Chapter 15

Cesarean Delivery and Vaginal Birth After Cesarean Delivery

Most babies are born through the vagina. However, in many pregnancies, a baby is delivered through incisions in the woman's abdomen and uterus. This is known as a ***cesarean delivery***. Cesarean deliveries are very common. In fact, one in three babies born in the United States is delivered this way.

It once was thought that if a woman had one cesarean delivery, all other babies she had in the future also should be born by cesarean delivery. Today, it is known that many women can undergo a ***trial of labor after cesarean delivery (TOLAC)***. After a successful TOLAC, many women will be able to give birth through the vagina (called a ***vaginal birth after cesarean delivery [VBAC]***).

Why You May Need a Cesarean Delivery

A cesarean delivery may be needed if circumstances occur during labor that make a cesarean delivery a safer choice than a vaginal delivery for either the pregnant woman or the baby. A cesarean delivery also may be planned ahead of time because of certain problems or conditions. Some examples include the following:

- Labor fails to progress—One of the most common reasons why cesarean deliveries are performed is because labor slows down or stops. About one in three cesarean deliveries is done for this reason. For example, you may be experiencing contractions that are too weak or too infrequent to dilate the ***cervix*** wide enough for the baby to move through the vagina. Sometimes, even if your cervix dilates enough, the baby may be too big

for your pelvis or the baby's position may not allow passage in a safe and timely manner.

- The fetal heart rate is abnormal—An abnormal fetal heart rate may mean that labor is too stressful for the baby.
- There is a problem with the ***umbilical cord***—If the umbilical cord becomes pinched or compressed, the baby may not get enough ***oxygen***.

A cesarean delivery also may need to be scheduled before you go into labor. Reasons for a scheduled cesarean delivery include the following:

- You had a previous cesarean delivery—A previous cesarean delivery may mean that you'll need to have a cesarean delivery again depending on the way the prior incision in your uterus was made. After discussing options with your health care provider, you may choose to have a repeat cesarean delivery even if you are a candidate for TOLAC.
- You're having more than one baby—If you are having two or more babies, you may need to have a cesarean delivery. Many women having twins are able to have a vaginal delivery. However, if the babies are being born too early or if the "presenting twin" (the twin who is in a position to be born first) is not in a head-down position, a cesarean delivery is preferred. The likelihood of having a cesarean delivery increases with the number of babies you are carrying.
- You have a large baby (a condition called ***macrosomia***) or a small pelvis—Sometimes a baby is too big to pass safely through a woman's pelvis and vagina. This condition is called ***cephalopelvic disproportion***.
- Your baby is in a ***breech presentation*** or is lying in an abnormal position—If your baby is in a breech presentation (with buttocks or feet closest to the vagina), a planned cesarean delivery is the safest and most common method of delivery. A planned vaginal delivery may be possible in some situations. If the baby is transverse (lying sideways in the uterus rather than head down), a cesarean delivery is the only choice for delivery.
- There are problems with the placenta—***Placenta previa*** is a condition in which the placenta is below the baby and covers part or all of the cervix, blocking the baby's exit from the uterus. This may be associated with heavy bleeding if vaginal delivery is attempted.
- You have a medical condition that may make vaginal birth risky—For example, a cesarean delivery may be done if a woman has an active herpes infection during labor.

- You request it—Some pregnant women prefer to undergo a cesarean delivery even when there is no medical reason why it must be done. This is known as "cesarean delivery on maternal request." If you are interested in requesting a cesarean delivery, you and your health care provider will need to discuss this option in advance. Cesarean birth is major surgery, and there is a risk of serious complications for both you and your baby. When there is no medical reason for a cesarean delivery, the risks of having a cesarean delivery often outweigh the benefits. This issue is discussed in more detail in the section "Cesarean Delivery on Request" in Chapter 6, "Month 6 (Weeks 21–24)."

What Happens During a Cesarean Delivery

The process of cesarean delivery can vary depending on the reason why it is being done. However, in most cases, cesarean deliveries follow a similar procedure.

Anesthesia

Different types of ***anesthesia*** are used for pain relief during a cesarean delivery. They include ***epidural block***, ***spinal block***, ***combined spinal–epidural block***, or ***general anesthesia***. The type of anesthesia chosen depends on several factors, including your health and that of your baby as well as why the cesarean delivery is being done. An ***anesthesiologist*** will talk with you about the benefits and risks of each type of anesthesia and suggest the best option for you.

If you are given an epidural during labor and then need to have a cesarean delivery, usually your anesthesiologist will be able to inject more medication or a different medication through the same ***catheter*** to increase your pain relief. The ***anesthetic*** will numb you completely for the surgery. Although you will not feel any pain, there may be a feeling of pressure.

Preparing You for Surgery

Before the cesarean delivery starts, a few steps are taken to prepare you for surgery:

- Your blood pressure, heart rate, and breathing will be monitored during the surgery. An oxygen mask will be placed over your nose and mouth or a tube will be placed under your nose to make sure you and your baby get plenty of oxygen during surgery.

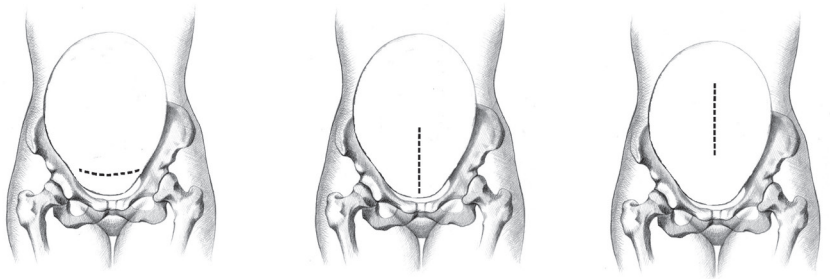
- You will receive ***antibiotics*** through your ***intravenous (IV) line***. This is done to prevent infection.
- Your abdomen will be washed and then swabbed with an antiseptic. If needed, pubic hair may be trimmed with clippers before washing the abdomen. If your cesarean delivery is planned, it is important not to remove pubic hair with a razor the night or morning before surgery. Using a razor increases the risk of surgical-site infections.
- Sterile drapes will be placed around the area of the incision.
- A catheter will be inserted into your ***bladder***. The catheter keeps the bladder empty so that it's not injured during surgery.
- Special devices will be applied to your legs to reduce the risk of ***deep vein thrombosis (DVT)*** during surgery. These devices encircle your legs and periodically fill with air to encourage blood circulation in your veins. If you have risk factors for DVT, you may receive medication instead of having the devices.

  In cesarean deliveries that are not being done for an emergency situation, most hospitals allow you to have a support person with you in the operating room. Your support person will be given a surgical gown, mask, hat, and gloves to wear. He or she can stay with you throughout the surgery.

Making the Incisions

Two incisions are made: one in your abdomen and one in your uterus. Once your abdomen is cleaned and you are numb from the anesthetic, your doctor will make the abdominal incision:

- The incision is made through the skin and the wall of the abdomen and goes from side to side, just above the pubic hairline (transverse) or, in some cases, up and down (vertical).
- The abdominal muscles are separated, and an incision is made through the lining of the abdominal cavity. The abdominal muscles usually are not cut.
- When your doctor reaches the uterus, another cut is made in the uterine wall. This incision also can be transverse (side to side) or vertical (up and down). In most cases, a transverse incision is made. This type of cut is done in the lower, thinner part of the uterus. It causes less bleeding and heals with a stronger scar. A vertical incision may need to be done if



Types of uterine incisions for a cesarean birth. The type of incision made in the skin for a cesarean birth may not be the same type of incision made in the uterus.

you have placenta previa, if the baby is in an unusual position, or if your baby is extremely ***preterm*** or smaller than average.

An important point to remember is that the incision made in your abdomen may be different from the incision made in your uterus. Although this information should be entered into your medical record, make sure that you also know the type of incision that was made in your uterus. This is a major factor in determining whether you can have a vaginal birth in the future. The type of incision most favorable for a vaginal birth after a cesarean delivery is a low transverse incision.

Delivering the Baby

The baby is delivered through the incisions. The umbilical cord then is cut, and the baby is passed to the nurse.

Afterbirth and Closing the Incisions

After the baby is delivered, the placenta is removed from the uterus. The incisions made in the uterus and abdominal wall are closed. The incision in the uterus usually is closed with sutures that absorb into the body. Different materials, including surgical thread, staples, or surgical glue, may be used to close the abdominal incision. Depending on what is used, you may need to have the stitches removed at a later date. Other types of closures are absorbed into the body and do not need to be removed.

Risks

Like any major surgery, cesarean delivery involves risks. Problems occur in a small number of women. They usually can be treated, but, in very rare cases, complications can be serious or even fatal:

- The uterus, nearby pelvic organs, or skin incision can get infected.
- You can bleed too much. This is called a ***hemorrhage***. A blood ***transfusion*** may be needed in a few cases. In very rare cases, a ***hysterectomy*** (surgical removal of the uterus) may need to be done if bleeding cannot be controlled.
- You can develop blood clots in the legs (DVT) that can travel to the lungs. For this reason, it's standard practice to place air-filled devices on your legs to help prevent this complication.
- Your bowel or bladder can be injured.
- You can have a reaction to the medications or anesthetics that are used.

There also are long-term risks associated with cesarean delivery. Some of these risks may affect future pregnancies. With each cesarean delivery, the risk of problems with the placenta—such as placenta previa and ***placenta accreta***—increases. Placenta accreta is a serious condition in which the placenta grows into the muscular walls of the uterus. Placenta accreta can cause hemorrhage and can be life threatening.

Because of these risks, cesarean birth usually is done only when the benefits of the surgery outweigh the risks. In some situations, ***cesarean birth*** is the best option. In other situations, vaginal birth is best. You should understand the risks and benefits of both options for your particular situation.

Recovery

If you are awake for the surgery, you probably can hold your baby after the surgery is completed. You will be taken to a recovery room or directly to your hospital room. Your blood pressure, pulse rate, breathing rate, and abdomen will be checked regularly.

If you plan on breastfeeding, be sure to let your health care provider know. Having a cesarean delivery does not mean you won't be able to breastfeed your baby. If all is going well for you and your baby, you should be able to begin breastfeeding soon after delivery.

You will receive fluids intravenously after your delivery until you are able to eat and drink. You will be able to eat and drink as soon as you would like to. The abdominal incision will be sore for the first few days. Pain medication can be given after the anesthesia wears off. There are many different ways to control pain. Talk to your health care provider about your options.

Soon after surgery, the catheter is removed from the bladder. A nurse will help you get out of bed and sit in a chair. Walking soon after a cesarean delivery helps to decrease the risk of developing blood clots, so you will be encouraged to walk a short distance as soon as you feel able to do so. You can shower as soon as you would like to. Most women are able to walk on their own and to eat and drink within 24 hours after surgery. The usual hospital stay after a cesarean delivery is 2–4 days. How many days you will have to stay depends on why you needed the cesarean delivery and how long it takes for your body to recover.

Back at Home

Once you are permitted to go home, you will need to take special care of yourself and limit your activities. Your health care provider will give you specific instructions about what you can and can't do. The bottom line is that you need to take it easy. You just had major surgery, and it will take a few weeks for your abdomen to heal. During the weeks you are recovering from the surgery, you may experience the following:

- Mild cramping, especially when you are breastfeeding
- Bleeding or discharge for about 4–6 weeks
- Bleeding with clots and cramps
- Pain in the incision

Your health care provider will tell you not to place anything in your vagina (such as tampons) or have sex for a few weeks in order to prevent infection. Give yourself time to heal before doing any strenuous activity. If you have a fever, chills, leg pain, draining or leakage from your abdominal incision, heavy bleeding, or worsening pain, call your health care provider right away.

Vaginal Birth After Cesarean Delivery

It once was thought that if a woman had one cesarean delivery, she should give birth to all her other babies the same way in the future. This thinking,

however, has changed in recent years. Many women now can try to give birth through the vagina (vaginally) after a cesarean delivery. This is known as having a trial of labor after cesarean, or TOLAC. Many women attempting a trial of labor will be able to give birth through the vagina—what's known as a vaginal birth after cesarean delivery, or VBAC.

Between 60% and 80% of women are successful with TOLAC and are able to give birth vaginally. Sometimes, though, problems may arise. One of the most serious is ***uterine rupture***, in which the scar on your uterus from your previous cesarean delivery opens. If this happens, your health care provider may need to perform an emergency cesarean delivery.

The decision of whether to try a vaginal delivery or to have a repeat cesarean delivery can be complex. There are a few factors that help determine if TOLAC is a good choice for your next delivery.

Is It Right for You?

Trial of labor after cesarean birth is considered a safe option for many women. In deciding whether you are an appropriate candidate for a TOLAC, your health care provider will consider the following factors:

- Type of uterine incision—The incision made in your uterus (not the one in your skin) for your previous cesarean delivery is a key factor in deciding whether you should attempt to have a VBAC. This information should be in your medical records. A low transverse (sideways) incision is the most common type used in cesarean birth and the least likely to rupture (tear).
- Previous deliveries—A VBAC is more likely to be successful if you have had at least one vaginal delivery in addition to a previous cesarean delivery. A VBAC can be considered in women who have had up to two previous cesarean deliveries.
- Future deliveries—Multiple cesarean deliveries are associated with additional potential risks. If you know that you want more children, you should keep these risks in mind when making your decision.
- A pregnancy problem or medical condition—Vaginal delivery is riskier if there is a problem with the placenta, problems with the baby, or certain (but not all) medical conditions during pregnancy.
- Type of hospital—The hospital in which a woman has a TOLAC should be prepared to deal with emergencies that may arise. Some hospitals

may not offer TOLAC because hospital staff does not feel they can provide needed emergency care. If the hospital you have chosen does not have the appropriate resources, you often can be referred to one that does.

Let your health care provider know if you're interested in trying to have a VBAC early in your pregnancy. Together, you and your health care provider can consider this option. Discussing VBAC early on allows you to consider all of the benefits and risks that apply to your individual situation and to think about all of the options. Many of the factors that go into the decision are known early in pregnancy. Also, if the type of incision used in the previous cesarean delivery is not known, an attempt can be made to find this information.

Benefits

There are many benefits to VBAC. With a VBAC, you avoid the risks and discomfort of major abdominal surgery. There is less blood loss and a lower risk of infection. There is also less risk of blood clots. With a vaginal birth, there also is a shorter recovery time after giving birth compared with a cesarean delivery. You'll be back on your feet much quicker.

For women planning to have more children, having a VBAC may help prevent some of the potential future complications of multiple cesarean deliveries. These complications include bowel or bladder injury, hysterectomy, and problems with the placenta.

Risks

Vaginal birth after cesarean delivery is not the right choice for every woman. There are some risks involved, including infection, injury, and blood loss. The most serious risk is the possible rupture of the cesarean scar on the uterus or rupture of the uterus itself. Although a rupture of the uterus is rare, it may harm the pregnant woman and her baby if it does occur. Women who had a vertical incision that was made on the upper part of the uterus (called a "high vertical" or "classical" incision) have the highest risk of rupture. For this reason, VBACs are not recommended for women with a high vertical incision. If a vertical incision was made in the lower part of the uterus, a VBAC still can be considered.

Best Chances for Success

Although your health care provider will not be able to predict whether TOLAC and VBAC will be successful, there are several factors that are known to play a role in the chances of it turning out as planned. Women with the highest chance of a successful VBAC are those who have given birth vaginally and whose labor progressed naturally without needing to be induced. On the other hand, women with the following conditions have a lower chance of success:

- Recurrent indication for first cesarean delivery
- Being obese
- Being older
- Being a race other than white
- Having a baby weighing more than 9 pounds
- Having a pregnancy lasting beyond 40 weeks
- Having a short time between pregnancies
- Having ***preeclampsia***

Be Prepared for Changes

Although you may have decided on a certain plan for your delivery, things can happen during your pregnancy and labor that change your plan. For example, you may need to have your labor induced, which can reduce your chances of having a successful VBAC. If circumstances change, you and your health care provider may want to reconsider your decision. Keep in mind that your health care team is there to help guide you in making the best decision for you and your baby.

RESOURCES

The following resources offer more information about cesarean birth and VBAC:

Cesarean Delivery
Medline Plus
www.nlm.nih.gov/medlineplus/cesareansection.html
A great place to start learning about all things related to cesarean birth.

Cesarean Delivery: Resource Overview
The American College of Obstetricians and Gynecologists (ACOG)
https://www.acog.org/Womens-Health/Cesarean-Delivery
Lists ACOG's articles and patient education resources about cesarean delivery.

Vaginal Birth After Cesarean (VBAC): Resource Overview
The American College of Obstetricians and Gynecologists (ACOG)
https://www.acog.org/Womens-Health/Vaginal-Birth-After-Cesarean-VBAC
Lists ACOG's articles and patient education resources about VBAC.

VBAC Calculator
Eunice Kennedy Shriver National Institute of Child Health and Human Development
https://mfmu.bsc.gwu.edu/PublicBSC/MFMU/VGBirthCalc/vagbirth.html
This interactive calculator can help predict the chance of a VBAC. Note that it is designed for educational use and should not be used by itself to predict your individual chance of success.