PLACENTA AND CERVIX

Obstetric Workshop 2019

Placenta Size/Thickness

<table>
<thead>
<tr>
<th>LARGE (thick)</th>
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<tbody>
<tr>
<td>Homogeneous</td>
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<tr>
<td>Diabetes</td>
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<tr>
<td>Anaemia</td>
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<tr>
<td>Hydrops</td>
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<tr>
<td>Infection</td>
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<tr>
<td>Aneuploidy</td>
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<tr>
<td>Heterogeneous</td>
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<tr>
<td>Molar</td>
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<tr>
<td>Triploidy</td>
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<tr>
<td>Placental haemorrhage</td>
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</tbody>
</table>

Small (thin)

- Maternal circulation problems eg hypertension
- Infection
- IUGR
- Chromosome abnormality

Placental Site

- Anterior, posterior, fundal, lateral
- Low lying placenta <2cm from os
- Identifying potential placenta praevia
  - Review scan at 32-34 weeks
- Placental "migration"
  - Growth of lower uterine section
  - Less likely if covering the os at 20 weeks by >1.5cm

Distance to os

Normal placenta 2-2.5 cm thick at 20 W
Same mm as number of weeks gestation: 5-40

Small (thin)
Placenta Praevia

- Report distance from os
  OR
- Distance covering the os
  - > 2cm
  - < 2cm - transvaginal

Placenta Praevia – False Positive

- Overfull bladder
- Braxton-hicks

- Continue with scan and come back to later

Placental Lakes

- Sonolucent areas of fetal vessels or blood filled lakes

Extreme placental lakes

- Normal variant!

Circumvallate Placenta

- Placental margins are folded or elevated up
- Associated with PROM, haemorrhage, IUGR and abruption

Succenturiate lobe

- 1 or more extra lobes
- Lobes are connected by vessels
Succenturiate lobe and Vasa Praevia
- Vasa praevia
- vessels running across the cervix

Abruption
Primary Causes:
- Maternal trauma
- Maternal hypertension
- Maternal substance abuse
- IUGR
- Polyhydramnios
- Prolonged rupture of membranes
- Previous abruption

Less significant causes:
- Short umbilical cord
- Placental abnormality eg circumvallate
- Needle puncture

Braxton-Hicks Contractions
- Transient myometrial spasms
- Mimic pathology
  - fibroids,
  - hematoma,
  - succenturiate lobe
- Distort lower uterine section

ACCRETA, INCRETA AND PERCRETA

Accreta- adherence of placenta into the myometrium (most common)
Increta- extension deep into myometrium
Percreta- penetration of the uterine serosa

Abruption
- Premature separation of the placenta from the uterus
- Hypoechoic region - behind or near edge
- Retroplacental complex

Invasion of placenta
- Accreta adherence of placenta into the myometrium
- Increta extension deep into myometrium
- Percreta penetration of the uterine serosa
Placental accreta

Risk factors
- Placenta praevia
- Advanced maternal age
- Previous LUSCS
- Scars
- Submucosal fibroids
- Geographic - thailand, cuba

Outcome
- Retained placenta post partum
- Uterine rupture
- Hysterectomy

Ultrasound appearances
- Loss of retro-placental tissue
  - Normal 1-2 cm
- Multiple hypoechoic-anechoic spaces in placenta (lacunae)
- Thick, heterogeneous
- Marked peri-placental vascularity on colour Doppler
- Interface obscured

Placental Tumours

Molar pregnancy
Gestational trophoblastic disease
- Complete
- Partial - coexists with fetus (usually abnormal)
- High BHCG

US appearance
- No fetal parts (complete)
- Inhomogeneous texture - snowstorm
- Large vesicles

Chorioangioma
- Benign tumour
- Can cause complications if extremely large

Placental Calcifications
- Maturity and age
- Smoking
- Heparin and aspirin use

Fibroids
- Localise and determine distance from cervix
- Assess later in T3 for management of delivery
Cord

- Cord inserts in centre of placenta 90%
- Cord insertion >2cm from placental edge

Why is determining a marginal cord insertion important?

Velamentous Cord Insertion

- What is it?
  - Inserts into fetal membranes outside placenta margin
  - Travels within the membranes to the placenta between amnion and chorion
- Incidence?
  - 1% singleton pregnancies
  - Increased incidence in:
    - Twin pregnancy (9%)
    - Presence of IUCD
    - Single Umbilical Artery
    - Placenta Previa
- Marginal <2cm

Cervix

- Normal
  - TA > 3.5 cm
  - TV > 2.5cm
- Length assessment
  - empty or partially filled bladder for transabdominal
  - transvaginal for high risk patients (most accurate)
  - translabial – PROM cases
- Take note of previous history
  - pre-term labor / delivery
  - miscarriages (late)
  - previous surgeries (e.g. cone biopsy, STOPs)
  - uterine malformation

Cervix: TA measurement

3.5 cm at 18-20 week scan

Velamentous Cord Insertion

- Complications;
  - Vasa Previa
  - IUGR
  - Growth discordance in twins
  - Rupture during delivery – catastrophic outcomes for mother and fetus!
Is the cervix short??

- External vs internal
  - Low tolerance for accepting an abdominally measured cervix
- Internal if
  - Poor visualisation
  - Borderline measurement
  - Past hx of:
    - cx incompetence
    - cx surgery
    - traumatic birth (forceps)
    - surgical TOP

Cervical Incompetence

- 1% pregnancies Callen
- < 2.5 cm
- Tracking
- < 1.5 cm
- Cx suture (cerclage)

Cervix – Internal vs External

- External vs internal
- Internal if
- Overfull bladder = over measuring

Cervical Incompetence

- Cervical tracking
- Scans every 1-2 weeks b/w 16-24 weeks gestation
- TV scan
- Watch cervix for 5 minutes
- Measure length
- Use the shortest measurement

Open cervix
**Vasa previa**

- Fetal blood vessels cross internal os
- Rare
  - 1:1250-2700 births
- High fetal mortality
  - Haemorrhage occurs when vessels are torn at delivery

![Image of Vasa previa](image1)

**Cervix - Vasa Previa**

- High risk
  - Bi-lobed, succenturiated and low lying placentas
  - IVF pregnancies
  - Multiple pregnancies
- Pitfalls
  - Flash artefact
  - Maternal vessels

![Image of Cervix - Vasa Previa](image2)

**Conclusion**

- Placenta
  - Shape, size and position matter
- Cord
  - Insertion position important
- Cervix –
  - Careful assessment of length
  - Put on the colour

![Image of Conclusion](image3)