

Vasa praevia diagnosis in the mid trimester ultrasound

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The Australasian Sonographers Association (ASA) is the peak body and leading voice for sonographers in Australasia and leads the profession in delivering excellence in sonography to the community. A vital part of the ASA's dedication to promoting best practice in medical sonography involves producing and providing resources to guide sonographers in their work. This guideline has been developed by the authors and reviewed by the ASA Special Interest Group Obstetric and Gynaecology (SIG O&G) committee and the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG). The guideline has been approved for release by the ASA Sonographer Policy and Advisory Committee (SPAC).

1 | INTRODUCTION

Vasa praevia is an obstetric condition where fetal vessels (unsupported by either the Wharton's jelly in the umbilical cord or placental tissue) run through the amniotic membranes in close proximity to (<20mm), or are overlying the cervical internal os (IOS).¹⁻⁴ These unsupported vessels are at risk of shearing at the time of membrane rupture causing rapid fetal exsanguination. The estimated incidence of vasa praevia is 1:1250 - 1:4667 pregnancies.¹⁻⁴ Current evidence demonstrates that antenatal diagnosis of vasa praevia is associated with improved perinatal outcomes.³ If vasa praevia is undiagnosed and appropriate care is not instituted the perinatal survival rate is 56%¹ versus 97% if diagnosed prenatally.^{1,3}

Vasa praevia has three main risk factors; velamentous cord insertion, succenturiate lobe and a low lying placenta.^{2,3} Universal screening of the lower uterine segment with colour Doppler should be performed transabdominally at every mid trimester ultrasound as 17% of vasa praevia cases will have no identifiable risk factors on ultrasound.^{3,5} This is achieved by performing a dynamic assessment sweeping the transducer longitudinally and transversely with a colour Doppler box (on appropriate settings) over the lower uterine segment to identify vessels within 20mm of the cervical IOS.^{2,3,6}

2 | RECOMMENDATIONS

- Vasa praevia is diagnosed when there is a fetal vessel either covering or located within 20mm of the cervical IOS.^{3,4}
- A dynamic sweep of the transducer with colour Doppler over the lower uterine segment (to the lateral uterine walls) should be performed and documented at every mid trimester ultrasound.^{2,3,6}
- A visible risk factor, poor visualisation or potential fetal vessel in the lower uterine segment should prompt a transvaginal ultrasound as it has a higher specificity and improved accuracy than transabdominal approach.^{2,3,7}
- The location of the placental cord insertion should be identified at every mid trimester ultrasound with 2D imaging and colour Doppler.³ If a velamentous cord insertion is detected further investigation with transvaginal ultrasound of the lower uterine segment to exclude vasa praevia is recommended.²⁻⁴
- Universal screening of the placenta architecture is recommended at every mid trimester ultrasound.⁷ If a succenturiate lobe placenta is identified, documentation of communicating vessels between the two placental components is advised. Further investigation with transvaginal ultrasound of the lower uterine segment to exclude vasa praevia is recommended.^{2,3}
- A measurement of the lower placenta edge to the cervical IOS should be performed at every mid trimester ultrasound. If the distance is less than 20mm the placenta is low lying.^{2,3,7} and a transvaginal ultrasound should be performed to improve accuracy of measurement⁸ and exclude vasa praevia. If the lower placental edge cannot be visualised transabdominally a transvaginal ultrasound should be performed. If a low-lying placenta is identified a follow up transvaginal ultrasound should be performed between 32 - 34 weeks to exclude vasa praevia and placenta praevia.^{3,4,7}
- Pulse wave Doppler is the most accurate technique to determine if a vessel is of fetal origin. If arterial the vessel rate should approximate the fetal heart rate (FHR); if venous there will be no phasic change with maternal valsalva.^{2,3}

- Detected vasa praevia should be reported to the referring clinician promptly as the patient will require tertiary level pregnancy management.³
- Infection control protocols must be followed when performing a transvaginal ultrasound.⁹

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