

ABORTION *explained*



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What is abortion?

Abortion is defined as the ending of a pregnancy by the removal or expulsion of an embryo or fetus from the uterus before it is able to survive independently.

Spontaneous abortions are most commonly known as **miscarriages**, in which an embryo or fetus dies as the result of natural or accidental causes. An abortion is considered an **induced abortion** if it is brought about deliberately and intentionally. For the purposes of this flipchart, the term abortion will be used to mean induced abortion, not spontaneous abortion (or miscarriage).

What are the different types of abortion?

There are three primary categories of induced abortion: medical (also known as chemical), surgical, and alternative methods. A medical/chemical abortion is a non-surgical procedure in which pharmaceutical drugs are used to bring about the death of the embryo. A surgical abortion is a procedure that removes the embryo and placenta from a woman's uterus. A third category, alternative abortion methods, consists of oral **abortifacients**, foreign bodies inserted into the uterus, and/or the application of external force to the pregnant woman's body.

Under what circumstances are abortions performed?

In spite of varying laws regarding abortion, ranging from highly restrictive to highly permissive, abortions are performed in every nation in the world. In highly developed countries, abortion may be heavily regulated, though legal, and typically performed within the medical establishment. In other countries, where abortion laws are highly restrictive, or where medical care is particularly expensive, abortions may be more commonly performed outside of the medical establishment.

For how long have abortions been performed?

While the first recorded instance of abortion has been traced to China in 2700 BC, there is reason to believe that abortions have been performed for as long as women have gotten pregnant. Though medical technology has continued to develop and change, the fundamental techniques of induced abortion—removing the embryo from the uterus and using herbs or drugs to induce labor—have remained largely the same for thousands of years of recorded history.



A NOTE TO READERS:

This resource has been created for a global audience, so some information on specific practices may need to be adjusted for your region. General guidelines have been included with the expectation that each individual user would adapt the narrative for his or her audience.

The illustrations included in this resource, though realistic in nature, show less blood than would be present during actual abortion procedures. This allows the stages of each procedure—typically obscured by blood and tissue—to be more clearly seen in each illustration.

Bold italicized words throughout the text designate key terms for which a definition is included in the glossary at the end of the flipchart.

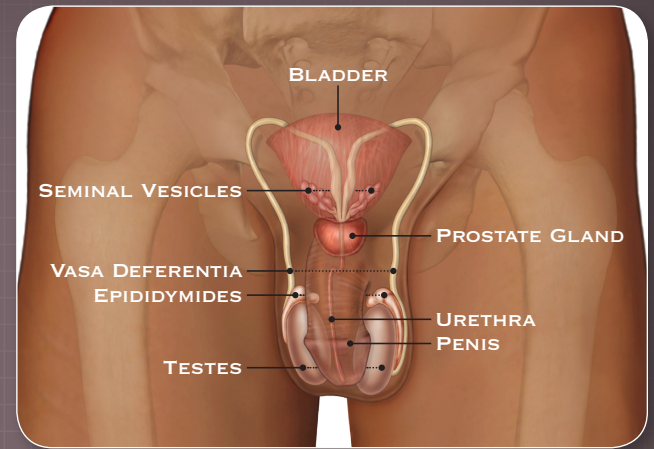


THE MALE REPRODUCTIVE SYSTEM

After sperm cells are formed in the **testes**, they are stored in the **epididymides**. During sexual arousal, the **penis** enlarges and becomes erect, which allows it to penetrate the female vagina during sexual intercourse.

In the first stage of **ejaculation**, called emission, sperm cells travel through the **vasa deferentia**, where they combine with additional fluids from the **seminal vesicles** and **prostate gland** to create **semen**. The semen collects in the ejaculatory ducts, which are located where the ends of the vasa deferentia join the seminal vesicles within the prostate gland.

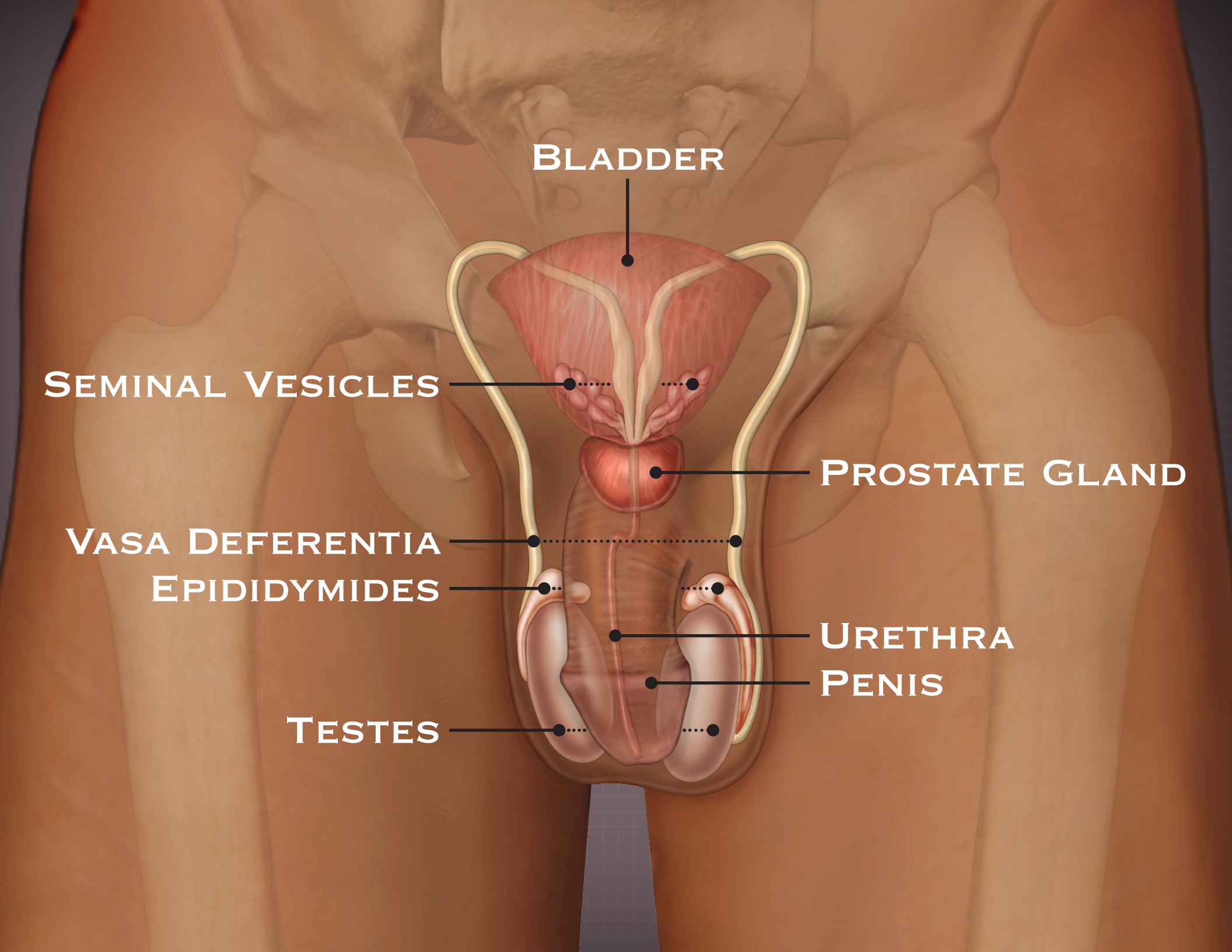
During ejaculation proper, the second stage of ejaculation, a spinal reflex causes rhythmic contractions of the smooth muscles within the urethra, penis, and prostate gland, and propels the semen through the urethra out the tip of the penis in spurts.



NOTES

The bladder is the organ that collects urine from the kidneys before disposal during urination. Urine exits the bladder via the urethra, **but this process is entirely separate from ejaculation**, and is not associated with reproduction.

During ejaculation, the internal sphincter of the urinary bladder is tightly sealed to ensure that the seminal fluid travels forward, and to prevent any urine from mixing with the semen.



BLADDER

SEMINAL VESICLES

PROSTATE GLAND

VASA DEFERENTIA

EPIDIDYMIDES

URETHRA

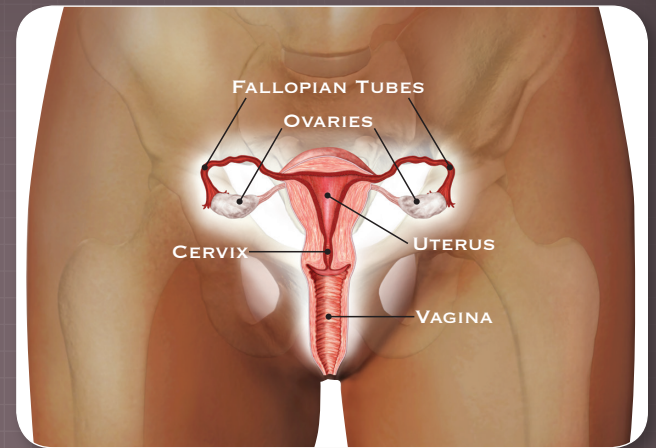
PENIS

TESTES

THE FEMALE REPRODUCTIVE SYSTEM

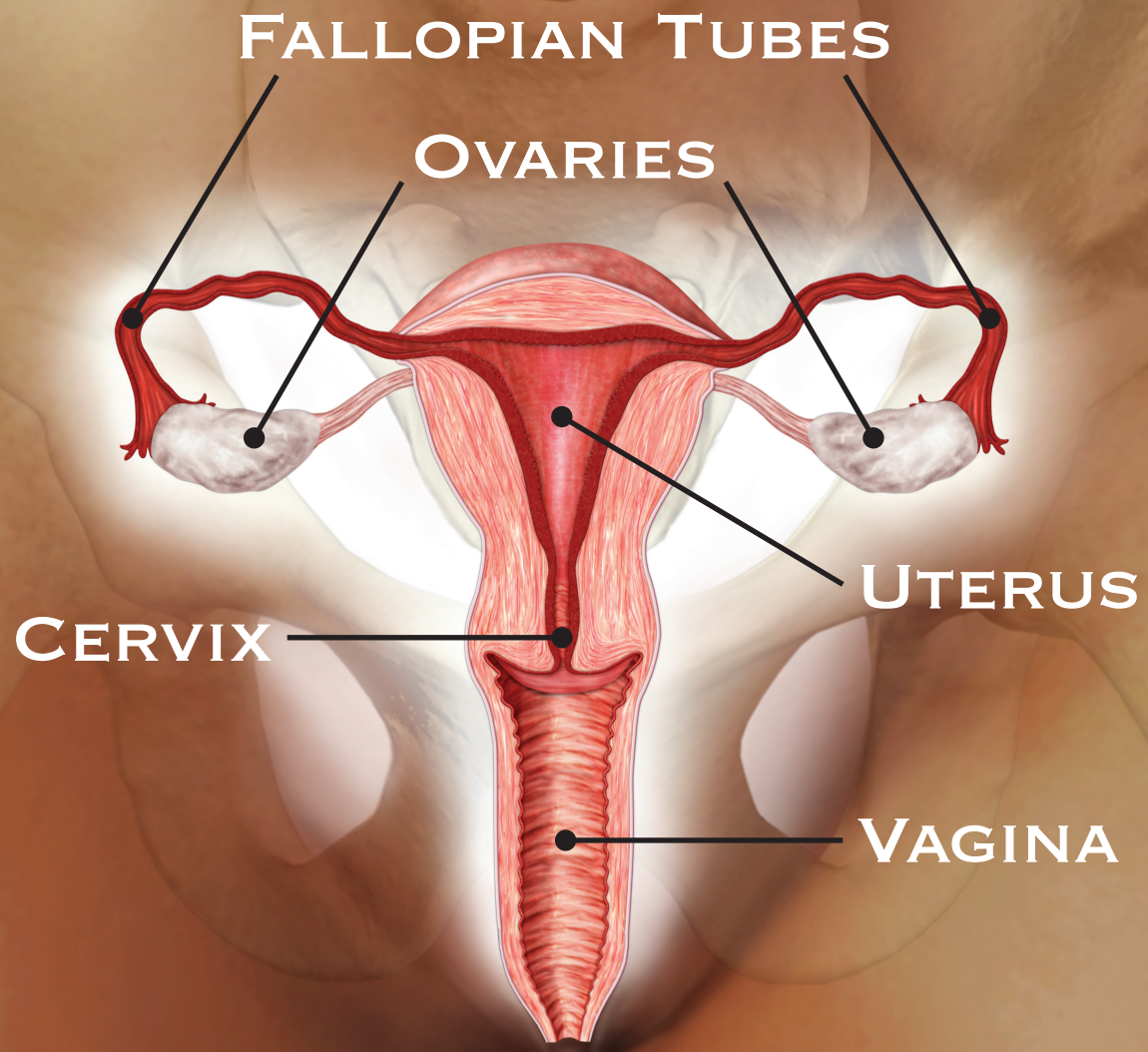
The **ovaries** are the female reproductive organs that produce **eggs**. During **ovulation**, an egg is released from one of the ovaries into the nearby **fallopian tube**. Upon **ejaculation** during sexual intercourse, the man's erect **penis** releases **semen** into the woman's **vagina**, where it then flows through the **cervix** into the **uterus**. The **sperm** contained in the

semen travel through the uterus into the fallopian tube and surround the egg, which is traveling in the opposite direction—from the ovary toward the uterus. If the egg is fertilized, a new human life has begun. For the first eight weeks of life this human being is called an **embryo**. From week nine of pregnancy until birth, this human being will be called a **fetus**.



NOTES

Pregnancy is generally dated by “gestational age,” in which day 1 of pregnancy is the first day of the woman’s last menstrual period (LMP). Ovulation and fertilization generally occur around day 14, or two weeks, of a 40-week pregnancy term. By the time the woman’s period is late, and she suspects she may be pregnant, the newly formed child is considered to be about “five weeks” old, even though fertilization actually took place only three weeks ago. The term of a pregnancy is measured in three trimesters: first, weeks 1–13; second, weeks 14–26; and third, weeks 27–40.



FERTILIZATION AND IMPLANTATION

While semen contains millions of sperm, fewer than 1,000 sperm will make it to the egg. The head of each sperm contains the man's genetic material, called **DNA**, and the tail is used for movement. Each sperm is propelled forward by the whipping motion of its tail toward its destination: the egg, which contains the woman's genetic material. Once a single sperm penetrates the outer layer of the egg, all other sperm are blocked from entry into the egg.

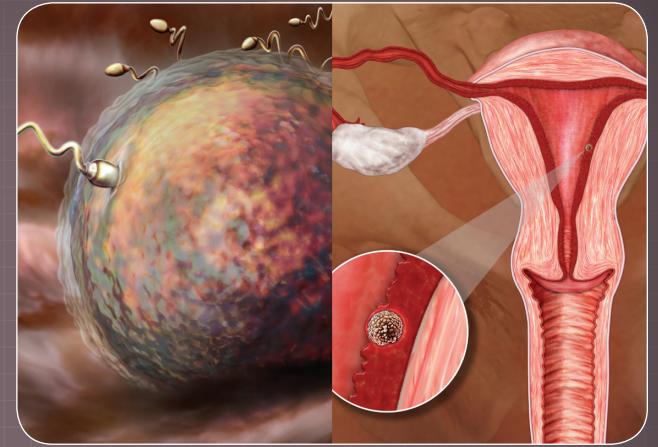
When a sperm penetrates an egg, the DNA from both parents combines to create a unique human being. Even though this human being, known now as a **zygote**, is only one cell at first, it is a distinct living organism and is completely separate from its parents. This single cell begins to multiply immediately—from one to two to four to eight cells, and so on.

As the cells multiply within the zygote, the earliest stage of the human embryo, it continues to grow. It moves slowly through the fallopian tube toward the uterus, where it may implant into the lining of the uterus. The embryo will take approximately five days to reach the uterus, and it will be known as a **blastocyst** at this phase. The blastocyst is comprised of 70–100 cells. If **implantation** occurs, the pregnancy

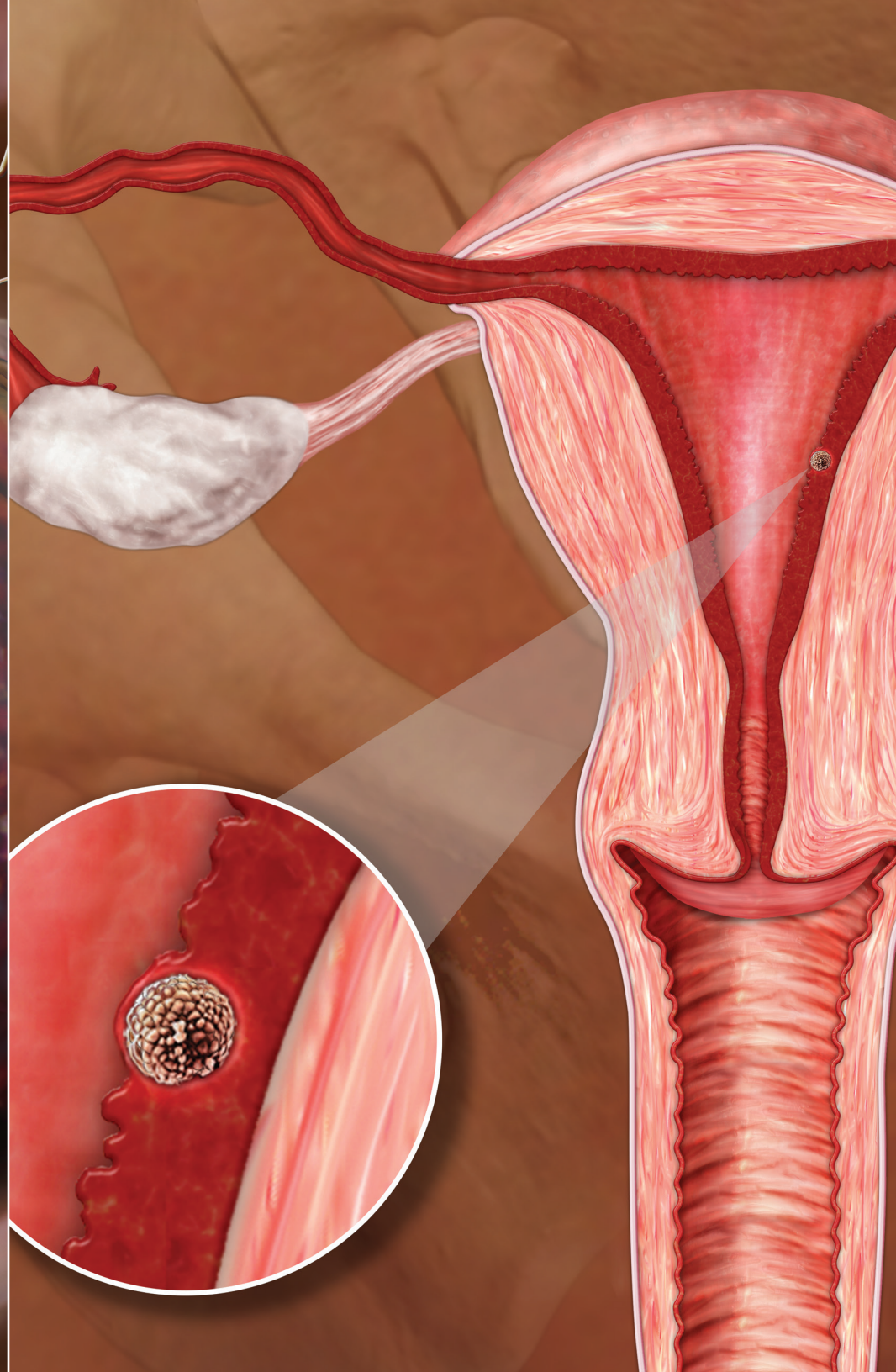
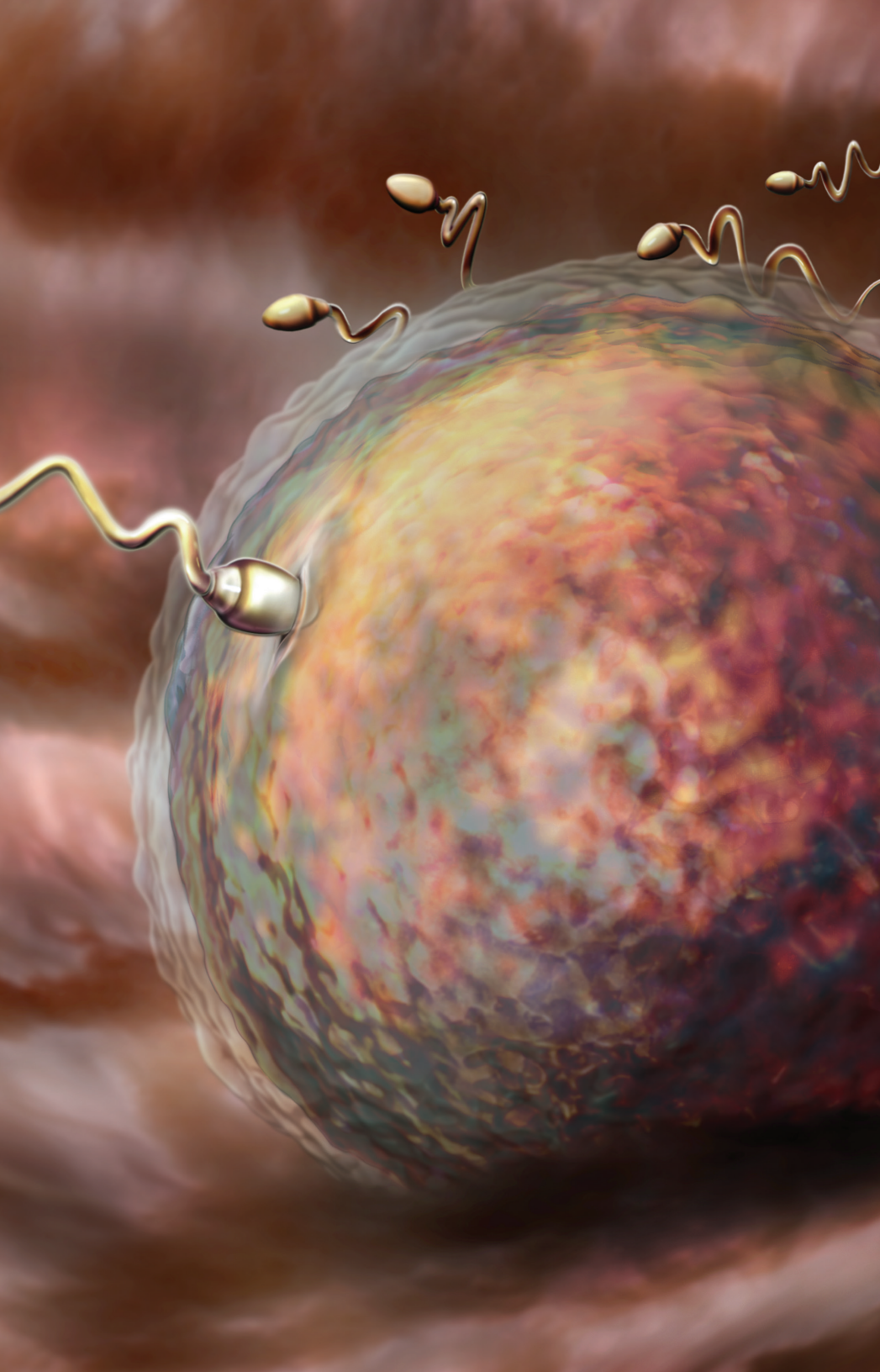
will continue unless interrupted. If implantation does not occur, the blastocyst will pass from the woman's body during menstruation, resulting in an early pregnancy loss.

For Further Discussion

- Under the right conditions and lighting, the human egg may be visible to the naked eye. The egg is about 100 times larger than a single sperm.
- Sperm, which are produced in the testicles, take about 70 days to reach maturity.
- The average number of sperm released during sexual intercourse ranges from 50 to 500 million.
- The tip of the sperm contains enzymes to break through the outer layer of the egg. Once the egg has received a single sperm, it immediately creates a barrier to prevent penetration by additional sperm.
- In addition to sperm, some other components of semen are fructose, enzymes, citric acid, free amino acids, prostaglandin, potassium, and zinc.



NOTES



IRREGULAR PREGNANCY

Blighted ovum

A **blighted ovum** (also known as an anembryonic pregnancy) is a pregnancy in which the blastocyst attaches to the uterine wall, but from which an embryo never develops. A blighted ovum occurs in the first trimester of pregnancy and is understood to occur when the early embryo dies, likely due to a chromosomal abnormality. The **trophoblast**, the outer cell layer of the newly formed embryo, continues to develop for several weeks.

Because the **placenta** can begin to develop even in the absence of an embryo, pregnancy tests may still show a positive result. The woman may even have common early-pregnancy symptoms such as nausea, fatigue, and sore breasts. Because there is no viable embryo, however, the pregnancy cannot continue and a miscarriage will invariably result from a blighted ovum, typically by the end of the first trimester. The miscarriage process will generally continue naturally, but the woman may choose medical intervention. Blighted ova are the cause of about 50% of first-trimester miscarriages.

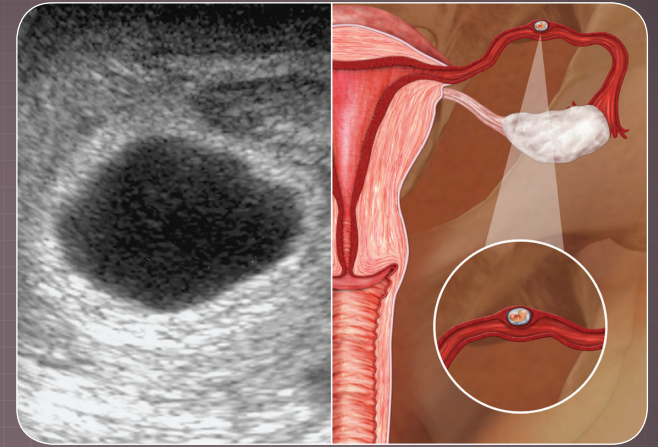
Ectopic Pregnancy

An ectopic pregnancy occurs when the embryo is prevented from reaching the uterus, often due to scarring or damage

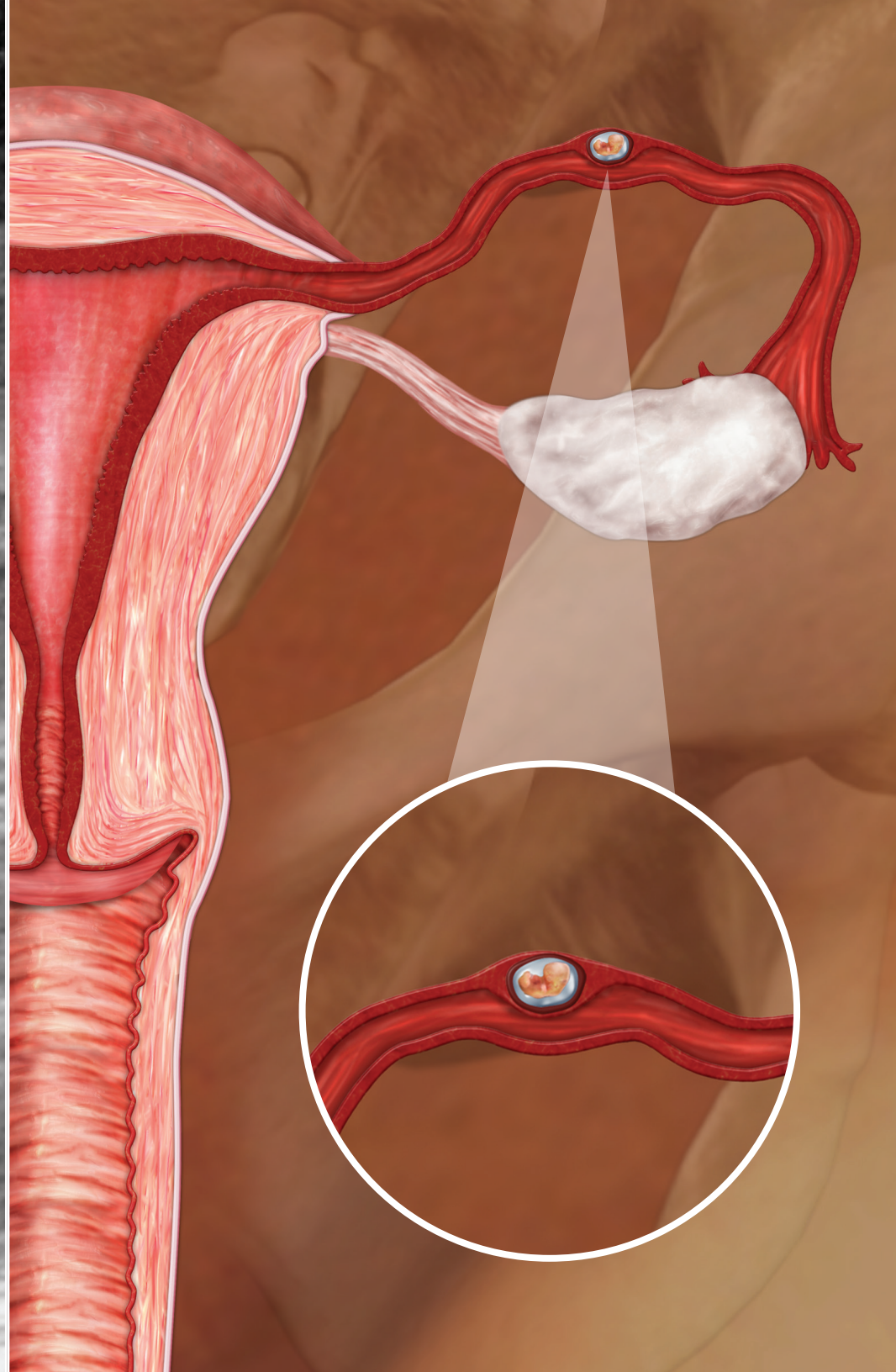
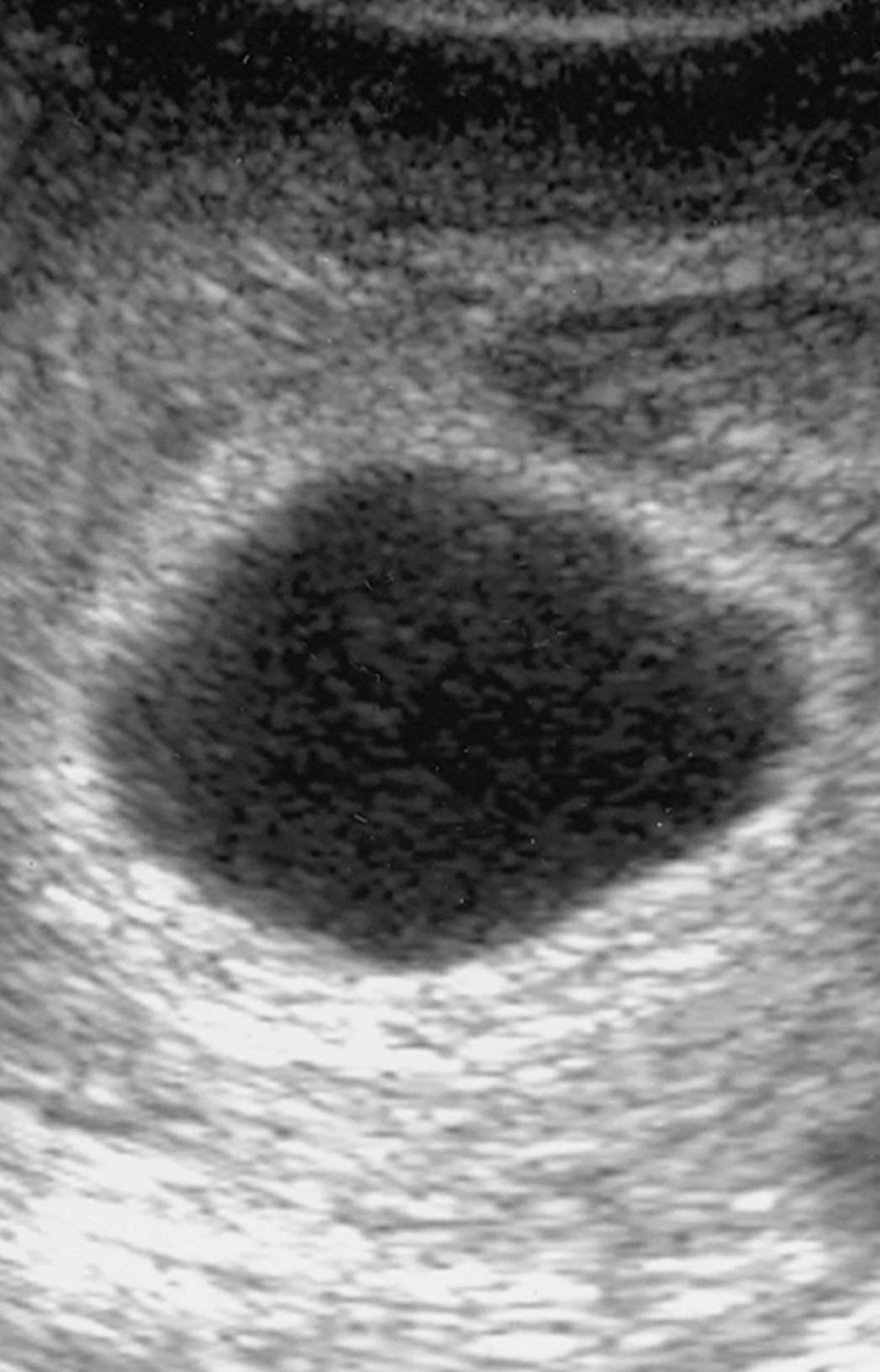
in the fallopian tube, and implants outside of the uterus. The most common type of ectopic pregnancy—over 95%—is a “tubal pregnancy,” when an embryo implants inside the fallopian tube. The remainder of ectopic pregnancies occur in the ovaries, cervix, or abdomen.

While ectopic pregnancies cannot be prevented, some risks factors can be minimized. Risks factors include: pelvic inflammatory disease (PID), use of an intrauterine device (IUD), smoking, tubal surgery, tubal ligation (female sterilization), or a previous ectopic pregnancy. Symptoms of an ectopic pregnancy include abnormal vaginal bleeding, pain in the lower abdomen, pain during urination, and nausea.

Ectopic pregnancies carry grave risks to the health of the mother, and it is not possible for the embryo to survive outside of the uterus. The most common complication is rupture of the fallopian tube, which can lead to internal hemorrhage and—if left untreated—death. Some ectopic pregnancies may end naturally without treatment. If the embryo is close enough to the opening of the fallopian tube, it may be ejected from the tube as it grows, then after the embryo dies the tissue is naturally absorbed into the woman’s body.



NOTES



MEDICAL ABORTION

What is medical abortion?

Medical abortions (sometimes known as chemical abortions) are induced through the use of drugs that are usually taken in pill form, though injections are sometimes used. These medicines work in various ways to bring about the death of the growing embryo or fetus. Medicines which result in the death of an embryo or fetus are known as abortifacients.

What medicines are used for medical abortion?

There are two primary drugs that are used to perform medical abortions, **mifepristone** and **misoprostol**. Mifepristone is the generic name of a drug that is known throughout the world as RU-486, Mifeprex, or Mifegyne. Misoprostol is the generic name of a drug that is known as Cytotec. Another drug less commonly used for medical abortion, **methotrexate**, is generally administered in conjunction with misoprostol.

When are medical abortions performed?

In the United States, the mifepristone/misoprostol is used through nine weeks (63 days) of **gestation**, though the drugs' effectiveness is somewhat diminished after seven weeks (49 days) of gestation. The methotrexate/misoprostol regimen is rarely used in the U.S. due to the

wide availability of mifepristone, but is generally used in other countries through nine weeks of gestation and sometimes beyond. *The misoprostol-only regimen is not an approved or regulated regimen in the United States.* Outside of the U.S. it is recommended by the World Health Organization for use through 24 weeks of pregnancy, but only where mifepristone is *not* available.

What are the side effects and complications of medical abortion?

Side effects include pain, cramping, vaginal bleeding, nausea, headache, dizziness, chills, hot flashes, shivering, fatigue, vomiting, diarrhea, chills, and fever. Complications include infection, excessive bleeding (hemorrhage) requiring transfusion, incomplete abortion (tissue remaining in the uterus), ongoing pregnancy requiring surgical abortion, and—rarely—death.



NOTES

Emergency contraception, otherwise known as the “morning-after pill”—and sold in the United States as *Plan B* or *ella*—has a possible, but unproven, abortifacient effect.

One of its purported mechanisms of action—generally referenced in prescribing information as “alterations to the endometrium” [or uterine lining]—is to prevent the implantation of a zygote.

If a zygote (an individual and distinct human being) were prevented from implanting in the uterine lining, an early abortion would result.

MIFEPRISTONE AND MISOPROSTOL



MISOPROSTOL



METHOTREXATE

MIFEPRISTONE/MISOPROSTOL REGIMEN

The mifepristone/misoprostol regimen of medical abortion may include two or three visits to the abortion facility. On the first visit, the clinician will confirm the gestational age of the embryo and will administer mifepristone pills. Mifepristone blocks a vital pregnancy hormone called **progesterone**. When progesterone is blocked, the lining of the uterus degenerates and the developing embryo detaches from the uterus.

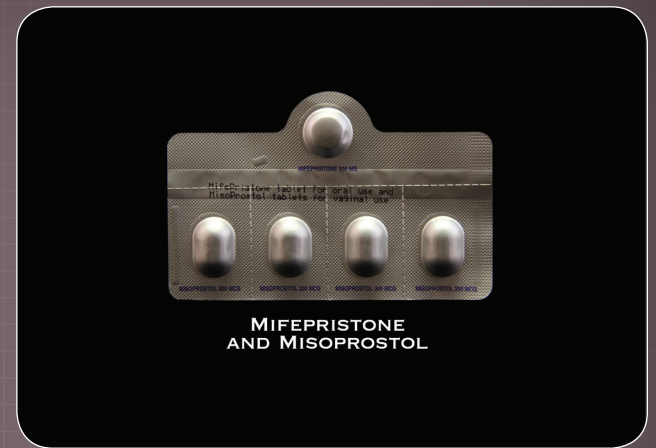
On the second visit, about two days after the first, the clinician will administer misoprostol, unless a complete abortion has already occurred due to the mifepristone. The misoprostol will be taken in pill form, but the pills can be swallowed, placed between the cheek and gum, or inserted into the vagina.

About two weeks after the second visit, the woman will return to the facility a third time to ensure that the abortion has been completed. If the abortion is incomplete, meaning that the embryo has died but has not been expelled, the clinician may recommend that the woman continue to wait for the abortion to complete, or the clinician may recommend a vacuum-aspiration abortion. If the pregnancy is ongoing, meaning that the embryo is still alive, a vacuum-aspiration abortion will

be strongly recommended because mifepristone and misoprostol can both cause severe birth defects.

For Further Discussion

- In about 5% of cases, mifepristone alone is sufficient to cause an abortion.
- After the regimen has begun, the embryo may be expelled from the uterus at any time. The embryo may or may not be recognizable among the other expelled tissue and blood.
- Vaginal administration of misoprostol generally results in a complete abortion sooner than oral administration.
- About two-thirds of women will have a complete abortion within four hours of misoprostol administration, and 75% of women will have aborted within 24 hours.
- Women should expect vaginal bleeding for approximately 9–16 days on average after this regimen.
- Passage of blood clots during a medical abortion is common.



NOTES

Medical regimens will vary by country and by region. Some of the drugs that are used for abortion are often widely available at a low cost, which may encourage some women to self-administer, with or without the involvement of a physician, or another individual such as a midwife.



MIFEPRISTONE AND MISOPROSTOL

METHOTREXATE/MISOPROSTOL REGIMEN

The methotrexate/misoprostol regimen of medical abortion will require three or four visits to the abortion facility. On the first visit, the clinician will confirm the gestational age of the embryo and will administer the methotrexate, most commonly as an injection, but sometimes in pill form. The clinician will also counsel the pregnant woman to undergo a surgical abortion procedure in the event that the medical abortion is unsuccessful, due to the birth defects commonly caused by methotrexate and misoprostol. During this visit the clinician will provide the pregnant woman with a dose of misoprostol and instructions for self-administration within the following several days. The misoprostol will be taken in pill form, but the pills can be swallowed, placed between the cheek and gum, or inserted into the vagina.

On the second visit, about one week later, the clinician will examine the patient to determine if the abortion has been completed. If no **gestational sac** is observed, the abortion is complete. If a gestational sac is observed during this exam, another dose of misoprostol will be given, to be taken either at the facility or later at the patient's home.

One week later, at the third visit, another examination will be performed. If a heartbeat is observed, a vacuum-aspiration

abortion will be recommended. If the gestational sac is present, but the embryo has died, a follow-up appointment will be scheduled for approximately three weeks from this date, during which time the embryo may yet be expelled from the uterus.

During a potential fourth visit, if the abortion is still not complete and the gestational sac remains, a vacuum-aspiration abortion will be recommended. The abortion will not be considered complete until the gestational sac is expelled or has been removed via vacuum aspiration.

For Further Discussion

- About two-thirds of women will have a complete abortion within one week of a single misoprostol dose.
- With a second dose, 80–85% of patients will have a complete abortion within two weeks.
- After the regimen has begun, the embryo may be expelled from the uterus at any time. The embryo may or may not be recognizable among the other expelled tissue and blood.
- Women should expect vaginal bleeding for approximately 14–21 days after this regimen.



NOTES



METHOTREXATE



MISOPROSTOL

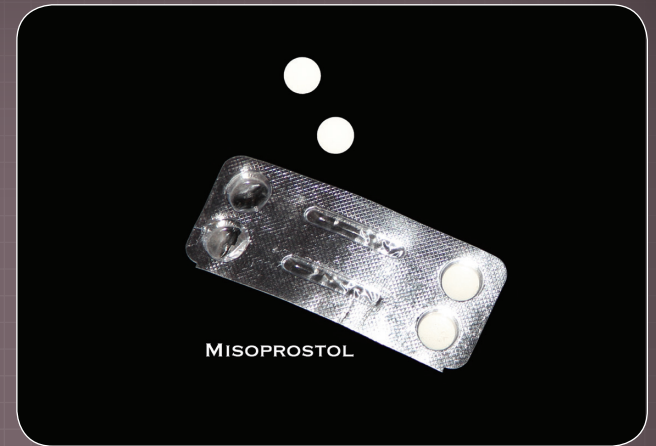
MISOPROSTOL-ONLY REGIMEN

The optimal regimen for misoprostol abortion is the vaginal administration, near the cervix, of the pills. Placing the pills in the mouth, between the cheek and gum or under the tongue, is also an effective form of administration. A second equal dose of misoprostol will be administered 24 hours after the first.

Uterine cramping and vaginal bleeding will usually start within several hours of taking misoprostol, and bleeding will typically last between 7–10 days. Many women will pass blood clots, and the embryo can sometimes be observed within the expelled tissue and blood.

For Further Discussion

- Misoprostol can cause severe birth defects in children when abortion does not occur after administration, and the pregnancy is carried to term. A surgical abortion would be strongly recommended by the abortion provider if misoprostol does not result in a complete abortion.
- Misoprostol is inexpensive, stable at room temperatures (even in hot climates), and easy to transport and administer. Consequently it is used to expand medical abortion access in poor and developing countries.
- Misoprostol is readily available in over 100 countries and can be easily obtained for low cost via mail, telephone, or over-the-counter orders.
- Misoprostol is registered for use in preventing gastric ulcers. Its use for abortion induction is considered “off-label” by being used for a purpose other than the one for which it is approved.



NOTES

In the United States, misoprostol is only approved by the FDA for use in conjunction with mifepristone. It is *not* approved for use alone, and any such use is considered “off-label,” meaning it is not recommended for such use by the manufacturer, and would not be prescribed alone by a physician to induce an abortion.



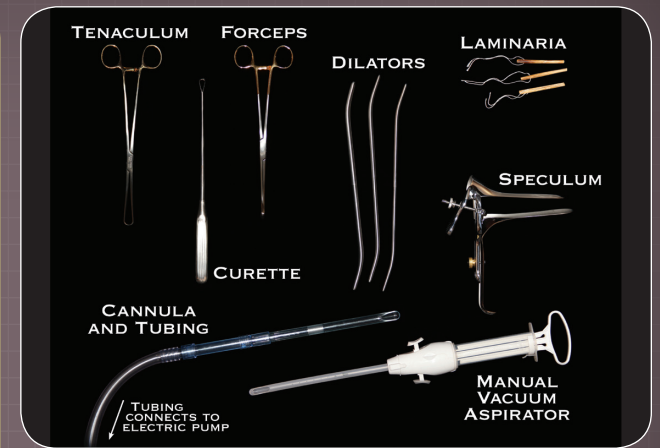
MISOPROSTOL

SURGICAL ABORTION

What is surgical abortion?

Surgical abortion is a form of abortion in which the embryo is removed from the uterus using surgical methods.

The four primary methods of surgical abortion are vacuum aspiration, dilation and curettage, dilation and evacuation, and instillation (or saline) abortion.



NOTES

TENACULUM



FORCEPS



DILATORS



LAMINARIA

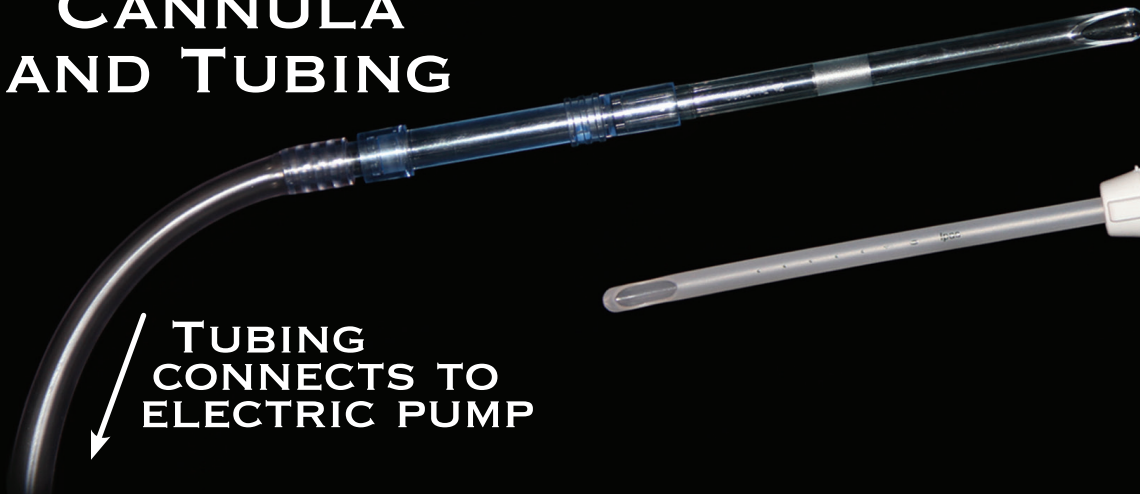


CURETTE

SPECULUM

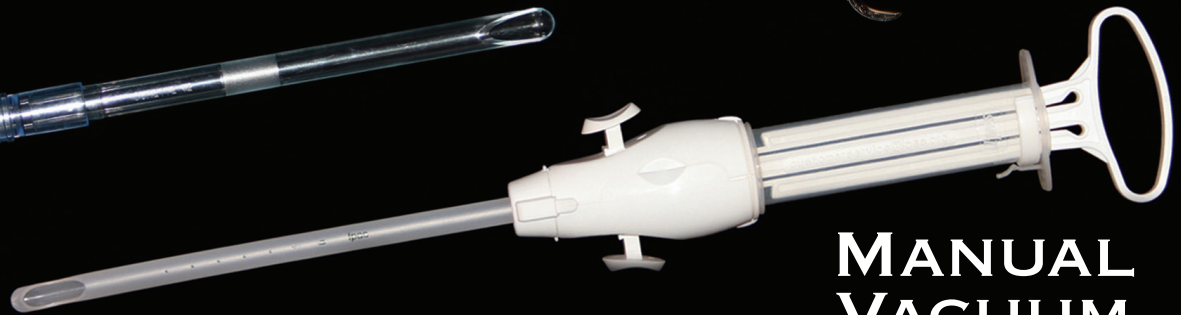


**CANNULA
AND TUBING**



TUBING
CONNECTS TO
ELECTRIC PUMP

**MANUAL
VACUUM
ASPIRATOR**



CERVICAL DILATION FOR SURGICAL ABORTION

Why does the cervix need to be dilated before a surgical abortion?

During pregnancy, the cervix is tightly closed unless the woman is in labor. In order to gain access to the uterus, the cervix will need to be dilated, or made wider. (As an alternative to cervical dilation, the cervix may be softened and prepared for a surgical abortion with drugs, taken orally or as a vaginal suppository.)

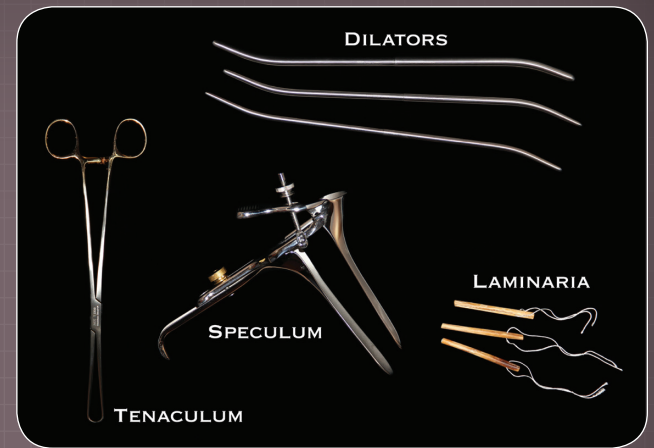
How will a pregnant woman be prepared for her cervix to be dilated?

Before cervical dilation, the woman will likely get medicine for pain, and may be offered a sedative drug to relax and calm her, especially if the abortion procedure immediately follows the cervical dilation. **Antibiotics**, if available, may also be given to prevent infection.

How is the cervix dilated?

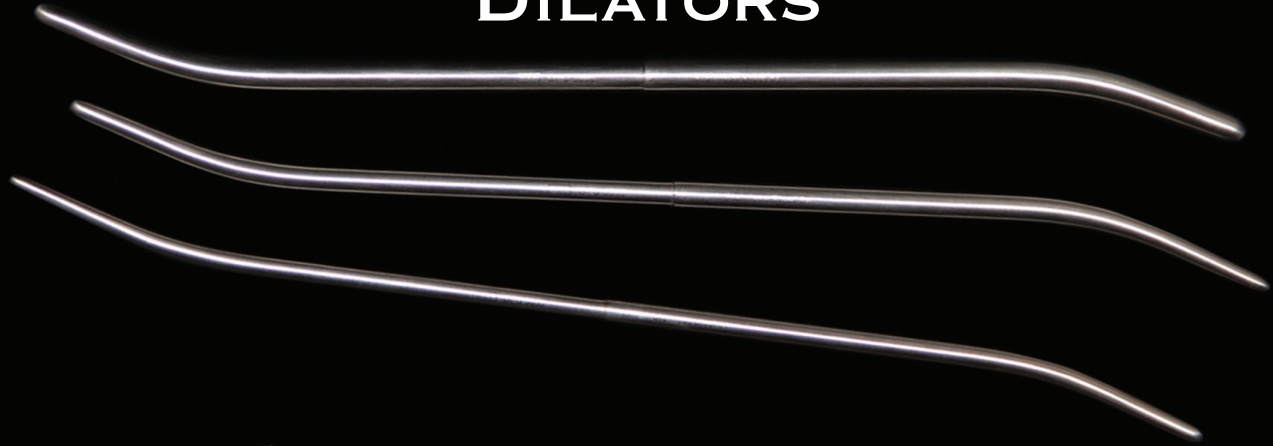
To dilate the cervix, the clinician will use **dilators**, made of stainless steel or plastic, or **osmotic dilators**. Synthetic or natural osmotic dilators—commonly known as **laminaria**—may be used. Prior to dilation, a **speculum** will be inserted into the vagina in order for the clinician to observe the cervix and to provide access for the dilation device and other instruments. At this point, prior to dilation, a numbing medication

may be placed into or near the cervix. A **tenaculum** may be used to grip the cervical opening and hold it in place during the procedure.



NOTES

DILATORS



TENACULUM



SPECULUM

LAMINARIA



CERVICAL DILATION

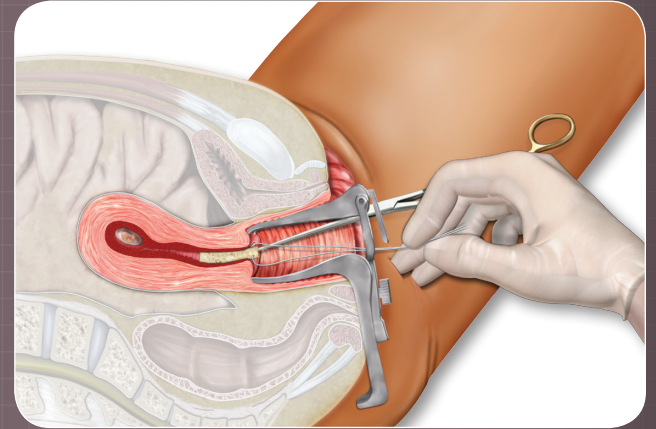
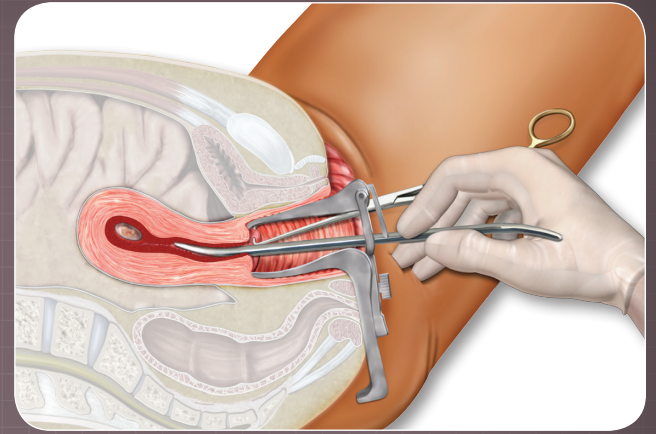
Cervical dilation using dilators

After preparation, the cervix will be slowly dilated by inserting the thinnest probe into the cervical opening. Probes of increasing thickness will be individually inserted until the necessary dilation is achieved.

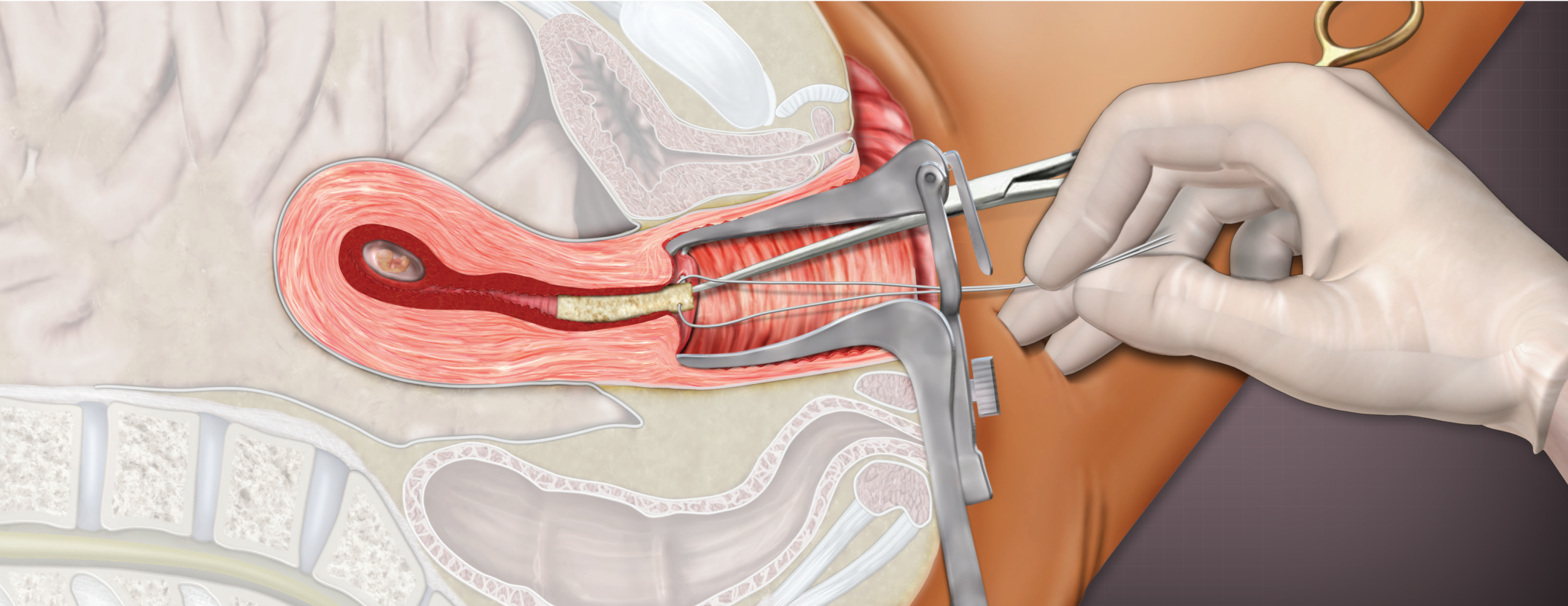
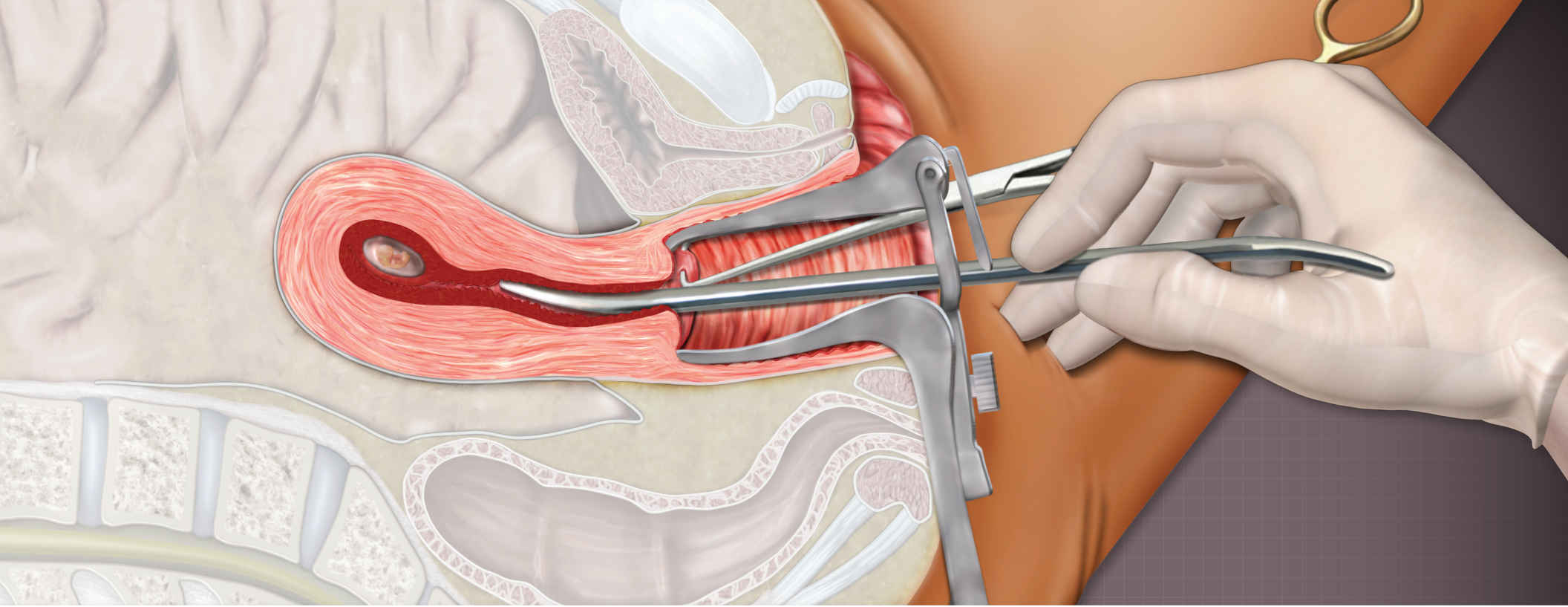
Cervical dilation using laminaria

After preparation, one or more laminaria rods, available in different diameters, will be inserted into the cervical opening. These rods will absorb fluid and swell, resulting in dilation of the cervix. Fluid absorption will happen gradually, so the rods must be inserted into the cervix

several hours (and up to one day) before the abortion procedure can be performed.



NOTES



VACUUM ASPIRATION

What is vacuum aspiration?

Vacuum aspiration is a method of surgical abortion in which the contents of the uterus, including the embryo, are removed using a plastic or metal **cannula** attached to a suction device. Suction is accomplished by using either a handheld syringe, known as an **aspirator**, or an electric pump. Abortions using a handheld syringe are known as manual vacuum aspiration, or MVA. Abortions using an electric pump are known as electric vacuum aspiration, or EVA.

When are vacuum-aspiration abortions performed?

Both MVA and EVA abortions are generally performed until the 14th week of gestation, after which point the fetus's size and development require the use of additional instruments to dismember it in order to remove it from the uterus.

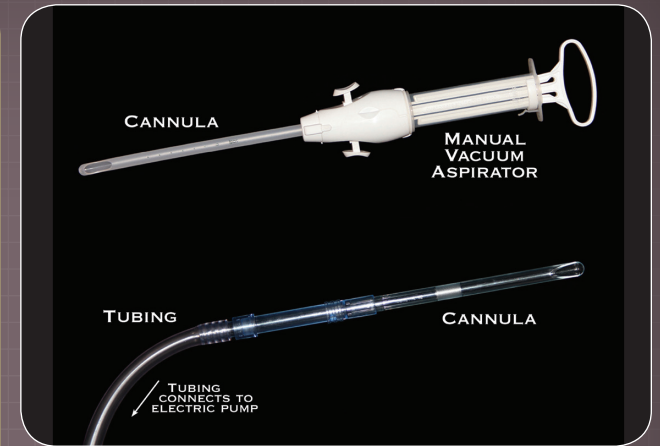
When done without confirmation of an existing pregnancy, the vacuum-aspiration procedure may be known as **menstrual extraction**, menstrual regulation, or menstrual aspiration. Menstrual extraction may be used to minimize menstruation, even without an existing pregnancy.

Unless the contents of the aspirator are inspected for signs of pregnancy, it will be

unknown whether or not an abortion has taken place.

What are the side effects and complications of vacuum aspiration?

Side effects include pain, cramping, vaginal bleeding, diarrhea, and the nausea and vomiting generally associated with anesthesia use. Complications include infection, excessive bleeding (hemorrhage), cervical injury, incomplete abortion, uterine perforation, anesthetic complications, and ongoing pregnancy.

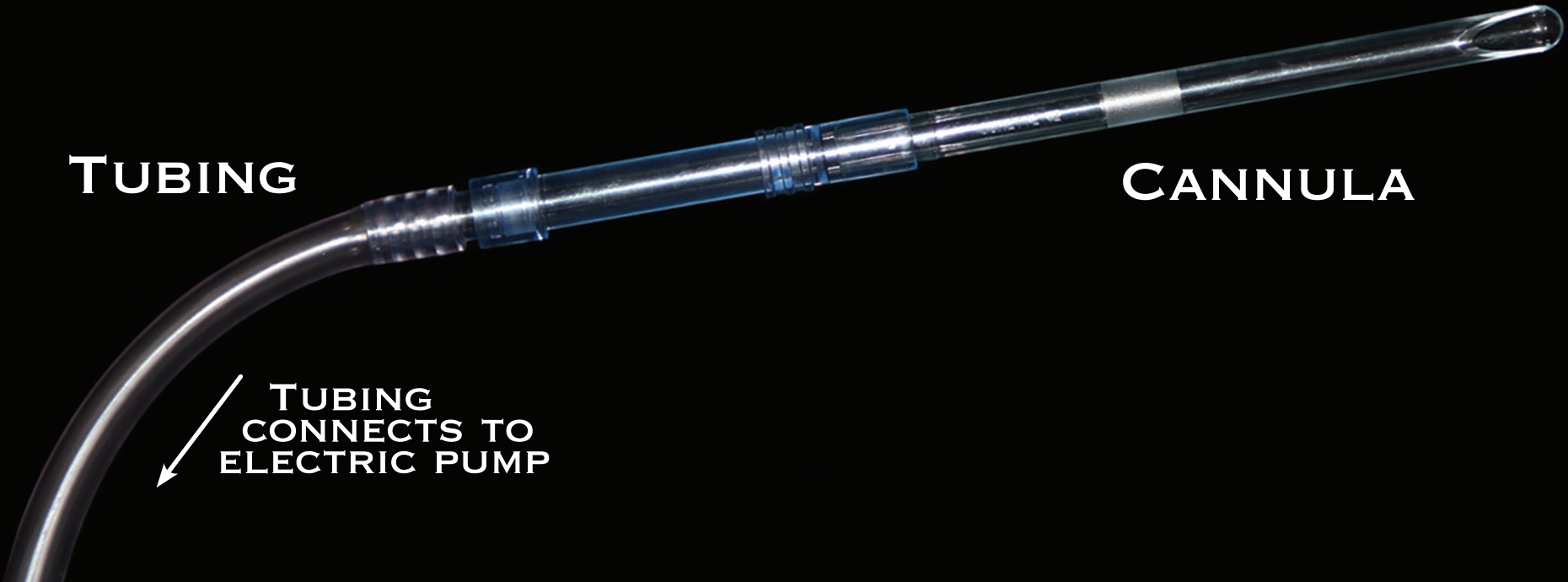


NOTES



CANNULA

**MANUAL
VACUUM
ASPIRATOR**



TUBING

CANNULA

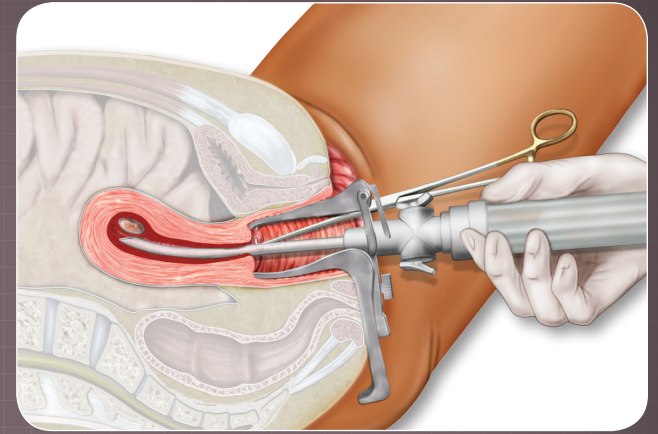
**TUBING
CONNECTS TO
ELECTRIC PUMP**

VACUUM ASPIRATION

Manual vacuum aspiration

After sufficient cervical dilation is achieved, the clinician will insert a cannula into the uterus through the dilated cervix. The other end of the cannula will then be connected to a large, handheld syringe called an aspirator. Suction will then be initiated with the aspirator, and a vacuum is created

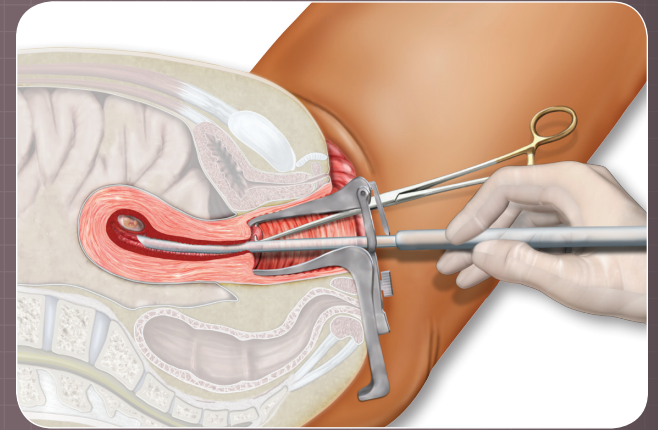
within the uterus. The gestational sac, embryo, placenta, and uterine lining are all vacuumed from the uterus, through the cannula, into the aspirator cylinder. The clinician or assistant will inspect the contents of the aspirator cylinder to ensure that the uterus has been completely emptied.



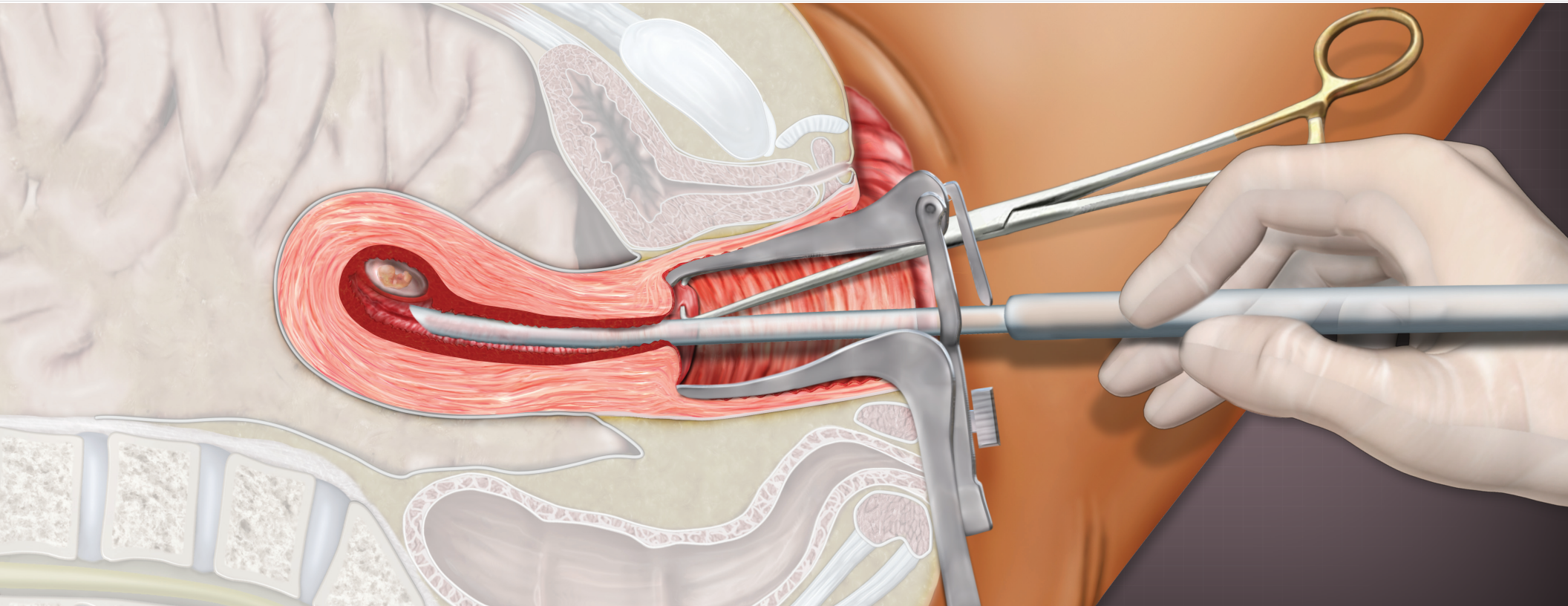
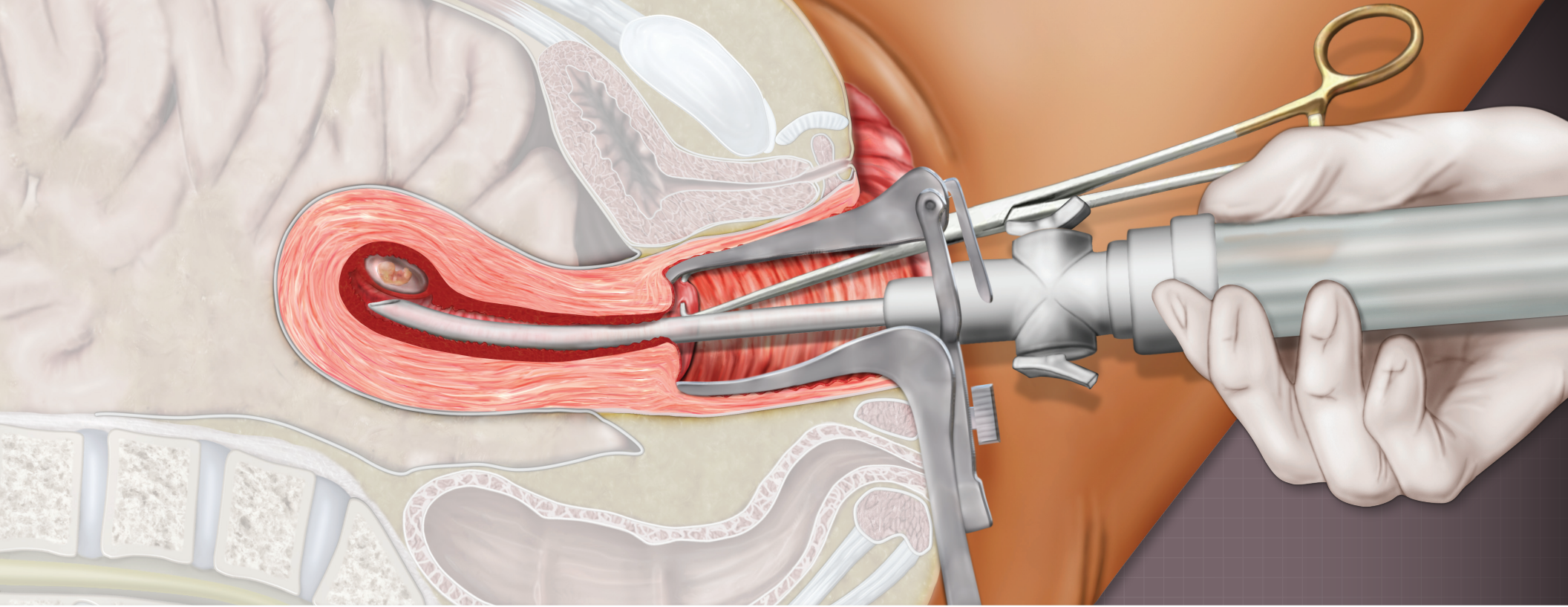
Electric vacuum aspiration

After sufficient cervical dilation is achieved, the clinician will insert a cannula into the uterus through the dilated cervix. The other end of the cannula will be attached to a tube which is connected to an electric pump. Once the cannula is in its proper position within the uterus, the pump is turned on, suction is applied, and

a vacuum is created within the uterus. The gestational sac, embryo, placenta, and uterine lining are all vacuumed from the uterus, through the cannula, into a collection jar. The clinician or assistant will inspect the contents of the collection jar to ensure that the uterus has been completely emptied.



NOTES



DILATION AND CURETTAGE / DILATION AND EVACUATION

What are dilation and curettage and dilation and evacuation?

Dilation and curettage (D&C) and dilation and evacuation (D&E) are methods of surgical abortion in which the contents of the uterus, including the embryo/fetus, are removed using surgical instruments. Vacuum aspiration is often also used as the final step of D&C/D&E procedures to ensure that the uterus is completely empty.

What instruments are used during these procedures?

These procedures differ from vacuum-aspiration procedures in their use of additional instruments: a **curette** and **forceps**. A curette is a loop-shaped, sharp-edged surgical instrument used to remove tissue from the uterus. A forceps is a surgical instrument, resembling pincers or tongs, which is used to grasp and hold objects.

What is curettage?

Curettage is a medical term referring to the scraping of the inside of the uterus. Vacuum-aspiration abortion is a form of curettage, in which a cannula—connected to a suction device—is used to scrape the uterus. In the case of dilation-and-curettage abortion, a curette is used. The scraping action of the two devices is the same, but the instrument is different.

Because the curette edge is considerably sharper than the blunt-tipped cannula, a D&C runs a higher risk of injury to the cervix and uterus than vacuum-aspiration procedures.

What is the difference between D&C and D&E?

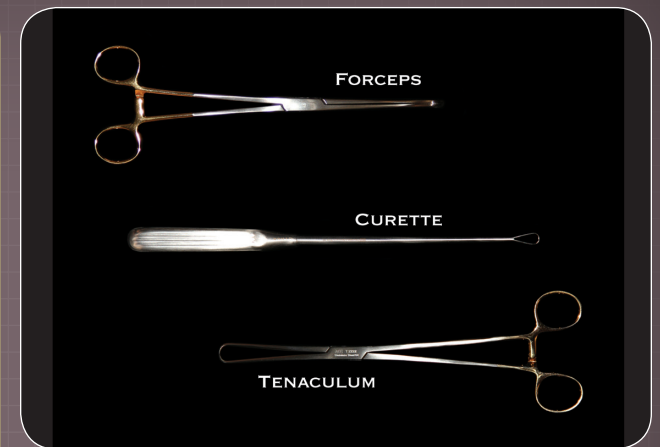
The primary difference between these two procedures is the use of a forceps. If a curette is used, the procedure will be called D&C. If a forceps is used, *with or without a curette*, the procedure will be called D&E. Forceps may be necessary to grasp and remove the more fibrous body tissues and harder bones of a further developed fetus.

When are D&C and D&E abortions performed?

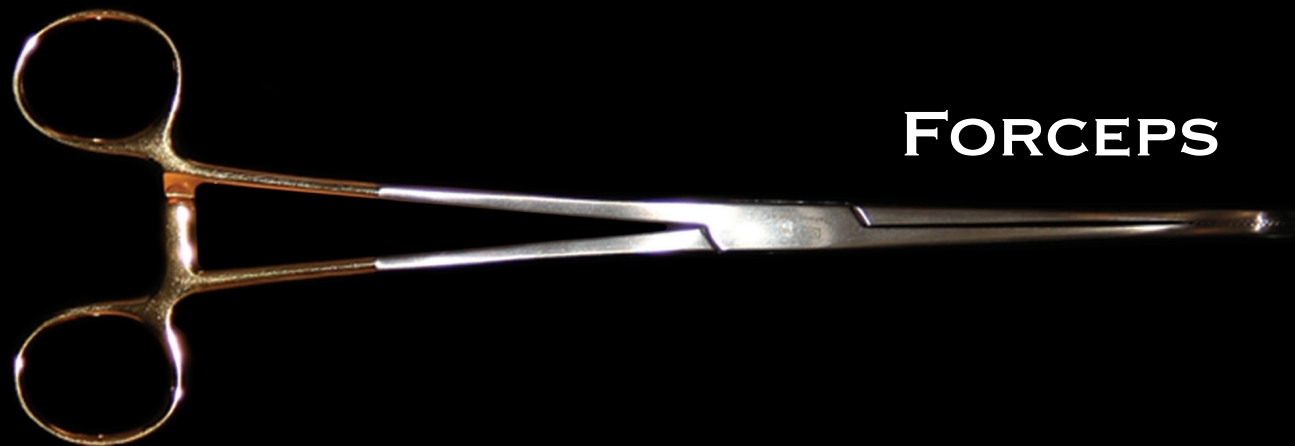
D&C abortions are generally performed until the 14th week of gestation, after which point D&E instruments may be required.

What are the side effects and complications of these procedures?

Side effects include vaginal bleeding, cramps, nausea, vomiting, and feeling faint. Complications include infection, blood clots, injury to the cervix or uterine lining, perforation of the uterus, hemorrhage (moderate to severe internal bleeding), and incomplete abortion.



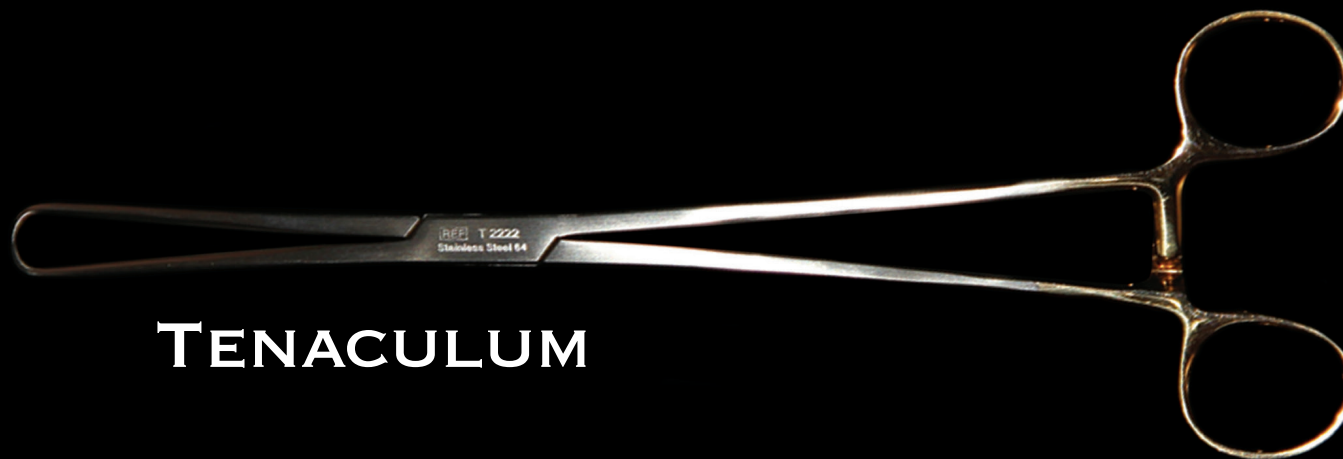
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FORCEPS



CURETTE

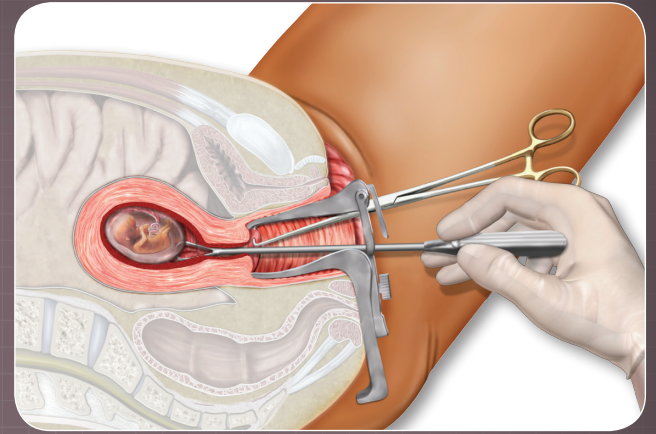


TENACULUM

DILATION AND CURETTAGE (D&C)

Curettage

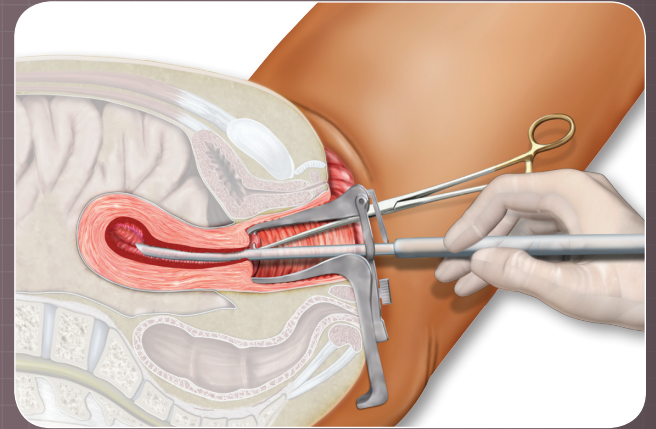
After sufficient cervical dilation is achieved, the clinician will insert a curette, or loop-shaped tool, into the uterus through the dilated cervix. The curette is used to scrape out the uterine cavity and remove all of its contents: embryo, lining, placenta, tissue, etc.



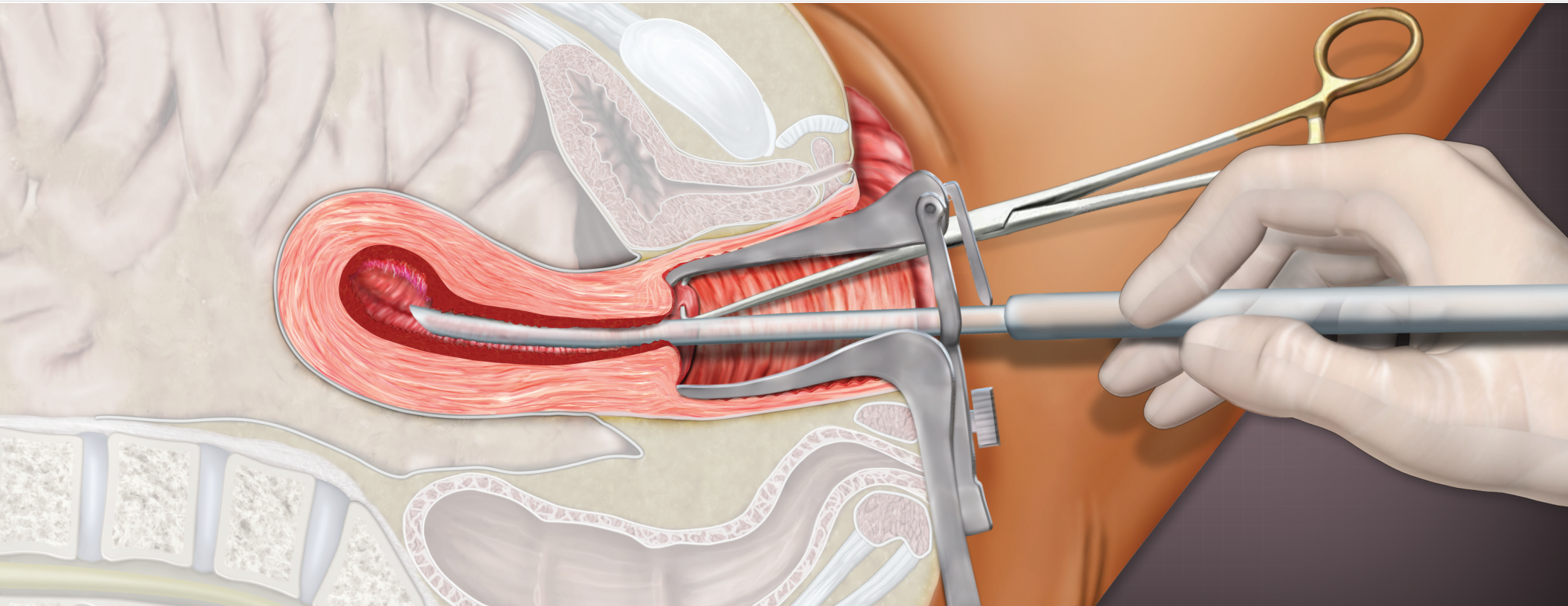
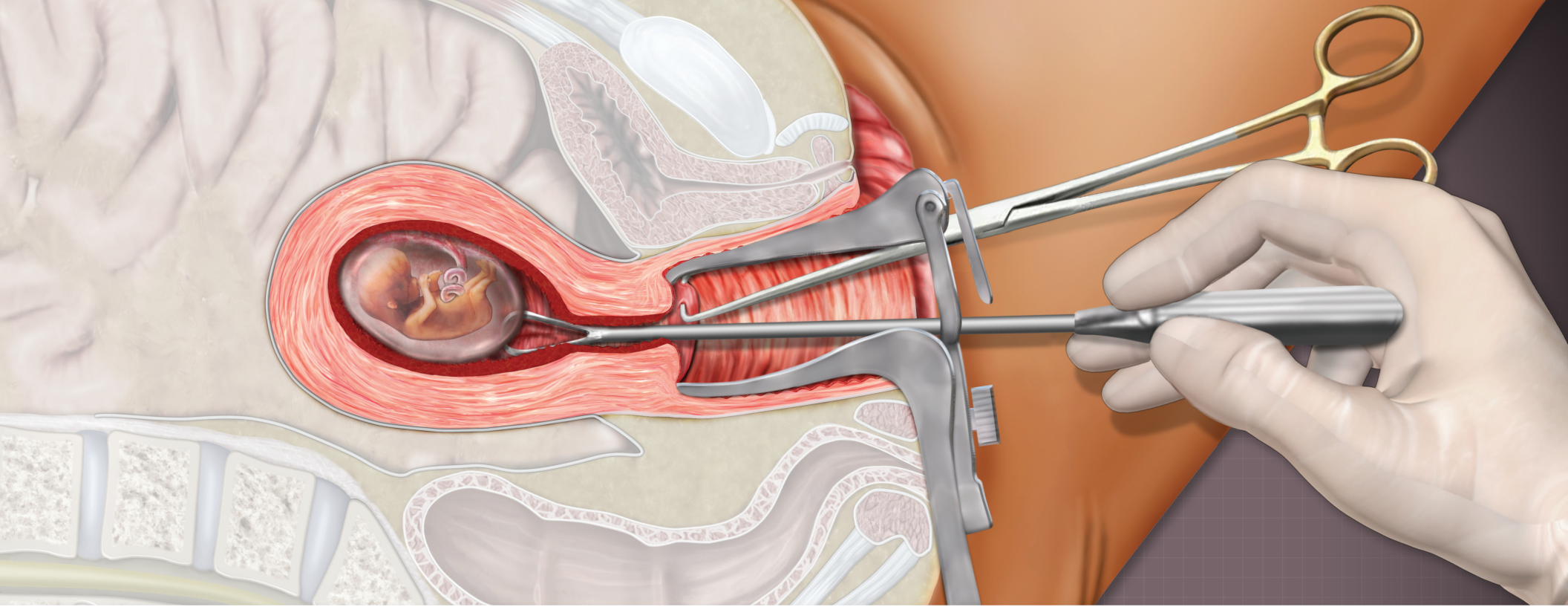
Aspiration

After the uterus is emptied of most contents, the clinician may choose to use suction aspiration to complete the abortion. The clinician will insert a cannula into the uterus through the dilated cervix. The other end of the cannula will be connected to either an electric pump or a large, handheld

syringe called an aspirator. Suction will be initiated, and a vacuum will be created within the uterus. The remaining blood and tissue will be vacuumed from the uterus, through the cannula, into the aspirator cylinder or collection jar, at which point all of the collected tissues will be inspected to ensure that nothing is remaining inside the uterine cavity.



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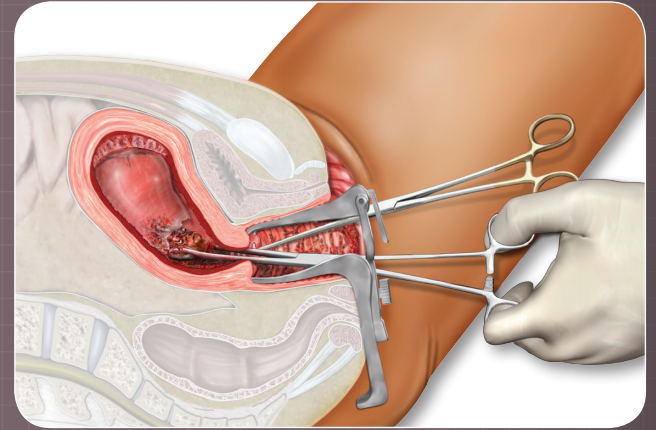
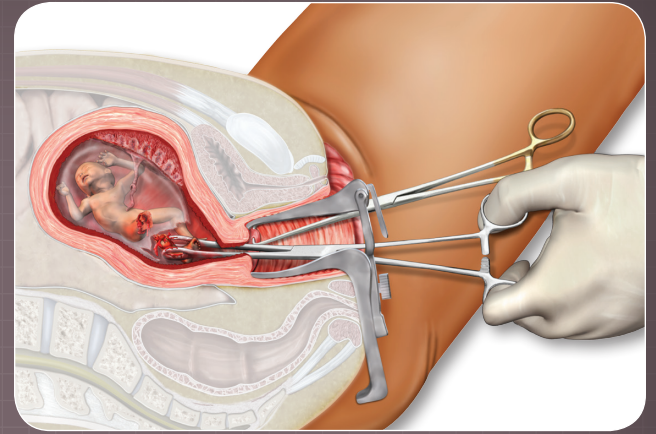


DILATION AND EVACUATION (D&E)

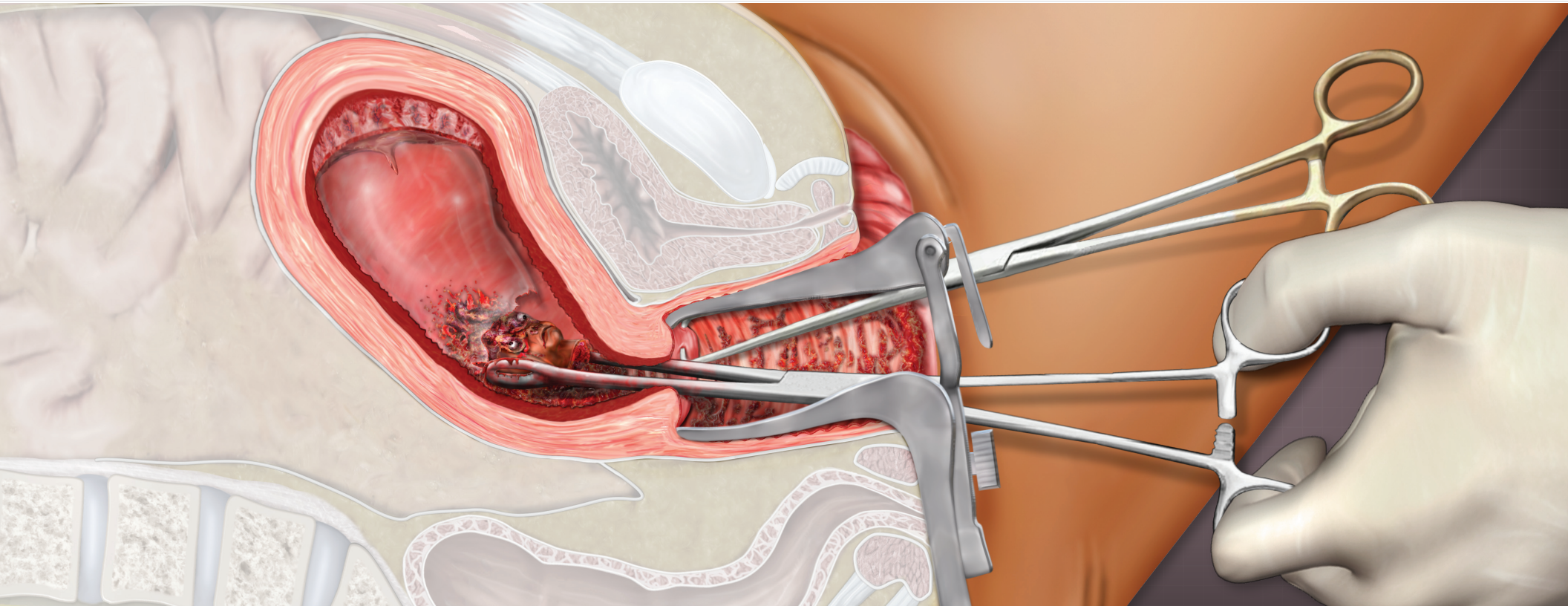
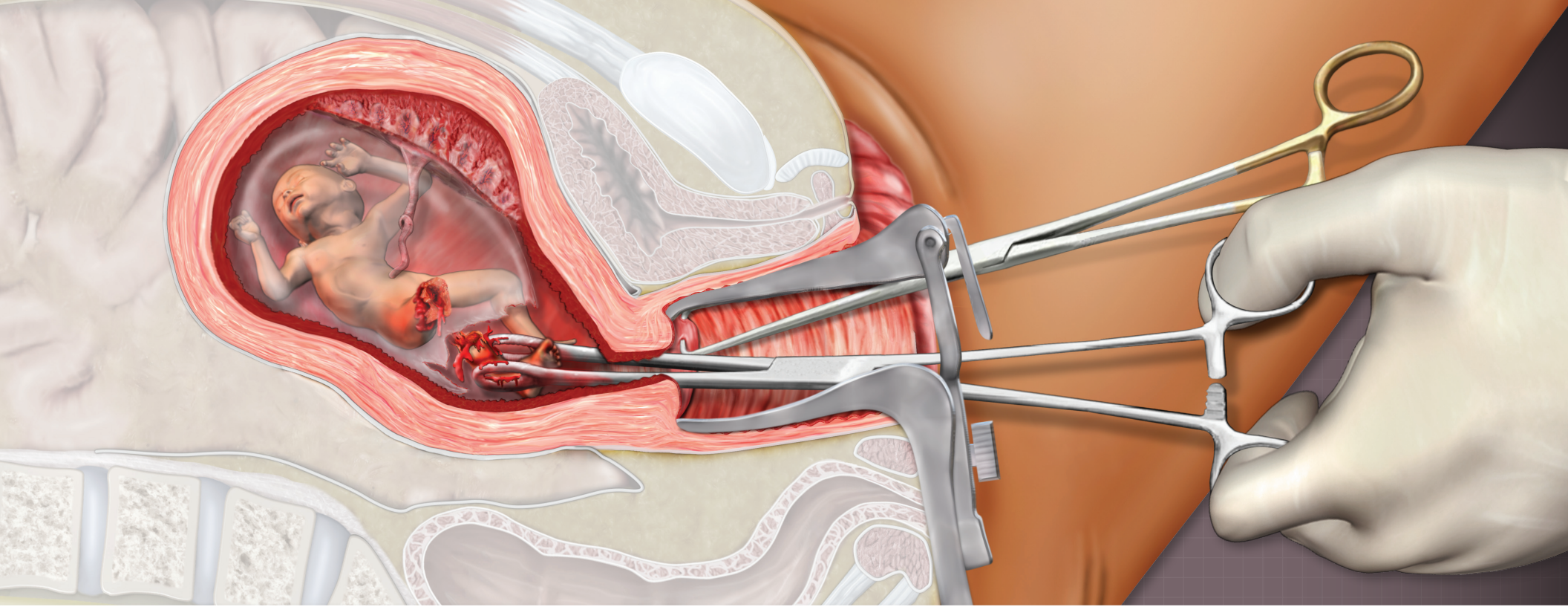
Dismemberment

After sufficient cervical dilation is achieved, the clinician will insert a forceps into the uterus through the dilated cervix. He will use the forceps to dismember the embryo into small enough pieces to pass safely out of the uterus. Pulling on the embryo while it is lodged against the cervix may provide enough force to

remove the individual body parts, but he may need to use compression along with twisting motions to dismember the embryo.



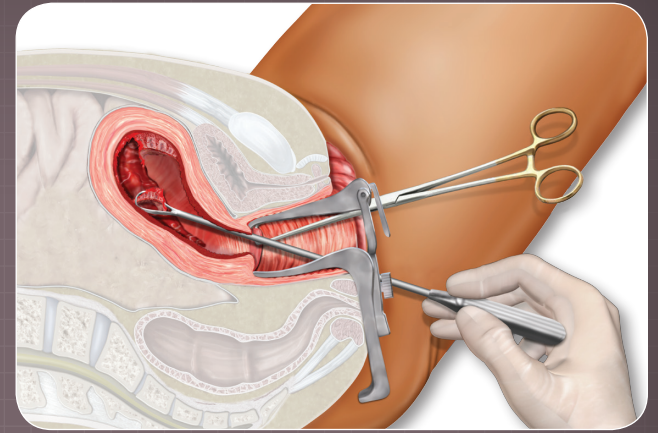
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DILATION AND EVACUATION (D&E)

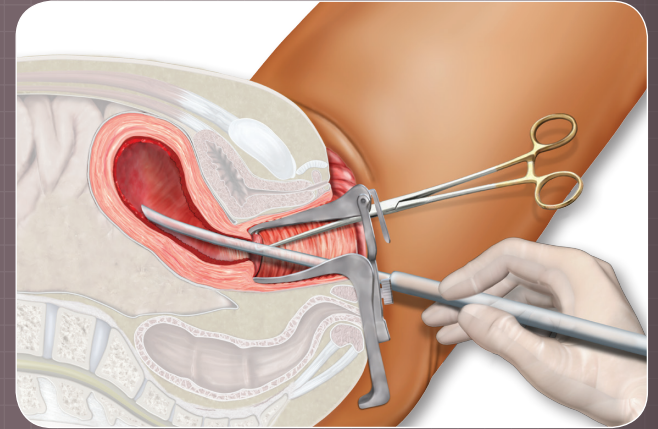
Curettage

After the fetus is removed from the uterus, the clinician will insert a curette, or loop-shaped tool, into the uterus through the dilated cervix. The curette is used to scrape out the uterine cavity and remove all of the remaining tissue: smaller body parts, lining, placenta, tissue, etc.

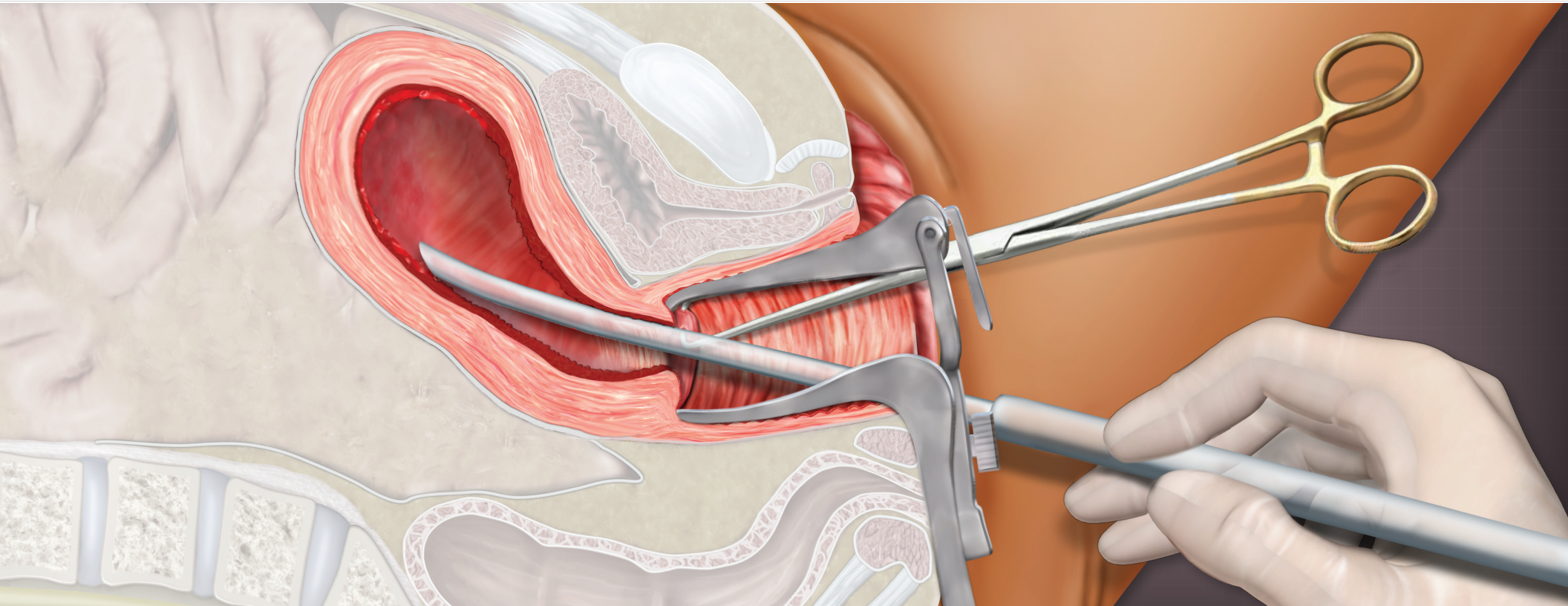
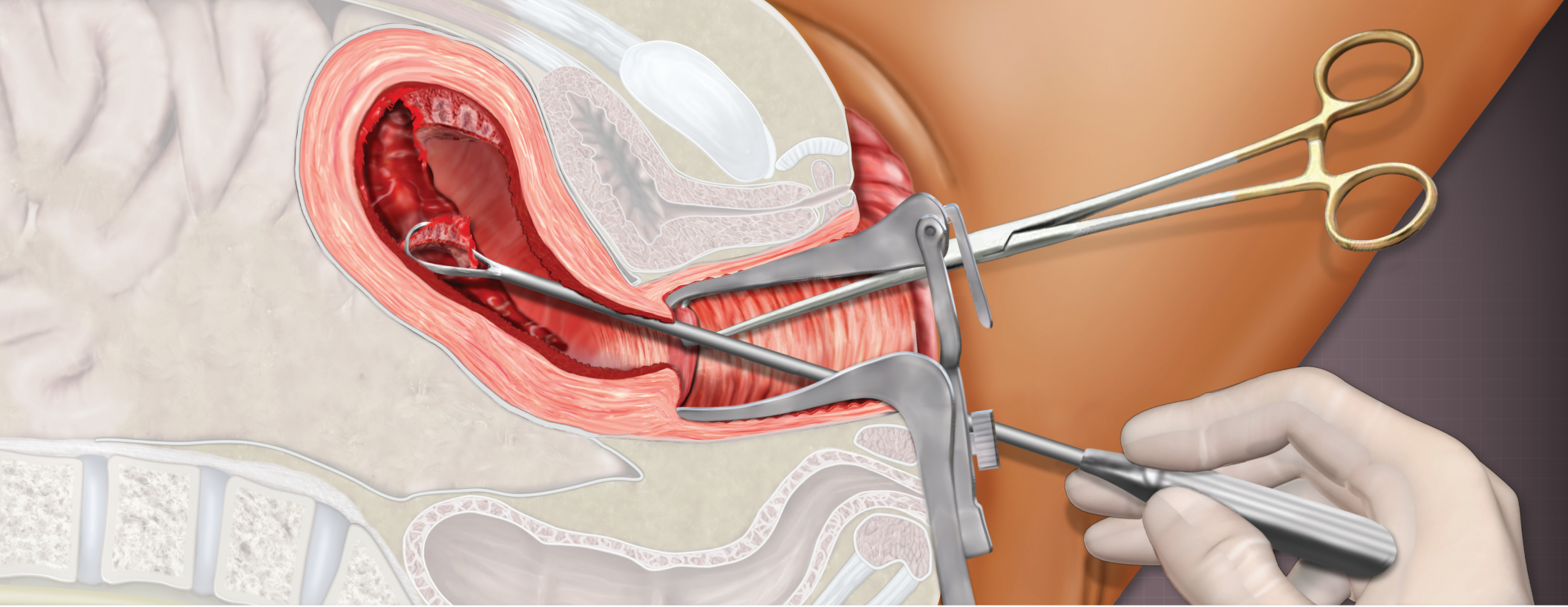


Aspiration

The final step of a D&E abortion is often the use of vacuum aspiration to ensure that all tissue has been removed from the uterine cavity. When the procedure has been completed, the clinician or assistant will inspect the removed contents to ensure that no tissue or body parts have been left inside the uterus.



NOTES



INSTILLATION ABORTION

What is instillation abortion?

Instillation abortion, commonly known as saline abortion, is a procedure in which a chemical solution is injected through the abdomen of the pregnant woman into the amniotic sac, the membranes that surround and protect the developing embryo. The most commonly used solutions for these procedures include saline, hyperosmolar urea, and synthetic prostaglandins.

When are instillation abortions performed?

Instillation abortions, though increasingly rare, are generally performed in the second and third trimesters.

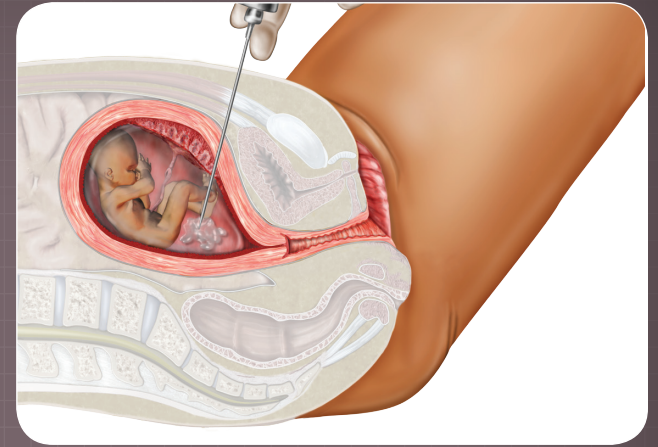
What are the side effects and complications of instillation abortion?

Side effects include pain, cramping, vaginal bleeding, fever, nausea, headache, and dizziness. Complications include hemorrhage, infection, accidental injection of solution into the mother's bloodstream, and damage to the uterus during the injection procedure.

What happens during an instillation abortion?

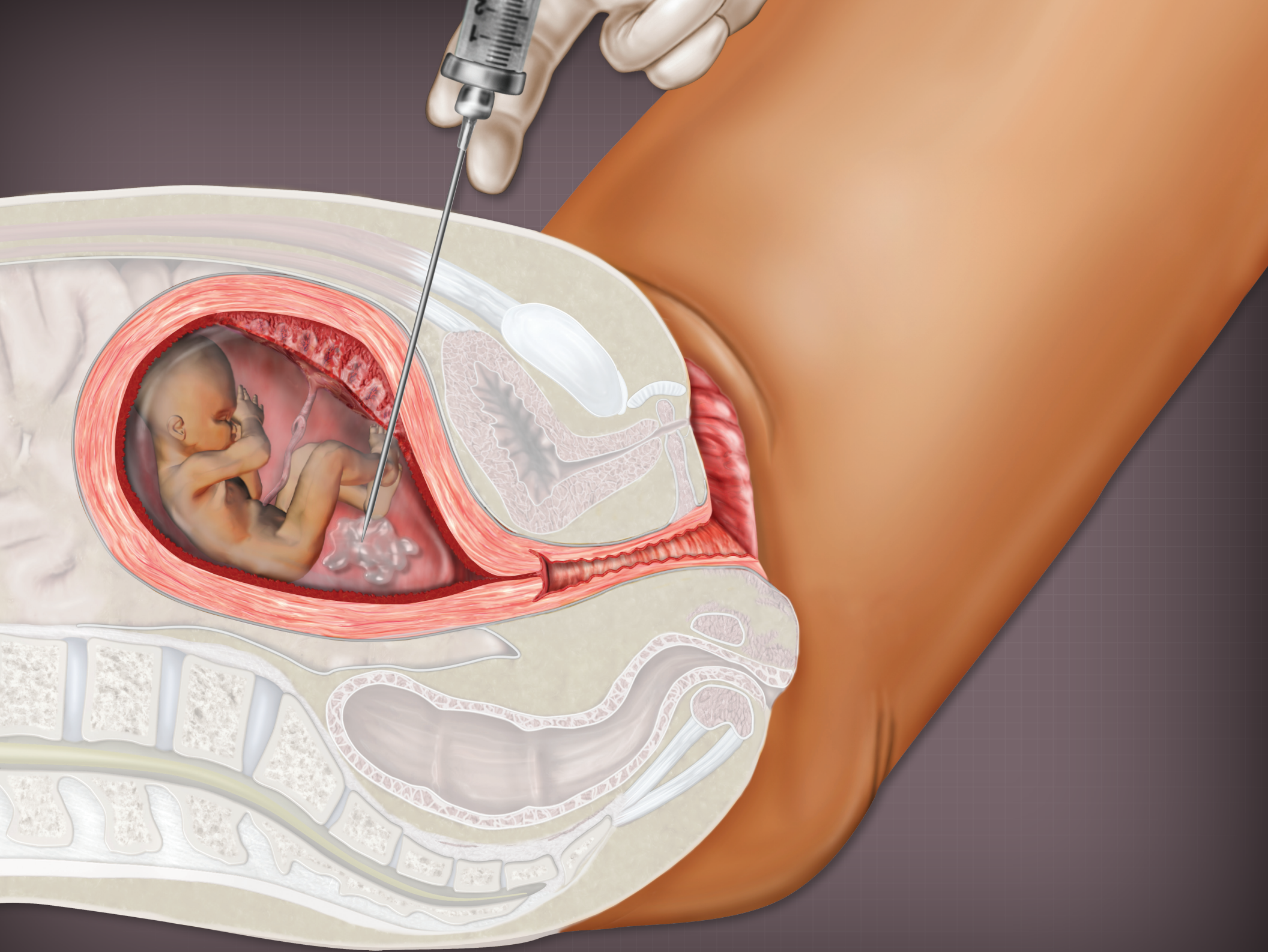
Because the embryo inhales, ingests, and is surrounded by amniotic fluid at all times, the embryo draws in the chemical

solution that has been injected into the amniotic sac and is poisoned. The solution will also burn the embryo's skin.



NOTES

Instillation abortions have become highly uncommon in developed countries because other generally available procedures present fewer risks to the mother.

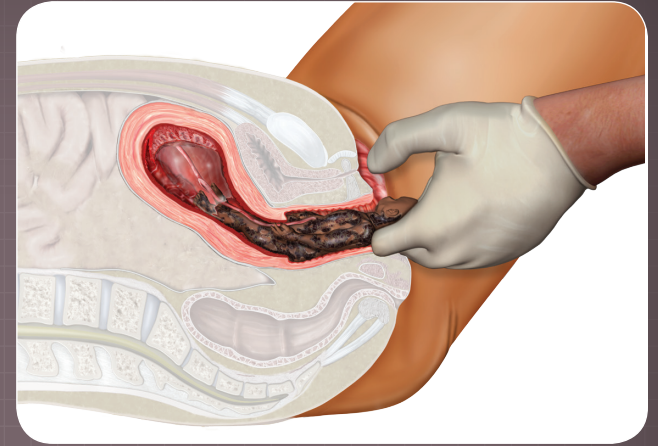


INSTILLATION ABORTION

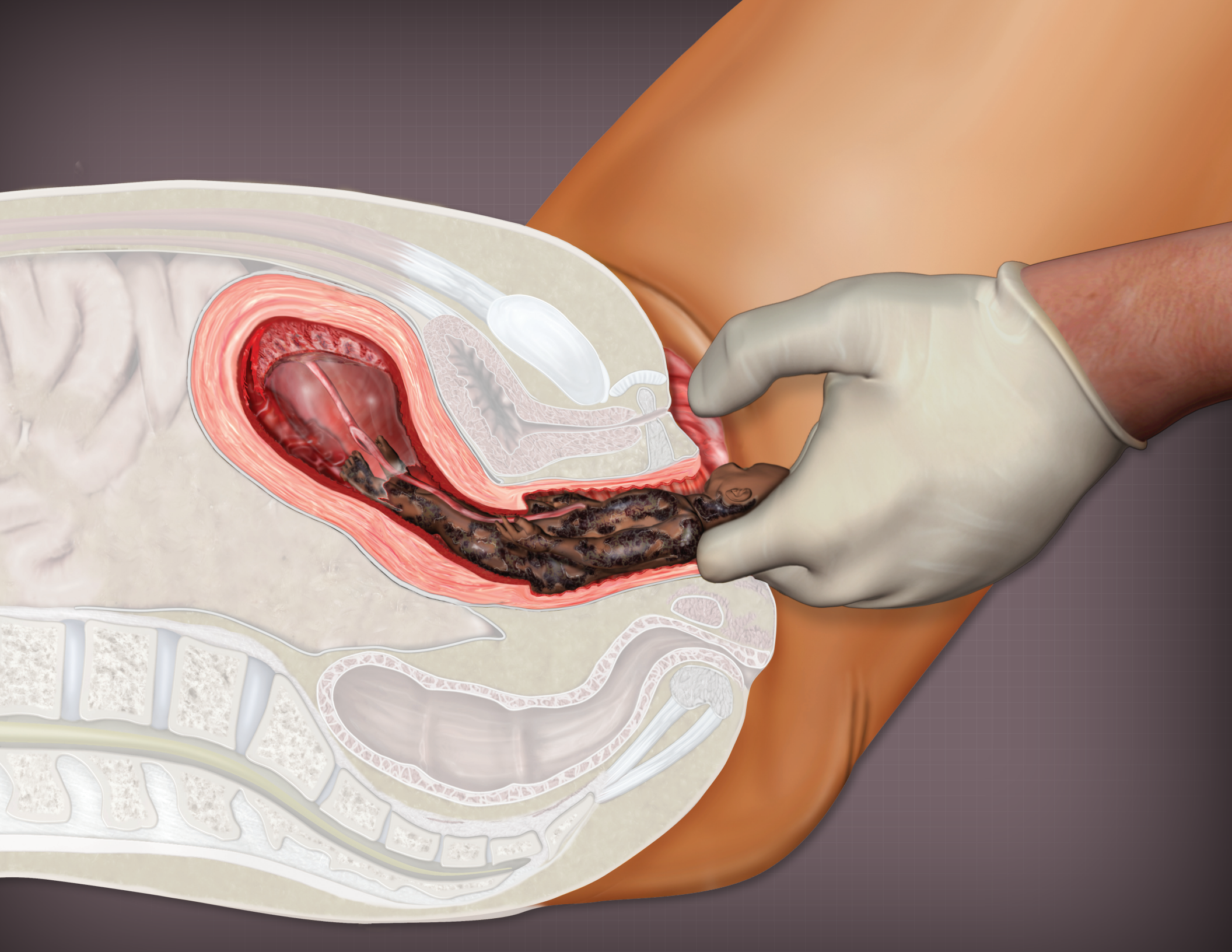
Delivery

The solution injected into the uterine cavity will often kill the fetus, initiate contractions of the uterus, and lead to the expulsion of the fetus. Sometimes, however, contractions will begin and the fetus will be born alive. In order to ensure the death of the fetus, chemicals such as potassium chloride are sometimes

injected directly into the fetus's heart to kill it prior to injection of the chemical solution into the amniotic sac.



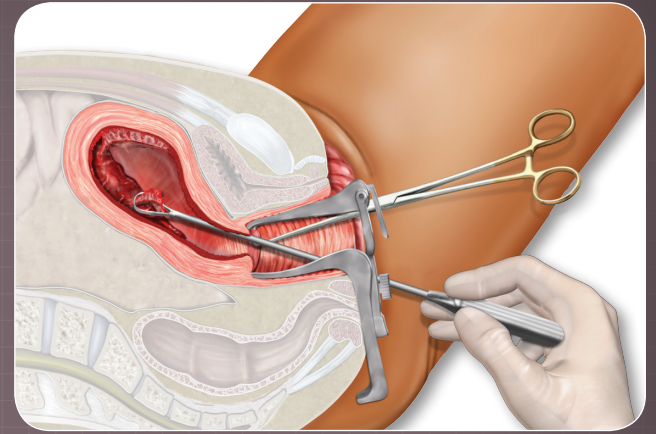
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INSTILLATION ABORTION

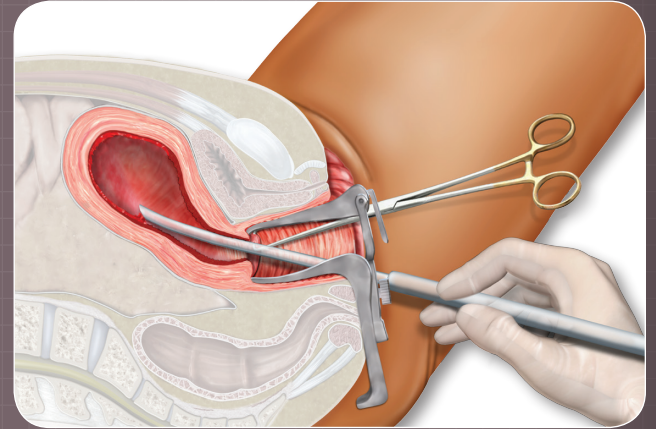
Curettage

After the fetus is removed from the uterus, the clinician will insert a curette, or loop-shaped tool, into the uterus through the dilated cervix. The curette is used to scrape out the uterine cavity and remove all of the remaining tissue: smaller body parts, lining, placenta, tissue, etc.

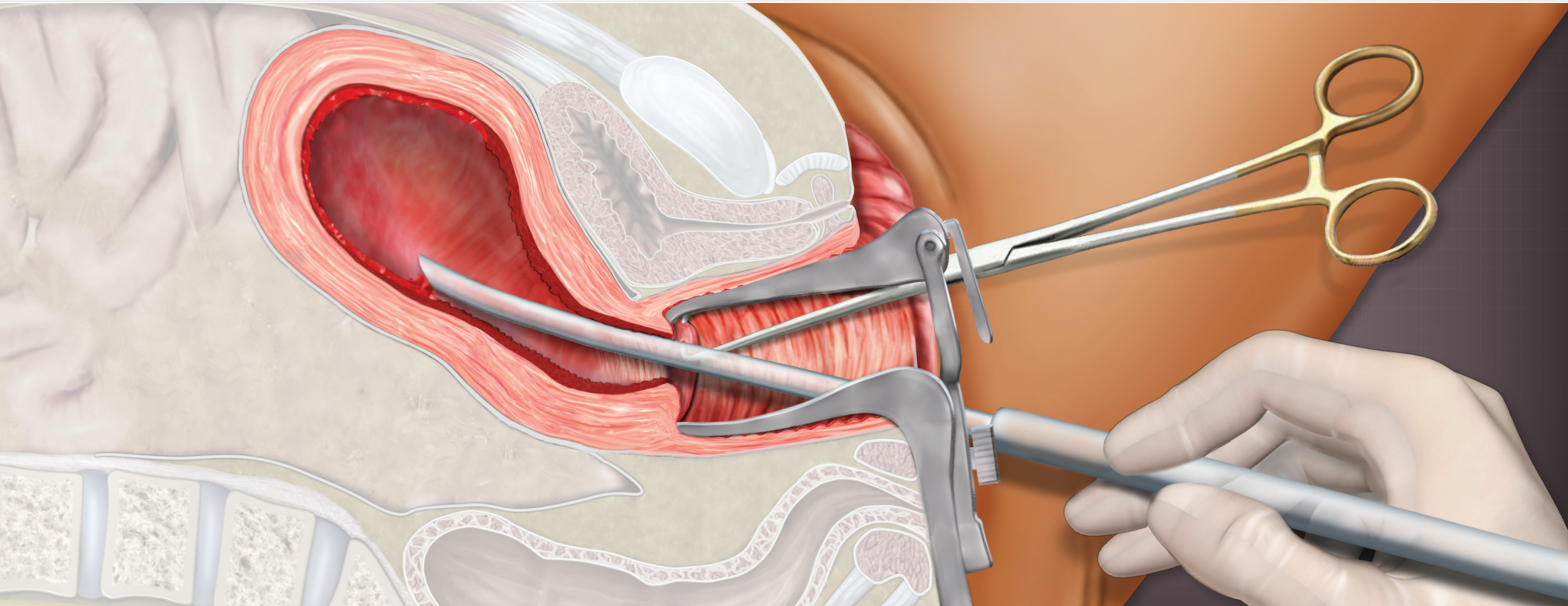
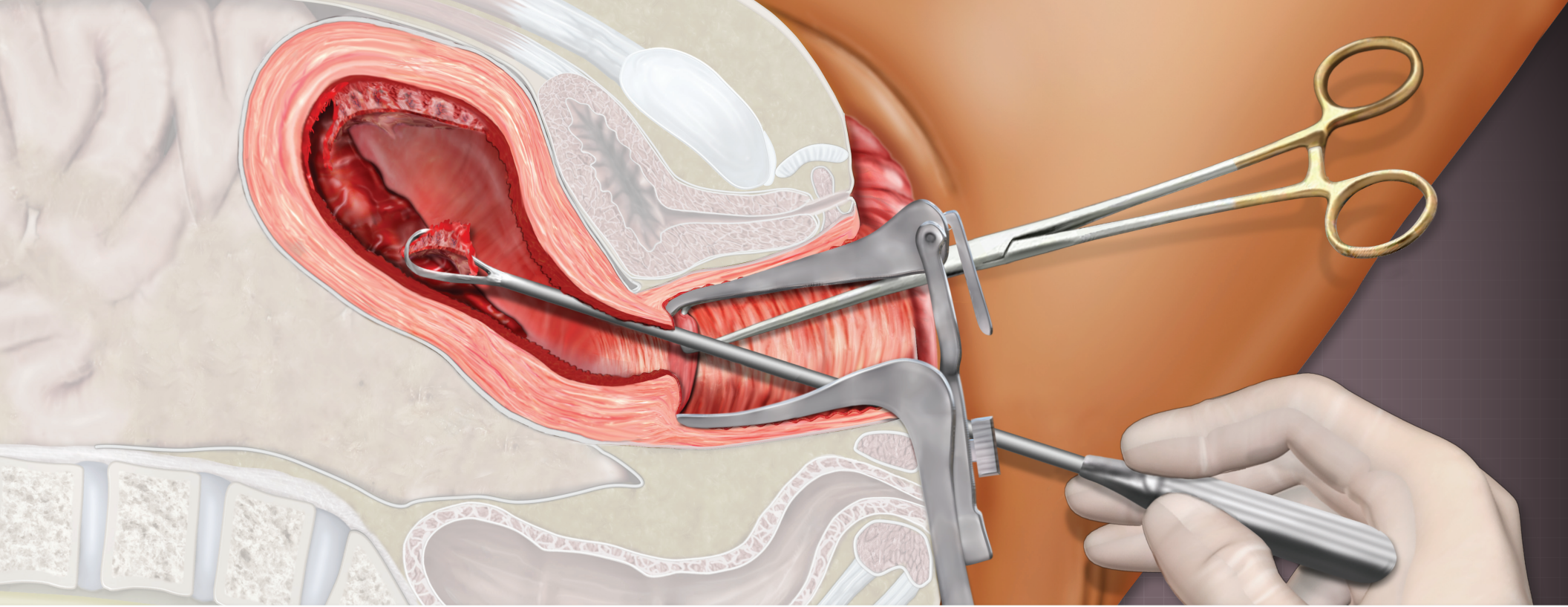


Aspiration

The final step of an instillation abortion is often the use of vacuum aspiration to ensure that all tissue has been removed from the uterus. When the procedure has been completed, the clinician or assistant will inspect the removed contents to ensure that no tissue or body parts have been left inside the uterus.



NOTES



ALTERNATIVE ABORTION METHODS

What alternative methods of abortion are available?

There are several methods of abortion that are performed outside of the recognized medical establishment for various reasons: availability, cost, legality, cultural and familial views of abortion, etc. These methods of abortion may be self-induced, in which the procedure is performed by the pregnant woman herself. They may also be performed by another individual (who may or may not have any medical training) such as a midwife, relative, or friend.

Other than medical or surgical abortion procedures, what are some other types of abortions?

There are three primary categories of alternative abortion: oral abortifacients, foreign bodies inserted into the uterus, and application of external force.

What are the side effects and complications of these alternative methods of abortion?

As with any abortion procedure, pain, cramping, and vaginal bleeding can be expected. Complications include infection, excessive bleeding (hemorrhage) requiring transfusion, cervical injury, incomplete abortion, and ongoing pregnancy. Many of these abortion methods are extremely

dangerous and include severe risk to the health and life of the pregnant woman. Many of the herbal and chemical preparations are toxic in nature and directly poison the woman. Foreign bodies inserted into the uterus can lead to cervical or uterine trauma and severe infection, and, by definition, external force causes direct and often severe trauma to the pregnant woman's body.



NOTES



ORAL ABORTIFACIENTS

What are oral abortifacients and how do they work?

Oral abortifacients are generally herbal or chemical preparations that the pregnant woman will ingest in order to induce labor. These preparations work by stimulating contractions of the uterus, and/or softening the cervix, leading to menstruation and expulsion of the

developing embryo. Herbal preparations include the use of dong quai (*angelica sinensis*), pennyroyal, cotton root bark, tansy (mugwort), black cohosh, juniper, rue (*ruta*), ginger, celery seed, birthwort, and vitamin C in high quantities. Chemical preparations include bleach, turpentine, and acid.



NOTES



FOREIGN-BODY ABORTION

How does inserting a foreign body into the uterus cause an abortion?

There are two primary results of inserting a foreign body—such as a cassava root, stick, wire, knitting needle, thorn, or chicken bone—into the uterus. One result is the puncture of the membranes that surround and protect the developing embryo. When these membranes are

punctured, the embryo will likely die, and the woman's body will expel the dead embryo. Another outcome is that after the membranes are punctured, the foreign body is used to pierce the embryo itself and cause its death directly—which will also result in the woman's body expelling the dead embryo.



NOTES



APPLICATION OF EXTERNAL FORCE

How is external force applied in order to induce abortion?

Various forms of external force have been used to induce abortions, to varying degrees of effectiveness, for thousands of years. Intense physical exertion has been believed by some cultures to bring about a miscarriage. More direct action—such as punches, blows, or kicks to the abdomen of

the pregnant woman—has also been used, even to the point of the pregnant woman throwing herself down stairs in order to induce labor. Abdominal massage of the pregnant woman is another method, during which an individual compresses, constricts, and kneads the abdomen of the pregnant woman in order to kill the developing embryo and initiate uterine contractions.



NOTES



GLOSSARY OF TERMS

Abortifacient[†]: an agent that causes abortion

Abortion, induced[†]: abortion brought on intentionally by drugs or mechanical means

Abortion, spontaneous^{*}: spontaneous expulsion of a human fetus during the first 12 weeks of gestation

Antibiotics^{*}: a substance able in dilute solution to inhibit or kill another microorganism

Aspirator, vacuum[†]: an instrument for removing the products of conception by suction after cervical dilation

Blastocyst^{*}: the modified blastula of a placental mammal

Blighted ovum[†]: a zygote (not actually an ovum) in which development has ceased at an early stage, and abnormality or degeneration is evident

Cannula^{*}: a small tube for insertion into a body cavity, duct, or vessel

Cervix^{*}: the narrow lower or outer end of the uterus

Curettage[†]: the removal of growths or other material from the wall of a cavity or other surface, as with a curette

Curette[†]: instrument in the form of a loop, ring, or scoop with sharpened edges, attached to a rod-shaped handle, used for curettage

Dilator[†]: an instrument designed to enlarge a hollow structure or opening

Dilator, osmotic: [see laminaria]

DNA[^]: the fundamental genetic material of all cells, and is present in the nucleus of the cell where it forms part of the chromosome and acts as the carrier of genetic information

Egg (ovum)^{*}: a female gamete, or sex cell; [see ovum]

Ejaculation[†]: the process that results in propulsion of semen from the genital ducts and urethra to the exterior

Embryo[†]: in humans, the developing organism from fertilization to the end of the eighth week

Epididymis (pl. epididymides)[^]: an oblong body attached to the upper part of each testis, composed of convoluted vessels and ducts

Fallopian tube(s)^{*}: either of the pair of tubes that carry the eggs from the ovary to the uterus

Fertilization[†]: union of the gametes [sperm and ovum] inside the body of the female

Fetus[†]: in humans, the product of conception from the end of the eighth week of gestation to the moment of birth

Forceps^{*}: an instrument for grasping, holding firmly, or exerting traction upon objects especially for delicate operations

Gestation^{*}: the carrying of young in the uterus from conception to delivery

Gestational sac^{*}: a thin membrane forming a closed sac about the embryos and fetuses of mammals and containing the amniotic fluid

Implantation^{*}: the process of attachment of the embryo to the maternal uterine wall

Laminaria[†]: sterile rod made of kelp that is hydrophilic, and, when placed in the cervical canal, absorbs moisture, swells, and gradually dilates the cervix

Menstrual extraction^{*}: a procedure for early termination of pregnancy by withdrawing the uterine lining and a fertilized egg if present by means of suction

Methotrexate^{*}: a toxic drug that is an analog of folic acid and is used to treat certain cancers, severe psoriasis, and rheumatoid arthritis

Mifepristone^{*}: a drug taken orally to induce abortion especially early in pregnancy by blocking the body's use of progesterone

GLOSSARY OF TERMS, CONTINUED

Miscarriage*: spontaneous expulsion of a human fetus before it is viable and especially between the 12th and 28th weeks of gestation

Misoprostol*: a synthetic prostaglandin analog used to induce abortion in conjunction with mifepristone

Ovary (pl. ovaries)*: one of the typically paired essential female reproductive organs that produce eggs and, in vertebrates, female sex hormones

Ovulation*: the discharge of a mature ovum from the ovary

Ovum (egg)†: the female reproductive cell which, after fertilization, becomes a zygote that develops into a new member of the same species

Penis†: the organ of copulation and urination in the male

Placenta†: fetomaternal organ of metabolic interchange between the embryo or fetus and mother

Progesterone*: a female steroid sex hormone that is secreted by the corpus luteum to prepare the endometrium for implantation and later by the placenta during pregnancy to prevent rejection of the developing embryo or fetus

Prostate gland†: an accessory gland in males which is wrapped round the urethra as this tube leaves the urinary bladder. Opening into the urethra, the gland secretes an alkaline fluid during ejaculation and is a constituent of semen

Semen†: the thick, whitish secretion of the reproductive organs in the male

Seminal vesicle(s)^: one of the small paired sacs lying on either side of the male urethra, which collect and store sperm cells

Speculum†: an instrument for exposing the opening of any canal or cavity to facilitate inspection of its interior

Sperm cell(s)†: the male gamete, or sex cell, that contains the genetic information to be transmitted by the male

Tenaculum*: a slender sharp-pointed hook attached to a handle and used mainly in surgery for seizing and holding parts

Testis (pl. testes)†: the male gonad; either of the paired egg-shaped glands normally situated in the scrotum

Trophoblast*: the outer layer of the mammalian blastocyst that supplies nutrition to the embryo, facilitates implantation by eroding away the tissues of the uterus with which it comes in contact allowing the blastocyst to sink into the cavity formed in the uterine wall, and differentiates into the extraembryonic membranes surrounding the embryo

Urethra*: the canal that carries off the urine from the bladder and in the male serves also as a passageway for semen

Uterus*: an organ in female mammals for containing and usually for nourishing the young during development prior to birth

Vagina†: the genital canal in the female, extending from the vulva to the cervix, which receives the penis in copulation

Vas deferens (pl. vasa deferentia)^: The narrow tube that leads from each testis through the prostate gland to join a tube from the seminal vesicles to form the ejaculatory duct

Zygote†: the early embryo that develops from a fertilized ovum

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† Dorland's Illustrated Medical Dictionary, 32nd ed. (2012). Philadelphia: Elsevier Saunders.

* Merriam-Webster's Medical Dictionary (2006). Springfield, Massachusetts: Merriam-Webster, Incorporated.

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