ISUOG Basic Training
Making a Decision – Normal or Not?
Learning objectives

At the end of the lecture you will be able to:

• Describe how to perform a transverse overview/sweep of the fetal body from neck to sacrum

• Recognise the differences between the normal & most common abnormal ultrasound appearances that can be excluded by the transverse overview/sweep
Key questions

1. What probe movements are required to perform a transverse overview/sweep of the fetal body correctly?

2. Which parts of the fetal anatomy are best assessed using this overview/sweep?

3. What are the key ultrasound features that distinguish between the correct & the incorrect view of a vertebra in cross section?

4. Which abnormalities should be excluded after performing a transverse overview/sweep correctly?
Transverse sweep – overview 2

Transverse sweep from neck to sacrum

• Full assessment of thorax, abdomen & pelvis

• Visualisation of the vertebrae

• Anatomical landmarks

Slide, rotate, slide
Anatomical landmarks – overview 2

Transverse sweep from neck to sacrum

• Full assessment of thorax, abdomen & pelvis

• Visualisation of the vertebrae
Transverse sweep – overview 2
Transverse sweep - overview 2

- Slide from the head down to the sacrum
- Ideal position for spine, however no fluid between spine & uterine wall
Transverse sweep - overview 2

- Ideal position for spine, but sparse fluid between spine & uterine wall
• Good position for spine, & with fluid between spine & uterine wall
Transverse sweep- overview 2

- Good position to observe spine, thorax & abdominal structures
Transverse sweep - overview 2

- Poor visibility of the spine
- Good position to observe thorax & abdominal structures
Spina bifida

- The vertebrae become U-shaped instead of their normal triangular form
- Neural tissue is protruding
Spina bifida

Confirm any anomaly in more than 1 plane
Transverse sweep - overview 2 thorax

What you can exclude:

- Situs anomalies
- AVSD
- Univentricular heart
- Ectopia cordis
- Significant pericardial effusion, > 4mm
What you can exclude:

- CPAM
- Left sided diaphragmatic hernia
- Significant pleural effusion >4mm
- Skin oedema
- Spina bifida

Confirm in 2 planes
Transverse sweep - overview 2 abdomen

What you can exclude:

- Situs abnormalities
- Ascites
- Small/absent stomach
- Duodenal atresia
- Echogenic bowel*
- Gastroschisis / omphalocele
Transverse sweep- overview  2 abdomen

What you can exclude:

- Bilateral renal agenesis
- Cystic renal dysplasia
- Lower urinary tract obstruction
- Renal pelvis dilatation
- 2 vessel cord
- Sacrococcygeal teratoma
Making a decision

When encountering a structure or measurement not compatible with normal views & biometry:

• Confirm in more than 1 plane
• Confirm measurement at least twice – consider if in correct plane
• Continue to complete the ultrasound scan & assess whether the abnormal structure / measurement can be reproduced
• Share with parents your concern the fetus may not be normal only when the scan is finished
• Request opinion of your supervisor
Making a decision

• Is this posterior horn measurement >10 mm?

9.6 - 9.9 mm
10 mm
10.4 mm
Making a decision

• Is the stomach absent?

Reassess after 10-20 minutes
Making a decision

• Is the bowel echogenic?
• Look at BMI:
  – Low BMI & posterior placenta may cause a too perfect view
  – Turn down the gain to assess whether bowel as bright as bone

Not echogenic
Key points

1. When performing the transverse sweep, the position of the spine is vital for the evaluation of anatomical structures.

2. The spine should appear as 3 ossified centres in a triangular shape, covered by skin.

3. When the 3 ossified centres appear U-shaped, think of spina bifida & confirm the anomaly in multiple planes.
Key points

4. When encountering an abnormal appearance or measurement continue to complete the scan, confirm in multiple planes & with multiple measurements, before communicating with the parents your final decision to refer.

5. It is not your role to make a diagnosis, but you should be familiar with the range of normal appearances.

6. Whenever you are in doubt → refer.