International Vasa Previa Foundation

July 06, 2011
Vasa previa occurs when fetal blood vessel(s) from the placenta or umbilical cord cross the entrance to the birth canal, beneath the baby.

Fact Sheet

Cause
Vasa previa occurs when fetal blood vessel(s) from the placenta or umbilical cord cross the entrance to the birth canal, beneath the baby. Vasa previa can result in rapid fetal hemorrhage (occurs from the vessels tearing when the cervix dilates or membranes rupture) or lack of oxygen (if the vessels become pinched off as they are compressed between the baby and the walls of the birth canal). The aberrant vessels result from velamentous insertion of the cord, bilobed or succenturiate lobed placenta.

Symptoms
Vasa previa can be asymptomatic but can also present with sudden onset of abnormally heavy or small amounts of painless vaginal bleeding in the second or third trimester of pregnancy. Source of blood should always be investigated to determine whether the blood is maternal or fetal.

Incidence
Rarely reported, occurs in 1:2500 to 3000 births with a fetal mortality rate estimated to be as high as 95 percent if not diagnosed antepartum. (1-2)

Prognosis
When properly diagnosed antepartum, prognosis of survival is very good. The fetal mortality rate is very low when an elective C-section is performed after fetal lung maturity is adequate.

Ante partum Diagnosis
Changing current routine obstetrical ultrasound protocols to include checking the placental cord connection for velamentous cord insertion during all routine obstetrical ultrasounds is recommended (preferably with color Doppler). All suspected cases of velamentous cord insertion, placenta previa, low-lying placenta, multi-gestational pregnancies, and multi-lobed placentas need to be checked for vasa previa with advanced ultrasound techniques, specifically level 2 ultrasound of the lower uterine segments and/or transvaginal color Doppler ultrasound. (3) Vasa previa can be detected during pregnancy as early as the 16th week with use of transvaginal sonography in combination with color Doppler. (4) Infant death from vasa previa is preventable if diagnosed antenatally.

Warning Signs
Vasa previa might be present if any (or none) of the following conditions exist: low-lying placenta (may be caused by previous miscarriages followed by curreting of the uterus (D&C), or uterine operations, which causes scarring in the uterus), bilobed or succenturiate-lobed placentas, pregnancies resulting from in-vitro fertilization or multiple pregnancies.(5-6) Vasa previa bleeding is painless. Other OB or birthing bleeding complications are not necessarily painless.

Treatment
When diagnosed antepartum, treatment plans could include the following: use of tocolytes to stop all uterine activity; bedrest; no sexual intercourse, vaginal exams, lifting, heavy straining during bowel movements (use of stool softeners); hospitalization; fetal monitoring; regular ultrasounds to monitor progression of vasa previa; determination of source of bleeding (either fetal or maternal); amniocentesis to access fetal lung maturity; steroid treatment to develop fetal lung maturity; and most importantly, elective cesarean delivery early enough to avoid an emergency but late enough to avoid complications of prematurity. When not diagnosed antepartum, aggressive resuscitation complete with blood transfusion for the infant if necessary must be planned for and/or expected. (7)

For More Information: http://www.vasaprevia.com
Quotes From The Experts

"Vasa previa is a rare condition; however it is often a lethal one. For years we have tried to get the general ObGyn community to appreciate this condition and to realize that it can result in the death of an otherwise totally normal infant. The tragedy is even greater because the pregnancy is often entirely uncomplicated, and demise of the baby occurs just at the very end of pregnancy when the parents are looking forward with excitement and expectation to the birth of a healthy baby. Our attempts to have more frequent screening performed have been criticized because it is felt that the condition is rare, and indeed it is. However, very few other conditions carry such a high mortality in a previously normal fetus. The arguments have been that it is prohibitively expensive to screen for vasa previa using ultrasound and that it requires a reasonable degree of skill to make the diagnosis. As such, it is not currently the standard of care to look for vasa previa. Nevertheless, we have identified a second-trimester low-lying placenta as an important risk factor, and recommend targeted sonographic screening with transvaginal sonography and color Doppler for vasa previa in women whose placentas have been identified as low-lying in the second trimester, regardless of whether the placenta remains low-lying at term or not. Other women who should be screened for vasa previa include those with placentas which have succenturiate lobes, women with multiple pregnancies, and those with pregnancies resulting from in-vitro fertilization. Because survival of the baby depends almost entirely on prenatal diagnosis, this strategy for selective screening, followed by elective cesarean delivery, will help reduce the mortality from vasa previa."
Yinka Oyelese, M.D
Georgetown University Hospital, Washington, D.C.
October 2001

"Vasa previa is a very rare but well known and well respected condition in the area in which I practice, obstetrics. The advances in ultrasound have greatly aided in the diagnosis and management of this problem. The biggest problem is to identify the patients that are at risk for this condition. The way that we discover these rare abnormalities of placentation is through routine screening ultrasounds at 18-20 weeks. If there are low lying placentas or placenta previas, we then examine the lower uterine segment with doppler flow. We then routinely send these patients to an ultrasound center for confirmation. Also, any patients with abnormal bleeding in the 2nd and 3rd trimesters need appropriate evaluation for this condition. The fetal mortality rate if undetected varies considerably from 33%-66%. The fetal mortality rate when an elective c-section is performed when fetal lung maturity is adequate is very low."
Frank A. Frenduto, M.D.
Private Practice OBGYN, Durham, North Carolina
October 2001

"I believe it is really important to heighten the awareness of physicians and sonographers doing obstetrical ultrasound to the potential clues to this dangerous condition. I also believe vasa previa is more common than currently believed. In my practice alone, I have diagnosed five patients with vasa previa in the last year. I urge my students to look for the clues of vasa previa. If a placenta is bilobed, regardless of location, or if there are unusual blood vessels at the placental periphery which could be a clue to a membranous umbilical cord origin, then scans using colorflow imaging over the internal os (entrance) of the cervix should be done to exclude vasa previa."
Harris Finberg, M.D.
High-risk obstetrical radiologist in Phoenix
November 2000

"Of course I support your goal for vasa praevia. Unfortunately, I fear that this is a problem that will continue to evade even the most vigilant of sonographers unless they actively look for vasa praevia. Additionally, I am lucky that all the ultrasound machines in my unit have colour Doppler. Unfortunately, this is not the case in many hospitals world wide, making the detection of vasa praevia even more difficult."
Basky Thilanganathan
Director, Fetal Medicine Unit
St.George's Hospital Medical School London June 2001

Glossary
amniocentesis - (also commonly referred to as "amnio") is a common prenatal test. During the procedure, an ultrasound device is used to determine the baby's position, and then a long hollow needle is introduced to withdraw amniotic fluid from around the fetus. (The baby is not touched.) The particles of the baby's sloughed-off skin cells floating in the water are then tested in a lab for fetal abnormalities. Results are usually back in 8-10 days. Amnios are also used to determine fetal lung maturity when preterm labor has been recommended.

antepartum- relating to the period before parturition (action or process of giving birth); before childbirth

biloced placenta (latin name: placentae bilobata) - To be classified as bipartite or tripartite the two or three lobes of a placenta should be separated by a membrane and be of equal or near equal size. There is no certain information on how multilobed placentas are formed. A bipartite placenta in one pregnancy may be followed by greater-than-expected frequency of bipartite placenta in the next pregnancy. This raises the possibility that some multilobed placentas have genetic origin. The umbilical cord most often inserts into the membranes between the two lobes of bipartite placentas but in about one-third of cases it inserts into the larger of the two lobes. The two clinical manifestations of multilobed placentas most often cited are bleeding in the first trimester of pregnancy, and a failure of one of the lobes to separate at delivery with consequent postpartum hemorrhage.

color Doppler ultrasound- used to measure the velocity of blood flow. Doppler ultrasound can be used to listen to the fetal heart beat, examine the fetal heart for effects and estimate placental blood flow. This special type of ultrasound shows different rates of blood flow in different colors blue and red on a monitor in real time. One color goes from the placenta to the baby and the other one from the baby to the placenta. This way the location of the fetal vessels can be detected and the suspected diagnosis vasa previa can be confirmed or rejected.

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low placenta - early in pregnancy, the zygote (fertilized egg) implants in the uterus and forms a placenta. Implantation that occurs low in the uterus may result in a placenta that is close to or covers the cervical os (birth canal). Most low-lying placentas migrate (move) during later pregnancy towards the fundus (top of the uterus) and away from the cervix. A low placenta has four degrees of severity:
1. Low-lying placenta: The placenta is implanted low in the uterus close to the cervix but the edge of the placenta does not reach the cervical os.
2. Marginal placenta previa: The edge of the placenta is at the margin of the cervical os.
3. Partial placenta previa: The cervical os is partially covered by the placenta.
4. Total placenta previa: The cervix is completely covered by the placenta.

multi-gestational pregnancies - a pregnancy of twins, triplets and beyond

Ogita-test - test used to determine presence of fetal blood. The test will detect fetal hemoglobin down to a concentration of 20%

placenta previa an abnormal implantation of the placenta at or near the internal opening of the uterine cervix so that it tends to precede the child at birth usually causing severe maternal or fetal hemorrhage

steroid shots - administered when fetal lung maturity needs to be accelerated for early delivery prescribed when continuing pregnancy to term would compromise baby's healthy outcome.

succenturiate lobed placenta - A succenturiate (accessory) lobe is a second or third placental lobe that is much smaller than the largest lobe. Unlike bipartite lobes, the smaller succenturiate lobe often has areas of infarction or atrophy. The risk factors associated are advanced maternal age, primigravida, proteinuria in the first trimester of pregnancy, and major malformations in the fetus. The membranes between the lobes in such placenta can be torn during delivery, and the extra lobe can be retained after rest of the placenta has been delivered, with consequent postpartum bleeding.

tocolytes Denoting any pharmacological agent used to arrest uterine contractions: often used in an attempt to arrest premature labor contractions.
**Transvaginal Sonography** - Small device which is used within the vagina that utilizes high frequency (5.0-7.5 MHz) transducers, which offers improved resolution of normal anatomy and pathology in the female pelvis when compared to the transabdominal approach. This advantage is particularly apparent in the obese patient, the patient with a retroflexed/retroverted uterus and in identification of anatomy too small to be visualized transabdominally or that which cannot be palpated on manual exam.

**Trophotropism theory** (Theory developed by Dr. Harris Finberg, M.D.) trophotropism in placental tissue can be compared to the tendency of a plant to lean towards the sun to get the light it needs to survive. Since the lower segment of the uterus is not as nourishing as the upper segment, the placenta will grow upwards to reach more nourishing tissue.

**Vasa Previa** - (Latin name: Vasa Praevia) Vasa previa is a rarely (1:3000) reported condition in which fetal blood vessel(s) from the placenta or umbilical cord crosses the entrance to the birth canal, beneath the baby. The condition has a high fetal mortality rate (50-90%). This can be attributed to rapid fetal exsanguination resulting from the vessels tearing when the cervix dilates, membranes rupture or if the vessels become pinched off as they are compressed between the baby and the walls of the birth canal.

**Velamentous Insertion of the Cord** - Normally, the veins of the baby run from the middle of the placenta via the umbilical cord to the baby. Velamentous insertion means that the veins, unprotected by Wharton's jelly, traverse the membranes before they come together into the umbilical cord.

**About the International Vasa Previa Foundation**

**History**
The International Vasa Previa Foundation (IVPF) was established in January 2001. It is a result of the vasa previa e-mail group ([http://groups.yahoo.com/group/vasa_previa](http://groups.yahoo.com/group/vasa_previa)), founded on June 25th, 2000, for those who have experienced vasa previa in one way or another. Marlou van Dijck founded this group after the loss of her daughter, Julia, who died due to complications caused by vasa previa on May 26, 2000.

**Vision**
Creating a world without vasa previa deaths while supporting those whose lives have been impacted by it.

**Mission**
To educate the public and medical community worldwide about vasa previa and to modify medical standards and practices in a way that prevents fatal outcomes.

**An Avoidable Tragedy**
The International Vasa Previa Foundation agrees that vasa previa is an avoidable tragedy and should not be a devastating complication of pregnancy because it can be detected during pregnancy as early as the 16th week with use of transvaginal sonography in combination with color Doppler. Despite its severity, it is commonly unknown by women, midwives, and many obstetricians and is rarely detected during pregnancy. And often, inadequate decisions made during labor and delivery result in fetal mortality rates estimated to be as high as 95 percent.

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**Disclosures:**