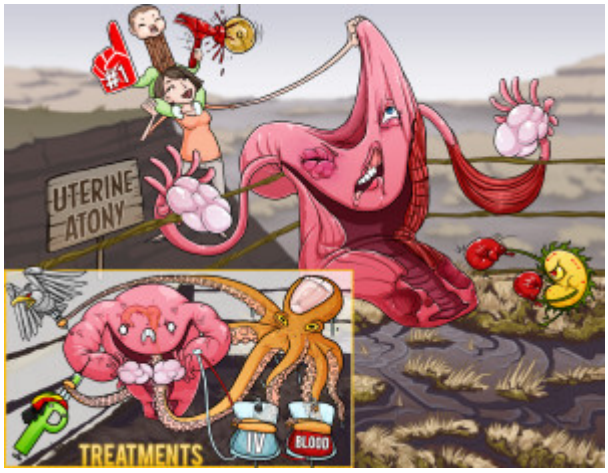
Uterine Atony

Uterine atony occurs when the muscles of a woman's uterus lose their tone and the ability to contract after delivery. Normally the contraction of uterine muscles compresses the vessels and reduces postpartum bleeding. If uterine muscles lose tone and fail to contract the mother can begin to hemorrhage. Postpartum hemorrhage can be caused by coagulation defects, uterine atony, uterine rupture, retained placenta, implantation site bleeding, or trauma to genitourinary tract, though uterine atony is the most common cause.



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Pathophysiology

Most Common Cause of Postpartum Hemorrhage
#1 Foam-finger of Post-baby with Hemorrhage-hammer
This atony is considered to be the most common cause of postpartum hemorrhage. It is defined as the loss of more than 500 mL of blood after a vaginal birth or 1000 mL following a cesarean section, the loss of at least 10% of the hemoglobin, and probable need for a blood transfusion to prevent symptoms of shock. Although rates of mortality from postpartum hemorrhage have decreased significantly in recent years, it is still a significant cause of maternal death.

Uterine Overdistention
Uterus Over-stretched
Over-distention can be caused by a multifetal pregnancy or an abnormally large fetus. It can also be caused by polyhydramnios, or excessive amniotic fluid. Polyhydramnios is often the result of a fetal gastrointestinal or central nervous system birth defect, maternal diabetes, twin-twin transfusion or fetal anemia, but many times the cause is unknown.

Exhausted Myometrium
Drooping Muscle
When the myometrium becomes exhausted and is unable to contract, there is no pressure being placed upon the blood vessels of the uterus. This causes the uterine vessels and then the uterus to quickly fill with blood.

Uterine Infection
Bacteria
Another common reason for uterine atony is a uterine infection. This is known as chorioamnionitis, and it refers to an infection of the amniotic sac surrounding the fetus as well as amniotic fluids.

Presentation

"Boggy" Uterus
Boggy marsh
Refers to a uterus which is relaxed and distended and may or may not be responsive to uterine massage - which normally should increase release of oxytocin, which helps promote uterine contraction. It is often accompanied by excessive postpartum bleeding.

Treatment

Resuscitation with IV Fluids and Transfusions
IV Fluid and Transfusion
Blood transfusions and IV fluids can prevent a patient from going into shock from blood loss. However, there remains the possibility of blood transfusion risks such as an adverse reaction or transmission of a blood-borne pathogen, coagulopathy, or hemodynamic shock.

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Bimanual Uterine Massage

Uterus Massage

Massaging the fundus (upper portion) of the uterus can aid in the release of oxytocin which helps the uterine muscles begin to contract naturally postpartum. This can be done by cupping the hand over the fundus and applying pressure towards the lower uterine segment while at the same time cupping the other hand over the abdomen around the area of the pubic symphysis for support. An alternative method is to place the hand in the vagina and apply pressure to the uterine wall while at the same time cupping the hand over the lower abdomen and applying pressure from above through the abdominal wall. Manually compressing and massaging the uterus is able to control most cases of hemorrhage due to atony.

Oxytocin

Octopus-toe

Produced in the hypothalamus and stored in the pituitary gland, oxytocin is a powerful uterotonic that causes the uterine muscles to contract by acting on the calcium concentrations within the uterine cells. This contraction in turn staunches blood loss. It can be given intravenously or intramuscularly.

Methergine

Metal-eagle

Methergine is a powerful ergot alkaloid to help staunch uterine bleeding and acts directly on the uterus to increase its tone and the strength of contractions. It should only be used in IV form and then only in emergency situations. Because of its vasoconstrictive properties, it is contraindicated in patients with preeclampsia and high blood pressure.

Prostaglandins

P-rasta

Another uterotonic that enhance uterine contractility and can be administered IM or directly into the myometrium. They can control bleeding in around 85% of patients but cannot be used on patients with asthma because they cause bronchoconstriction.

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