MEMO

To: Obstetrical care providers, BCW MAP US reporting MDs, sonographers and clerical staff

RE: **Diagnosis and ultrasound follow up of low-lying placenta and placenta previa**

From: Dr Chantal Mayer, Medical lead BCW Ultrasound

Date: April 25, 2022

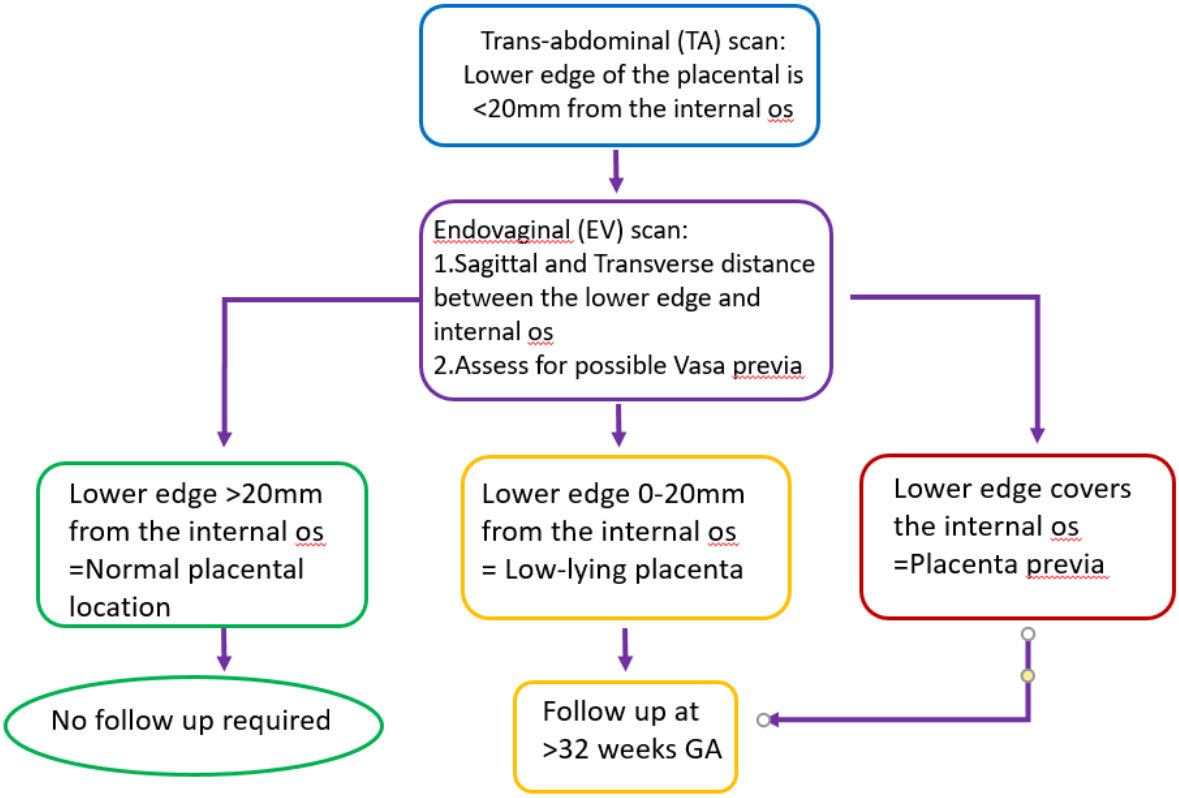
The objective of this communication is to clarify the BCW Obstetrical Ultrasound department's practice regarding screening, diagnosis of low-lying placenta, placenta previa, and recommended follow up ultrasound schedule (figure 1). *BCW MFM endorses the 2020 SOGC Guideline on diagnosis and management for placenta previa* (1). However, the BCW Ultrasound department may not have the capacity to offer routine follow up of low-lying placenta for all patients where this has been identified.

Routine follow up of low-lying placenta by community facilities is appropriate. Referrals for possible vasa previa, low-lying placenta or placenta previa *in the context of increased risk for a placenta accreta spectrum (PAS) disorder*, third trimester antepartum hemorrhage and third trimester follow up of placenta previa are given priority for booking at BCW ultrasound.

Definitions:

Low-lying placenta: the lower edge of the placenta is located between 0 and 20 mm from the internal cervical os.
Placenta previa: the lower edge of the placenta covers the internal os.
Normal placental location: the lower edge os the placenta is located more than 20 mm from the internal os.
Vasa previa: Most commonly defined as the presence of fetal vessels in the membranes overlying the cervix or less than 2 cm from the internal os. The presence of vessels <5cm from the os should be documented and reported as this may inform timing and mode of delivery (14).

Figure 1: Routine ultrasound screening and recommended follow up algorithm for low-lying placenta, placenta previa and vasa previa



Technical considerations:

When performing an endovaginal (EV) scan for any indication, a cine clip is routinely obtained in the sagittal and transverse plane.

Assessment for vasa previa: When there is a low-lying placenta or placenta previa, care is taken to assess for the presence of fetal vessels in the membranes, which are more commonly associated with a velamentous or marginal placental cord insertion or a succenturiate lobe. Fetal vessels are identified using color and pulsed Doppler imaging and their relationship and distance to the internal os is documented in detail, for any fetal vessels identified within 5cm of the internal cervical os. MFM or OBGYN consultation is recommended when fetal vessels are identified within 5cm of the cervical internal os as there is no evidence available to support a "safe distance" to allow vaginal delivery (14).

Low-lying placenta/ placenta previa:

The distance between the lowest point of the placenta and the internal os is measured along the uterine wall. When a marginal sinus is present, it is included as part of the placenta; the

distance between the lower edge of the marginal sinus and the internal os is measured. When the cervix is short or beaking, using the distance from the lower edge of the placenta to the presumed location of the internal os is suggested (1).

Explanatory notes:

1. **Why perform an endovaginal scan when a placenta previa or low-lying placenta is suspected on transabdominal scan at the time of detail scan?**
   Transabdominal (TA) scanning in the sagittal and transverse planes is used for documenting location of placenta and placental cord insertion. When the lower edge of the placenta is not well seen or is suspected to be either low lying or previa, or vasa previa is suspected, an endovaginal scan is performed because of its ability to better assess the relationship between the placenta and cervix, its lower false positive rate related to technical limitations and overall better accuracy (3,4,5). In a prospective study of 168 patients, endovaginal ultrasound reclassified 26% of cases of low-lying placenta or placenta previa identified on transabdominal scan (6).

2. **Is follow up of a low-lying placenta at the detail scan required?**
   A finding of a low-lying placenta prior to 24 weeks GA confers a low risk for either persistent low-lying placenta or placenta previa at or near term. A retrospective cohort in which 1416 pregnancies had a low-lying placenta between 16-24 weeks had a 1.6% risk of persistent low-lying placenta near term. A second retrospective cohort of 1663 women with a low-lying placenta had a 99.5% resolution rate when the lower edge was 10-20 mm at the time of routine detail scan. These findings were validated in a prospective cohort of 958 women with a low-lying placenta or placenta previa at 18-24 weeks GA. Low-lying placenta persisted in 1.4% of women. Modifying cut-off values to a distance between the lower edge and the internal os pf 15 mm when the placenta is located posteriorly and 5 mm when the placenta is located anteriorly has been suggested in order to decrease unnecessary follow up scans without decreasing screening sensitivity (7).

   Although resolution of a low-lying placenta at the detail ultrasound is expected, a routine ultrasound follow up at 32-36 weeks GA is recommended (1,2) because of the potential impact on planned mode, timing and site of delivery for the 1.5% risk of low-lying placenta persisting in the later third trimester. Follow up at an earlier GA than 32 weeks is indicated in patients at high risk for preterm delivery and in those with antepartum hemorrhage.

3. **What is the follow up for persistent low-lying placenta at 32 weeks GA?**
   Follow up and management plan for low-lying placenta is individualized on the basis distance between the lower edge and the internal os, gestational age, patient characteristics and logistics around delivery planning, and may include a final follow up at 36 weeks for the purpose of finalizing delivery planning. Consultation with OBGYN is recommended.

4. **A placenta previa is diagnosed at the detail scan; what other information may be available from the detail ultrasound report to assist with counselling and planning?**

   A. Findings favouring resolution versus persistence of placenta previa:
   Approximately 20% of placenta previa diagnosed at the time of detail scan persist to the third trimester (7). The following may help predict chance of resolution:
   - An anterior placenta previa is more likely to resolve than a posterior one (7)
   - The extent to which placenta covers the os (4):
     - Less than14 mm: placenta previa likely to resolve by delivery
     - 15-25 mm: 20% overall risk for persisting until delivery
     - More than 25 mm: More than 40% risk of persistent placenta previa at delivery

   B. Findings predictive of antepartum bleeding :
   - Thickness of placental edge (more than10 mm) versus thin, avascular tissue (11,13).
   - Presence of lower edge marginal sinus overlying the internal os (9, 10)
   - Cervical length of 30 mm or less (11,12)

5. **Risk assessment for placenta accreta spectrum (PAS) disorders:**

   Antenatal diagnosis of PAS is challenging due to highly variable constellation of associated ultrasound findings, limiting diagnostic accuracy. Detailed imaging of the placental/uterine and uterine/bladder interfaces including color Doppler, and recommendations for follow up and/or MRI are included when there is an anterior low-lying placenta or a placenta previa in the context of known risk factors for PAS disorders.

   Major risk factors for a PAS disorder include: a history of placenta accreta in a previous pregnancy, previous numbers of caesarean delivery and/or uterine surgery, and repeated endometrial curettage (2). To optimize diagnostic accuracy, inclusion of known risk factors for a PAS disorder in the ultrasound requisition, including the number of previous caesarean sections and the type of incision is crucial.

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V2: Approved at BCW MFM Sonologist meeting 14/04/2022

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