

# Vasa Previa: When Labor Is Not an Option

Standardization in ultrasound assessment of umbilical cord visualization in recent years has allowed obstetricians to more precisely identify a rare but potentially devastating birthing complication called vasa previa, which can have a 90% fetal mortality rate if undetected before labor or ruptured membranes.

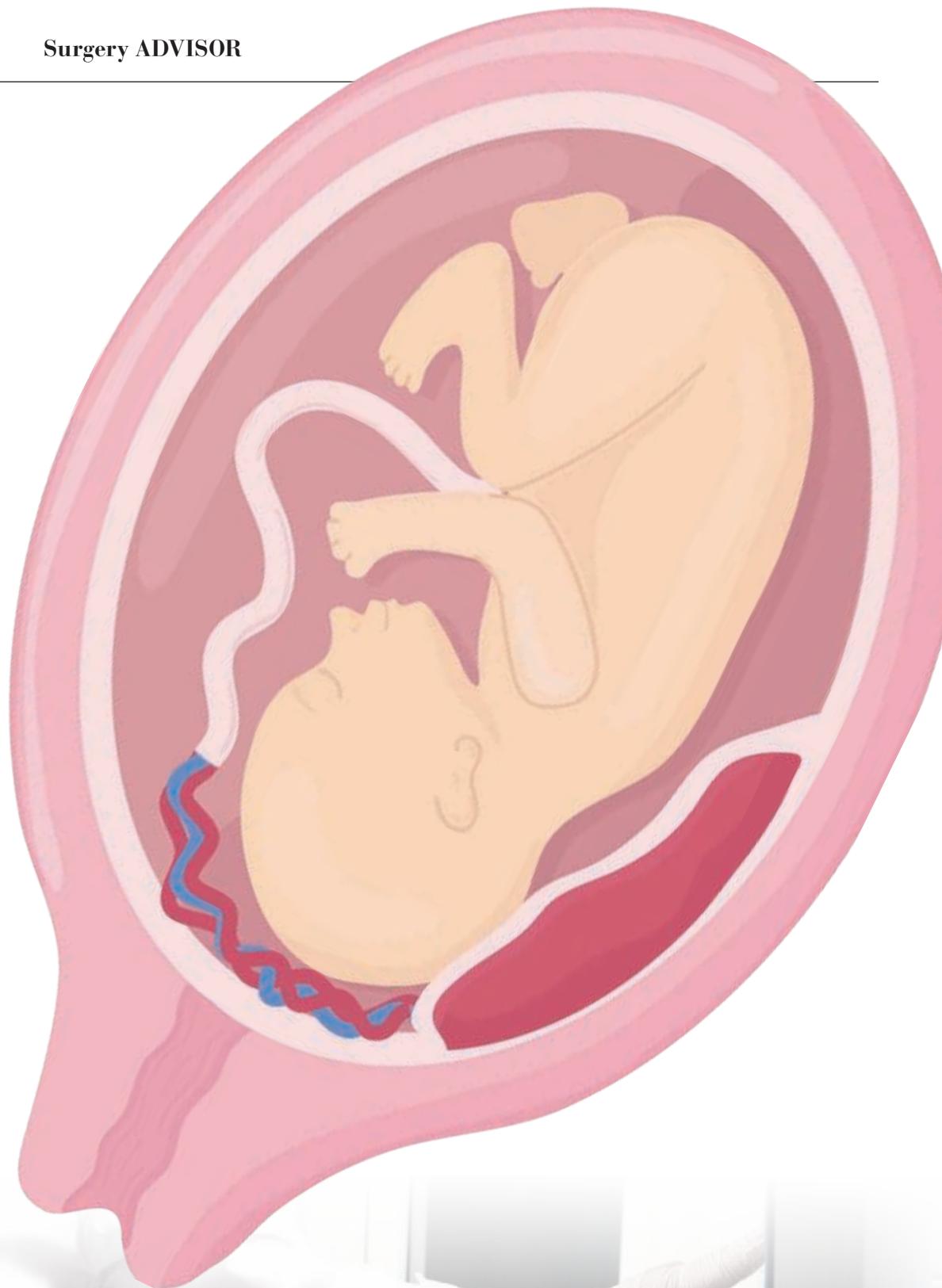
Presenting in about one of every 2,000 births, vasa previa occurs when unprotected fetal blood vessels run through the amniotic membranes and traverse the cervix. It can result in fetal hemorrhage, exsanguination and fetal death, according to Andrei Rebarber, MD, the co-director of the Maternal-Fetal Medicine Center at Englewood Health.



**Andrei Rebarber, MD**  
Co-Director, Maternal-Fetal  
Medicine Center

"It can be missed very easily because these are tiny fetal vessels that are difficult to distinguish with older gray scale ultrasound imaging," Dr. Rebarber said. "But using 3D transvag-

inal ultrasound with color-flow Doppler, we are now able to accurately identify when the fetal blood vessel is presenting over the cervix, localize vasculature within the uterine cavity and determine exactly how the vessel is coming off the placenta."



Using this information, Maternal-Fetal Medicine Center physicians schedule cesarean deliveries during the late pre-term period, resulting in better outcomes for both mothers and babies.

Risk factors for vasa previa, according to the International Vasa Previa Foundation, include:

- low-lying placenta or placenta previa in the second trimester, even if this resolves;
- bilobed or succenturiate-lobed placenta;
- velamentous insertion of the cord;
- in vitro fertilization pregnancies;
- multiple-fetal pregnancies; and
- history of uterine surgery or dilation and curettage.

"The American Institute of Ultrasound in Medicine and the American College of Radiology have only recently begun recommending routine screening for vasa previa in patients with these risk factors, but our team has been doing these screenings since 2005, and achieved excellent results that we have published in peer review journals," Dr. Rebarber said.

In a 2014 paper in the *Journal of Ultrasound in Medicine*, Dr. Rebarber and colleagues reviewed cases of vasa previa identified in their practice between June 2005 and June 2012 (2014;33[1]:141-147). They identified 31 vasa previa cases out of 27,573 patients, for an incidence of 1.1 per 1,000 pregnancies.

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"We watched very closely and managed these patients carefully, and timed their deliveries earlier to ensure that they were delivered prior to the onset of labor, typically at around 35 or 36 weeks," he said. Of the 29 cases that had full records available, the vasa previa resolved in five patients (17.2%). Of the 24 pregnancies with persistent vasa previa (five twin gestations and 19 singleton gestations), cesarean deliveries occurred at a mean length of gestation of 35 weeks, with 100% perinatal survival.

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## Perfecting Cerclage: Improving Outcomes for Cervical Insufficiency

In the past, if a woman had experienced a second-trimester miscarriage or preterm birth, she was often diagnosed with "cervical incompetence"—a functional or mechanical defect of the cervix. In subsequent pregnancies, a transvaginal suture, known as a cerclage, was placed to prevent premature cervical dilation. But today, maternal-fetal medicine specialists know that many of these women actually have nothing wrong with their cervix, and cerclage in those patients does not improve outcomes.

"We've been much more selective of the patients in whom we diagnose what we now call 'cervical insufficiency,'" said Nathan Fox, MD, the co-director of the Maternal-Fetal Medicine Center at Englewood Health. "We don't call it cervical incompetence anymore, because it implies that the cervix is either 'all good' or 'all bad,' whereas the fact is that it just isn't good enough for the job it needs to be doing in this pregnancy."

Today, Dr. Fox and his colleagues at the Maternal-Fetal Medicine Center perform cerclages only on high-risk patients, including those who, in their current pregnancy, have a very short cervix or a dilated cervix, or have had multiple prior miscarriages and possible cervical damage.

"Quality evidence shows that cerclage prolongs pregnancy in high-risk women with a short cervical length, with a history of preterm birth and with painless cervical dilation in the second trimester," Dr. Fox said. "In these cases, we are highly confident that our patients need the cerclage, but it also means that the circumstances of the pregnancy are much more complicated than when we were less selective and used to do them more readily."

Dr. Fox and his colleagues at the Maternal-Fetal Medicine Center typically use the modified Shirodkar technique for performing a cerclage, rather than the simpler McDonald "purse-stitch" technique. "Shirodkar requires much more surgical dissection, but it gives you a cerclage that is placed higher up on the cervix, which is thought to produce better outcomes," he said.

In a retrospective study, Dr. Fox and his co-investigators found that Shirodkar was associated with later gestational age (GA) at delivery compared with McDonald (mean GA at delivery, 36.98 weeks  $\pm$  3.39 vs. 33.34 weeks  $\pm$  6.37) and a lower likelihood of premature rupture of membrane (13.0 vs. 46.2). (*J Matern Fetal Neonatal Med* 2012;25[12]:2690-2692).

"We have very successful outcomes at Englewood with this approach, with patients who are able to bring their pregnancies to full term who might previously have been sent elsewhere, lost their pregnancy or told to terminate because it was hopeless," Dr. Fox said. "This is why we do what we do. It's very satisfying."



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