Case Report: A Prenatally Diagnosed Case Of Vasa Praevia And Its Subsequent Management

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ABSTRACT

Vasa Praevia is uncommon and often goes undiagnosed, leading to significant foetal morbidity and mortality. Below illustrates that this condition can be diagnosed antenatally and the precautionary measures taken to ensure an a good foetal outcome.

Keywords: foetal exsanguination, intrapartum haemorrhage, placental aberrations

A healthy 33-year-old grandmultiparous housewife (Madam Z) booked in Singapore General Hospital antenatal clinic at 22 weeks gestation. She has previously undergone 6 normal vaginal deliveries, and 1 elective caesarean section for breech. Booking investigations and parameters were normal. Screening scan showed parameters equal to dates and no foetal abnormalities. However, placenta was noted to be lower posterior reaching cervical os. Subsequent growth scan at 26 weeks was satisfactory, but placenta was still low-lying.

At 31 weeks gestation, patient presented to the labour ward for 1 day history of painless, mild antepartum haemorrhage. Foetal movement was satisfactory. Upon admission, blood pressure was 128/68mmHg and pulse rate was 80 beats per minute. Uterus felt soft with no contractions and non-tender. Lie of the foetus was longitudinal and presentation cephalic. Speculum showed a closed cervical os. Foetal well-being was confirmed by a reactive cardiotocograph.

Ultrasound showed a type 3 posterior placenta praevia with tip reaching cervical os. There were small vessels crossing the internal os, raising the suspicion of vasa praevia. There were no retroplacental clots and estimated foetal weight 1,997gm. Differential diagnosis included vasa praevia and umbilical cord overlying the cervical os. Repeat scan an hour later excluded the possibility of umbilical cord lying above the cervical os, thereby increasing the likelihood of vasa praevia (see Fig. 1, overleaf). Doppler study was used to confirm the presence of vessels.

Haemoglobin was 10.1g/dl and coagulation screen normal. Oral nifedipine for tocolysis and intramuscular betamethasone to improve foetal lung maturity was administered in anticipation of a preterm delivery should a massive antepartum haemorrhage occur. Patient had only minimal per vaginal staining during her 3-day inpatient stay and subsequently discharged against medical advice.

Madam Z defaulted subsequent antenatal follow-up and presented 1 month later at 36 weeks gestation with a second episode of painless antepartum haemorrhage, soaking 3 pads. Cardiotocograph demonstrated a reactive trace and weak irregular uterine contractions. Admission haemoglobin was 11.5g/dl and coagulation screen normal. Patient underwent an emergency caesarean
section in view of antepartum haemorrhage with threatened pre-term labour, placenta praevia and vasa praevia. She declined postpartum sterilisation. Intraoperatively, vasa praevia was confirmed (see Fig. 2, overleaf). Placenta was posterior and low-lying. Both tubes and ovaries were normal. Baby was delivered with Apgar score of 8 at 1 minute and 9 at 5 minutes. Birthweight was 3,565gm. Madam Z had an uneventful post-operative recovery and both mother and baby were discharged on the third post-operative day.

DISCUSSION
Vasa praevia is an uncommon condition (occurring in about 1 in 3,000 births), whereby the foetal blood vessels traverse the lower uterine segment beneath the presenting part of the foetus, with neither the support of the umbilical cord nor the placenta. Vasa praevia can result in painless vaginal bleeding in the second and third trimesters of pregnancy at time of spontaneous rupture of membranes, amniotomy or cervical dilatation. Rapid foetal exsanguination leading to high perinatal morbidity or mortality results if this condition is not recognised prior to the abovementioned events. Even if the foetal blood vessels do not rupture, the baby may suffer from lack of oxygen due to compression on the blood vessels between the baby and the walls of the birth canal.

Risk factors for vasa praevia include placental abnormalities like placental praevia, abnormally shaped placentas (bilobed or succenturiated) or multiple pregnancy. Previous studies have quoted a 32.9% incidence of vasa praevia amongst patients with placental abnormalities, compared to the estimated prevalence in the general population of 4–5%. Studies also suggest that women whose pregnancies result from in vitro fertilisation (IVF) may also be at increased risk. A study of 100 placentas from IVF pregnancies revealed 14 cases of velamentous insertion among them.

Fig. 1. Ultrasound diagnosis of vasa praevia with Doppler study.
Fig. 2. Velamentous cord insertion — notice cord insertion away from the placenta bed.
In 1987, Gianopoulos et al. first described the antepartum ultrasonographic diagnosis of vasa praevia. Before this, most reports had focused on the universal dismal outcomes with pregnancies complicated by vasa praevia. Since that initial report, several small case series have demonstrated the ability of ultrasonography and colour Doppler to diagnose vasa praevia prenatally and have suggested improved outcomes associated with prenatal diagnosis of the condition.

Vasa praevia can be detected during pregnancy as early as the 16th week of pregnancy with the use of high resolution transvaginal sonography in combination with colour Doppler. Checking the placental cord connection for velamentous cord insertion with colour Doppler during all routine obstetrical ultrasounds is recommended. In addition, vasa praevia must be ruled out in all cases of suspected cases of velamentous cord insertion, placenta praevia, abnormally shaped placentas, multiple pregnancies or pregnancies resulting from in vitro fertilisation. It is important to look for vessels near the cervix. However, not all cases of vasa praevia would necessarily be recognised by sonography, due to body habitus. Besides, vessels that course over the cervix in a transverse rather than an anteroposterior direction may be missed.

When diagnosed during the antepartum period, treatment plans include tocolytics to inhibit any threatened pre-term labour and steroid treatment given to develop foetal lung maturity, in anticipation for any pre-term delivery. Patients should be advised to avoid sexual intercourse, vaginal examinations and heavy straining during bowel (use of stool softeners) softeners.

A point to note is that not all cases of vasa praevia can be diagnosed prenatally. Hence, a high index of suspicion is still needed at the time of amniotomy is required, should there be foetal deceleration or vaginal bleeding. However, the foetal outcome in clinically diagnosed vasa praevia is almost invariably poor.

CONCLUSION

The learning point of this article is that every case of placenta praevia should be screened on high resolution ultrasound machine with Doppler study for vasa praevia. In addition, there is a case for routine screening for vasa praevia especially since the condition, though rare, is catastrophic.

REFERENCES


