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Management of Vasa Praevia

Vasa praevia occurs when the umbilical vessels cross the membranes of the lower uterine segment above the cervix. Unsupported by either the umbilical cord or placental tissue, these vessels are at risk of rupturing at the time of spontaneous or artificial membrane rupture, with the subsequent bleeding of fetal origin. Immediate caesarean section is necessary to minimise perinatal morbidity and mortality which is extremely high in the setting of ruptured vasa praevia.

Vasa praevia is uncommon, with estimates of prevalence ranging from 1:1250- 1:2700.[1] Nevertheless, its' importance lies in the potential for serious maternal and fetal complications. The potential fetal risks associated with vasa praevia are sudden and catastrophic, and the maternal risks associated with emergency caesarean section under these circumstances considerable. Accordingly, screening for vasa praevia has been suggested as a means of improving outcomes.

Potential interventions which can improve outcomes among women with vasa praevia include:
- Admission to hospital in late pregnancy;
- Administration of corticosteroids for fetal lung maturation;
- Elective caesarean section prior to the onset of labour. The use of colour Doppler to identify fetal vessels preoperatively may be useful to avoid laceration intra-operatively; and
- Delivery in a facility with paediatric support and blood available in the event that aggressive resuscitation is necessary.

There are currently no agreed protocols for timing of admission to hospital or timing of elective caesarean section in women who are diagnosed with vasa praevia antenatally.

Current evidence confirms that antenatal diagnosis of vasa praevia is associated with improved outcomes. In a study of 155 women with vasa praevia, neonatal survival was 97% among those diagnosed antenatally compared to 44% among those who were not. The corresponding neonatal transfusion rates were 3.4% and 58.5%, respectively.[2]

While these data make a compelling case for screening for vasa praevia, universal transvaginal ultrasound with colour Doppler is not feasible, and in addition, not all cases can be diagnosed antenatally. For example, false positives may result from a loop of cord over the cervix, membrane separation or marginal placental sinuses. False negatives may occur when the angle of insonation for colour Doppler examination is unfavourable in relation to the fixed transvaginal probe. Even with tertiary level ultrasound, Baulies et al reported an antenatal detection rate of 78% among asymptomatic pregnant women.[3]

Nevertheless, the overwhelming majority of women with vasa praevia have one or more risk factors. [3] Thus, targeted screening with ultrasound examination should be considered in the presence of risk factors, ensuring that adequate views are obtained of the lower segment and

cervical region (whether acquired transabdominally or transvaginally) while recognising that some cases may still be missed.

Risk factors for vasa praevia include:

- Placenta praevia;
- Low lying placenta in the mid trimester;
- Bilobed placenta; succenturiate lobe;
- Velamentous cord insertion detected at the time of routine morphology ultrasound;
- IVF pregnancy;
- Multiple pregnancies.

The place of screening

While universal screening with transvaginal ultrasound for vasa praevia has not been shown to be cost effective, targeted screening for vasa praevia has been shown to be cost effective.[4] This includes:

- The use of colour Doppler at all routine ultrasound examinations of singleton pregnancies to identify the placental cord insertion (i.e. exclude velamentous insertion)[5], and
- Targeted ultrasound examination of the lower uterine segment and cervical region using colour Doppler (with appropriate low flow settings) in all pregnancies with risk factors for vasa praevia; i.e.
  - Low lying placenta/ placenta praevia: Review of placental site in later pregnancy in a patient with known low lying placenta should routinely prompt examination to exclude vasa praevia;
  - Bilobed placenta or succenturiate lobe;
  - Velamentous cord insertion;
  - Screening all multiple pregnancies; and
  - IVF pregnancies.

While antenatal diagnosis optimises outcome among women with known vasa praevia, undiagnosed cases will still occur, presenting in labour with variable decelerations and palpable vessels with intact membranes, and/ or intrapartum vaginal bleeding accompanied by acute fetal distress at the time of membrane rupture.

Vasa praevia should be suspected with intrapartum bleeding, particularly where there are known risk factors. While bedside tests are available to establish if vaginal bleeding is of fetal origin, accessing these tests is usually too slow of be of any clinical use. Most cases of vasa praevia are diagnosed following caesarean section for fetal bradycardia or sinusoidal fetal heart rate tracing.

Where fetal bleeding is suspected, plans for resuscitation and management of the severely anaemic fetus should be made, including specialist paediatric support and availability of O negative blood for immediate transfusion.

Useful link

RCOG Green-top guideline 27; Placenta praevia, placenta praevia accreta and vasa praevia: diagnosis and management.
Available at: http://www.rcog.org.uk/files/rcog-corp/GTG27PlacentaPraeviaJanuary2011.pdf

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