of long term mental, physical problems. In contrast unsafe abortions (those performed by unskilled individuals, with hazardous equipments or in unsanitary facilities) may increase the risk.

KEYWORDS: Abortion, Miscarriage, Induced abortion, Mifepristone, Surgical methods.

INTRODUCTION
World health organization defines abortion as the termination of pregnancy before 20 weeks of gestation period. In common language abortion is called as miscarriage. In developed countries, abortion is legal whereas most of the developing countries do not encourage and permit abortion. It is estimated that 28 per 1000 women in the world undergo abortion and over 70,000 maternal deaths occur worldwide. The deaths associated with abortion arises due to the unsafe and non professional approach in performing abortion. [2]

In the past, it was done using crude tools such as sharpened tools, physical trauma and other traditional methods. With advancement in the field of medicine, contemporary methods are now used and involve the use of medication and surgical procedures.

When a woman gets a pregnancy terminated voluntarily from a service provider, it is called as an induced abortion. Spontaneous abortion is when the process of abortion starts on its own without any intervention. In common language, it is called as miscarriage.

Globally, induced abortion is an integral component of reproductive health services in both developed and developing countries. Women require access to safe abortion services that are an integral part of women's reproductive health, irrespective of factors such as failed/ lack of access to contraception, legality etc.

Till 2017, there was a dichotomous classification of abortion as safe and unsafe. Unsafe abortion was defined by WHO as "a procedure for termination of a pregnancy done by an individual who does not have the necessary training or in an environment not conforming to minimal medical standards." However, with abortion technology now becoming safer, this has been replaced by a three tier classification of safe, less safe, and least safe.

- Safe abortion: provided by health-care workers and with methods recommended by WHO. [2]
- Less-safe abortion: done by trained providers using non-recommended methods or using a safe method (e.g. misoprostol) but without adequate information or support from a trained individual.
- Least-safe abortion: done by a trained provider using dangerous, invasive methods

According to Guttmacher institute and other studies women opt abortion under several conditions including financial instability, unwilling to be a single mother, negative impact on mother’s life, rape, diseases such as vascular disease diabetes, hormonal imbalance, infections and abnormalities of the reproductive system.
ABORTION

Abortion is defined as the termination of pregnancy by the removal or expulsion from the uterus of a foetus or embryo prior to viability. Abortion comes from the Latin word, (abortiri means "to perish") and may be briefly defined as "the loss of a foetal life."

An abortion can occur spontaneously, in which case it is usually called a miscarriage, or it can be purposely induced.

TYPES OF ABORTION

1. SPONTANEOUS ABORTION

It is commonly referred to as miscarriages. They are unintentional. They usually occur before the 20th and 24th week. The most common causes of spontaneous abortion are related to abnormal developments of the embryo or foetus. Spontaneous abortion is caused by chromosomal abnormalities, vascular diseases, diabetes, infections, uterus abnormalities and trauma. The Accidents and trauma have also been linked with the high rates of miscarriages among women.

CLASSIFICATION OF SPONTANEOUS ABORTION

a) Threatened abortion
It is characterized by unexplained bleeding, cramps and backache that may jeopardize the foetus. Bleeding persists for days and the cervix is closed. It may be followed by partial or complete expulsion of pregnancy.

b) Imminent abortion
It is manifested by increased bleeding and cramping. The cervix dilates and membranes may rupture.

c) Complete abortion
It occurs when all the products of conception are expelled. In addition the symptoms of pregnancy are no longer present and the pregnancy test become negative.

d) Incomplete abortion
It means that parts of the products of conception are retained, most often the placenta. The cervix is dilated along with vaginal bleeding and cramp like pain.

e) Missed abortion
It means that the foetus dies in uterus but is not expelled. Uterine growth ceases, breasts change regress, and the woman may report a brownish vaginal discharge.

f) Habitual abortion
The abortion that occurs consecutively in three or more pregnancies.

2) INDUCED ABORTION

An abortion which is done intentionally. It is also called as an artificial or therapeutic abortion. An induced abortion may be classified as therapeutic or elective. The manner selected often depends upon the gestational age of the embryo or foetus, which increases in size as the pregnancy progresses.

TYPES OF INDUCED ABORTION

a) Therapeutic abortion
An abortion is medically referred to as ‘therapeutic abortion’ when it is performed to save the life of the pregnant woman; that is to prevent harm to the woman's physical or mental health. The indications for this type of abortion are: when the foetus has significantly increased chance of mortality or morbidity.

A therapeutic abortion may also be used to reduce the number of fetuses if a woman is pregnant with multiples; this procedure is called multi-foetal pregnancy reduction (MFPR).

b) Elective abortion
An abortion is referred to as an elective or voluntary abortion when it is performed at the request of the woman for non-medical reasons. Elective abortion is done at the request of the woman. This is usually done for non-medical reasons.

METHODS OF ABORTION

1) MEDICAL ABORTION

Medical abortions are those induced by abortifacient pharmaceuticals. Medical abortion became an alternative method of abortion with the availability of prostaglandin analogs and the antiprogestrogen Mifepristone. Ultrasound should be carried out first to determine the viability of the pregnancy, whether it is uterine or ectopic. After that, the dating of pregnancy should be determined with the help of an ultrasonogram.

The drugs used for medical pregnancy termination include mifepristone and misoprostol. Mifepristone is given orally; it blocks progesterone synthesis in the female body required to continue the pregnancy. Misoprostol can be taken orally or vaginally about 36 to 72 hours after administration of mifepristone. It prompts the uterus to contract and expel the fetus, which may take a few hours to a few days. A physical examination is carried out after 1 to 2 weeks for the assessment of completion of termination of pregnancy or any other complication related to the abortion.

The most common early first-trimester medical abortion regimens use mifepristone in combination with a prostaglandin analog (misoprostol or gemeprost) up to 9 weeks gestational age, methotrexate in combination with...
a prostaglandin analog up to 7 weeks gestation, or a prostaglandin analog alone.\textsuperscript{[7]}

Mifepristone–misoprostol combination regimens work faster and are more effective at later gestational ages than methotrexate–misoprostol combination regimens, and combination regimens are more effective than misoprostol alone. This regimen is effective in the second trimester.

**REGIMEN**

a) Mifepristone /Misoprostol
   - Mifepristone 100-600 mg orally followed by Misoprostol 200-600 µg orally/400-800 µg vaginally, buccally or sublingually given immediately or upto 72 hours.

b) Misoprostol Alone
   - 800 µg vaginally or sublingually, repeated for upto three doses.

2) SURGICAL METHOD

a) Menstrual Regulation
It is a surgical methods used in the first trimester. Menstrual regulation consists of aspiration of the contents of the uterine cavity by means of a plastic cannula. It has a plastic 50 mL syringe capable of creating a vacuum of of 65 cm Hg. It has a simple thumb-operated pressure control valve and piston locking handle. It is carried out effectively within 42 days of the beginning of the last menstrual period (LMP). A paracervical local anaesthetic block or preoperative sedative alone usually used but some times in an apprehensive patient, general anaesthesia with intravenous thiopentone sodium may be necessary. This procedure can be performed in an office set-up, outpatient clinic, or day-care centre. This method has been extensively evaluated and found to be efficient, safe, and easy to use in terminating early pregnancy. It is a good practice to examine the products of conception. The occasional complications encountered include failure to evacuate leading to continuation of pregnancy, incomplete evacuation, haemorrhage, cervical laceration, perforation, infection and anaesthetic complications. A failure to evacuate may occur due to early pregnancy, Ectopic pregnancy.

b) Suction aspiration
Suction aspiration is usually carried out for aborting a pregnancy between 6 and 16 weeks. The patient should lie down on her back in the lithotomy position. The operation can be generally undertaken under local anaesthetic, paracervical block, coupled with some sedation if necessary. Apprehensive patients may need general anaesthesia. Tenaculum is used to hold the cervix in place, and it is dilated with the help of absorbent rods varying in thickness. When the cervix is dilated enough, suction cannula of the appropriate size (diameter corresponding to the weeks of gestation) into the uterine cavity. A standard negative suction of 650 mm of Hg is applied and the products are aspirated.

The procedure usually takes 10 to 15 minutes, and antibiotics are given at the end of the procedure to avoid septic abortion. Complications are incomplete evacuation, infection, uterine perforation and bleeding.

Manual vacuum aspiration (MVA) consists of removing the fetus or embryo, placenta, and membranes by suction using a manual syringe, while electric vacuum aspiration (EVA) uses an electric pump. These techniques differ in the mechanism used to apply suction.

c) Dilatation and evacuation
It is a surgical abortion procedure performed after 16 weeks gestation. First dose of antibiotics are given to prevent the infection. The surgery is preceded by cervical preparation; in most cases 24 hours prior to the actual procedure. Laminaria sticks, natural or synthetic rods that absorb moisture from the cervix, mechanically dilate the cervix. Misoprostol can be used to soften the cervix further; an intact D&E can only be performed with 2-5 centimeters of cervical dilation.\textsuperscript{[8]}

Feticidal injection of digoxin or potassium chloride may be administered at the beginning of the procedure to allow for softening of the fetal bones or to comply with relevant laws in the physician's jurisdiction. With the help of suction catheter the amniotic fluid and other contents are evacuated. During the surgery, the fetus is removed from the uterus in the breech position, with mechanical collapse of the fetal skull if it is too large to fit through the cervical canal. Decompression of the skull can be accomplished by incision and suction of the contents, or by using forceps. If the fetus is in a vertex presentation, forceps can be used to turn it to a breech presentation while in the uterus (internal version).\textsuperscript{[8]}

d) Dilatation and curettage
Dilation and curettage (D&C), the second most common method of surgical abortion, is a standard gynaecological procedure performed for a variety of reasons, including examination of the uterine lining for possible malignancy, investigation of abnormal bleeding, and abortion. The cervix is dilated with a special instrument and curettage refers to cleaning the walls of the uterus with a curette. Curette is a metal rod with a handle on one end and a sharp loop on the other end; it is inserted into the uterus through the dilated cervix. The curette is used to gently scrape the lining of the uterus and to remove the tissue in the uterus.\textsuperscript{[10]} The scrapped tissue is examined for the completeness of the abortion or miscarriage.
COMPLICATIONS
1. PELVIC INFECTIONS: Bacteria can infect the uterus while performing abortion under unsterile condition. Although the infection can be treated with antibiotics, in rare cases suction abortion may be done followed by surgery and hospitalization.[9]
2. INCOMPLETE ABORTION: Incomplete abortion refers to the procedure of abortion where a part of fetus or other products are not removed completely from the uterus and this may require other medical procedures to be performed. Incomplete abortions often lead to infections.
3. BLOOD CLOTS: During the procedure blood clots that can cause severe cramping can be formed, which must be removed by repeated surgical procedures.
4. HEAVY BLEEDING: this is not common and can be treated by repeat suction, medication etc.
5. CUT OR TORN CERVIX: The abortionist must stretch open the cervix to allow the medical instruments inside.
6. PUNCTURE OF THE WALL OF UTERUS: The outer wall of uterus is cut open during suction abortion. Some perforations can also lead to infections.
7. ANESTHESIA RELATED COMPLICATIONS: As other surgical procedures anesthesia increases the risk of complications associated with abortion, therefore many surgical abortions are conducted without anesthesia where the patient must endure the pain.
8. LOW BIRTH WEIGHT
9. PRETERM BIRTH
10. WEAKENED OR DAMAGED CERVIX

CONCLUSION
Abortion is a social and medical issue. It is entrenched into the legal laws of every country in the world in one way or another. Abortion destroys life and violates the right to life. There are advantages and disadvantages of abortion of almost equal measure.

Most governments in the developed countries have legalized abortion. The health risks of abortion depend principally upon whether the procedure is performed safely or unsafely. World Health Organization defines unsafe abortions as those performed by unskilled individuals, with hazardous equipment, or in unsanitary facilities.[2] Abortion can be classified into medical and surgical abortion. The drugs used in medical abortion include misoprostol and mifepristone. The procedures that can be performed under surgical abortion are dilatation and curettage, dilatation and evacuation, dilation and extraction.

Abortion and childbirth complications have been the leading causes of maternal deaths the world over. With the advent of the 21st century, maternal deaths have declined. This has been attributed to education on family planning as well as the use of contraceptives.

REFERENCES
2. World Health Organization.