



# 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?

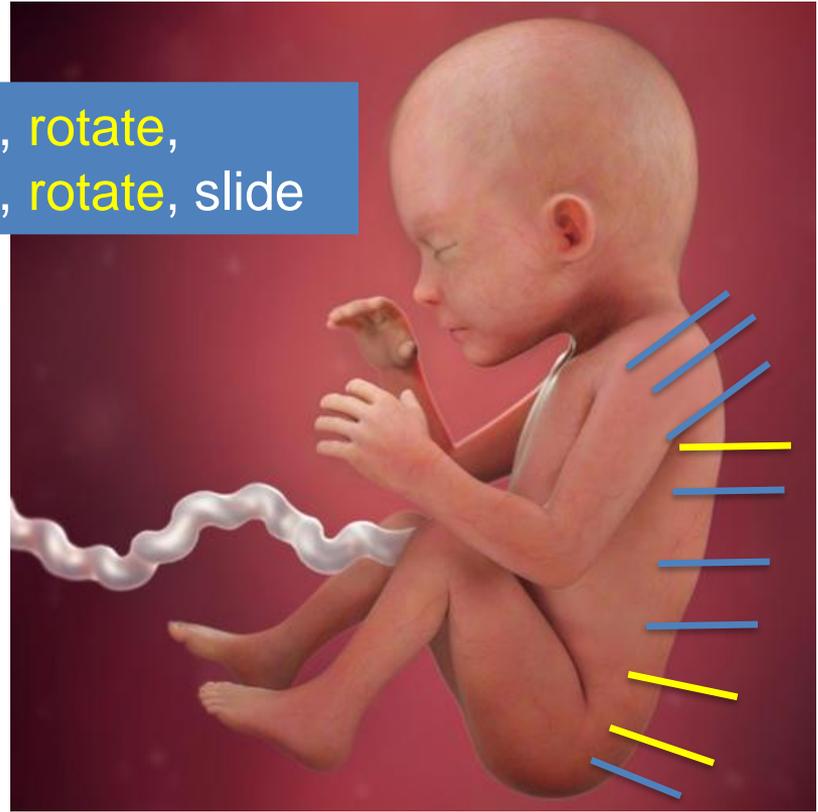
# Transverse sweep – overview 2



Transverse sweep from neck to sacrum

- Full assessment of thorax, abdomen & pelvis
- Visualisation of the vertebrae
- Anatomical landmarks

Slide, rotate,  
Slide, rotate, slide

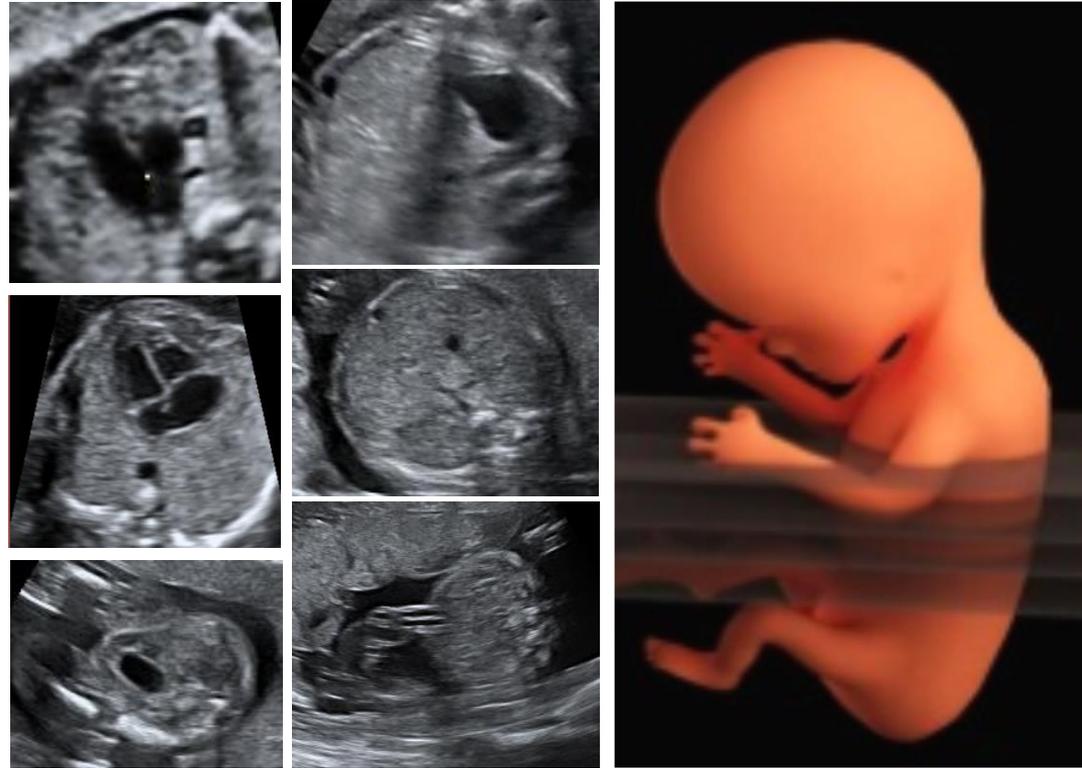


# Anatomical landmarks – overview 2

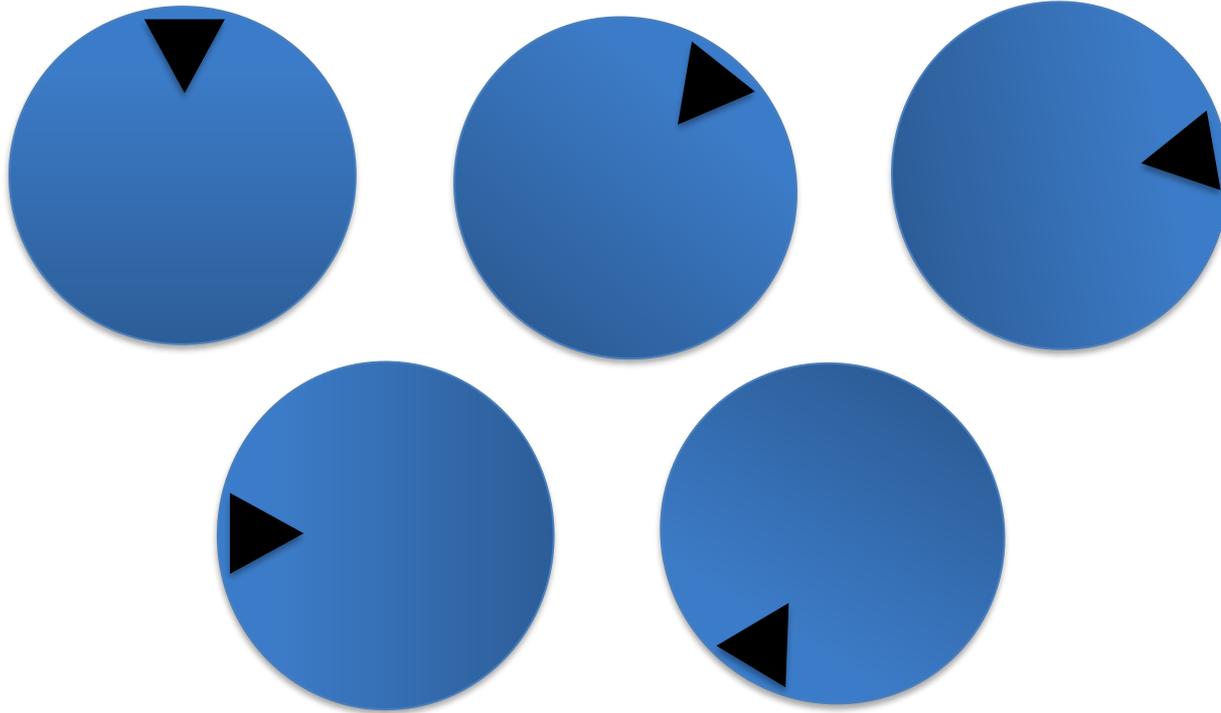


Transverse sweep from neck to sacrum

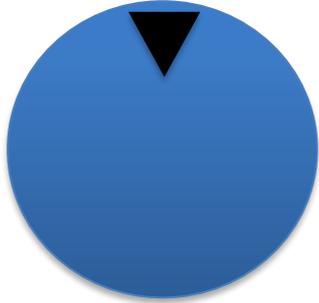
- Full assessment of thorax, abdomen & pelvis
- Visualisation of the vertebrae



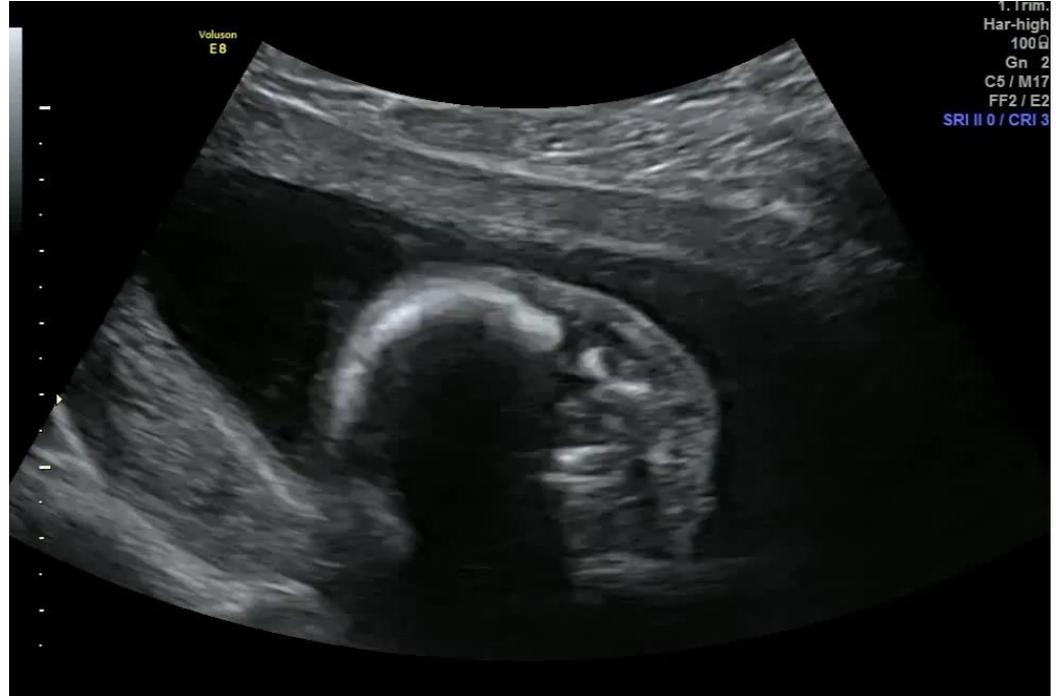
# Transverse sweep – overview 2



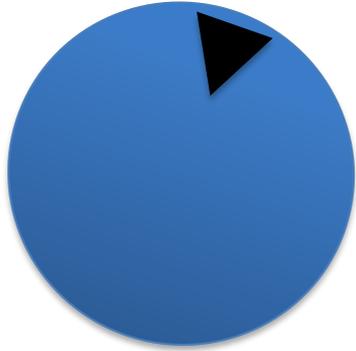
# Transverse sweep- overview 2



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



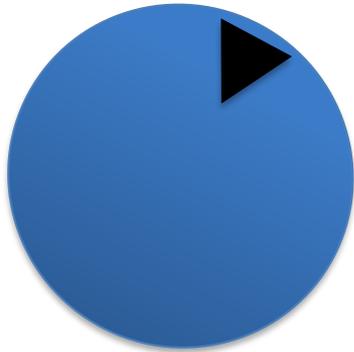
# Transverse sweep- overview 2



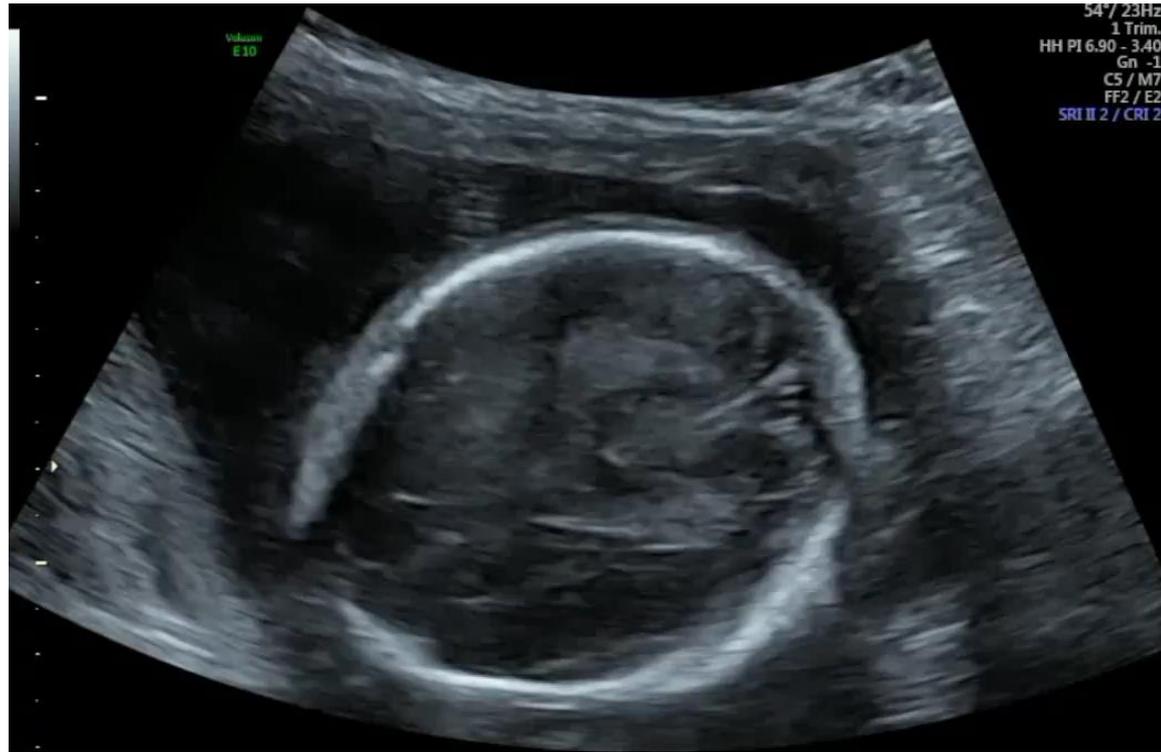
- Ideal position for spine, but sparse fluid between spine & uterine wall



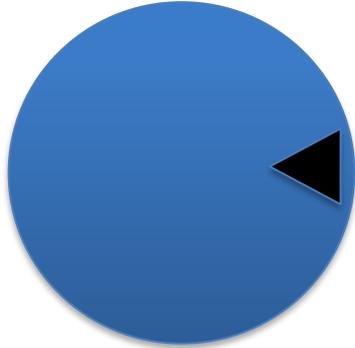
# Transverse sweep- overview 2



- Good position for spine, & with fluid between spine & uterine wall



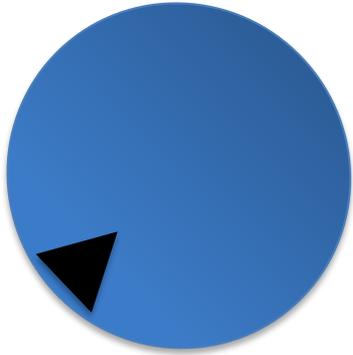
# Transverse sweep- overview 2



- Good position to observe spine, thorax & abdominal structures

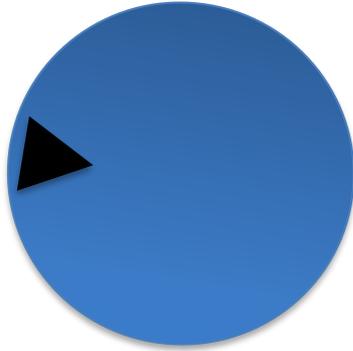


# Transverse sweep- overview 2



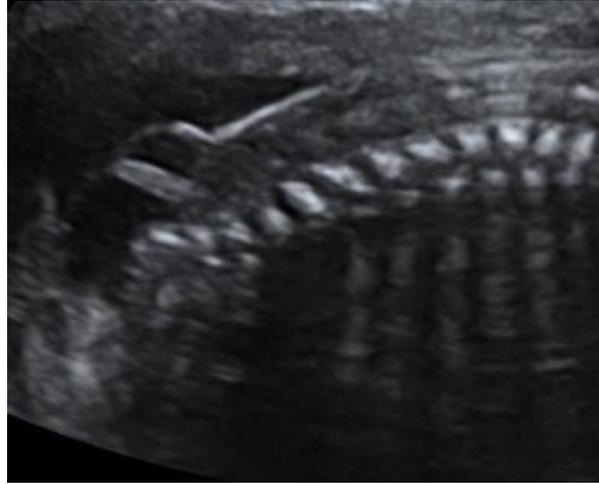
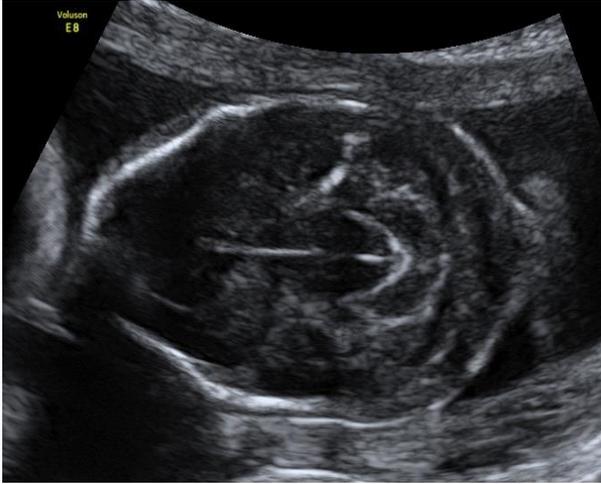
- Poor visibility of the spine
- Good position to observe thorax & abdominal structures

# Spina bifida



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

# Spina bifida

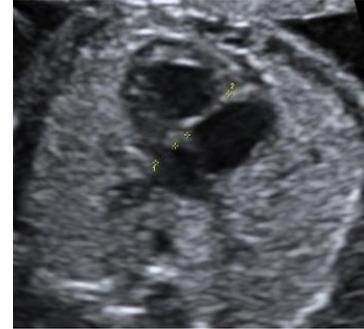


Confirm any anomaly in more than 1 plane

# Transverse sweep - overview 2 thorax

What you can exclude:

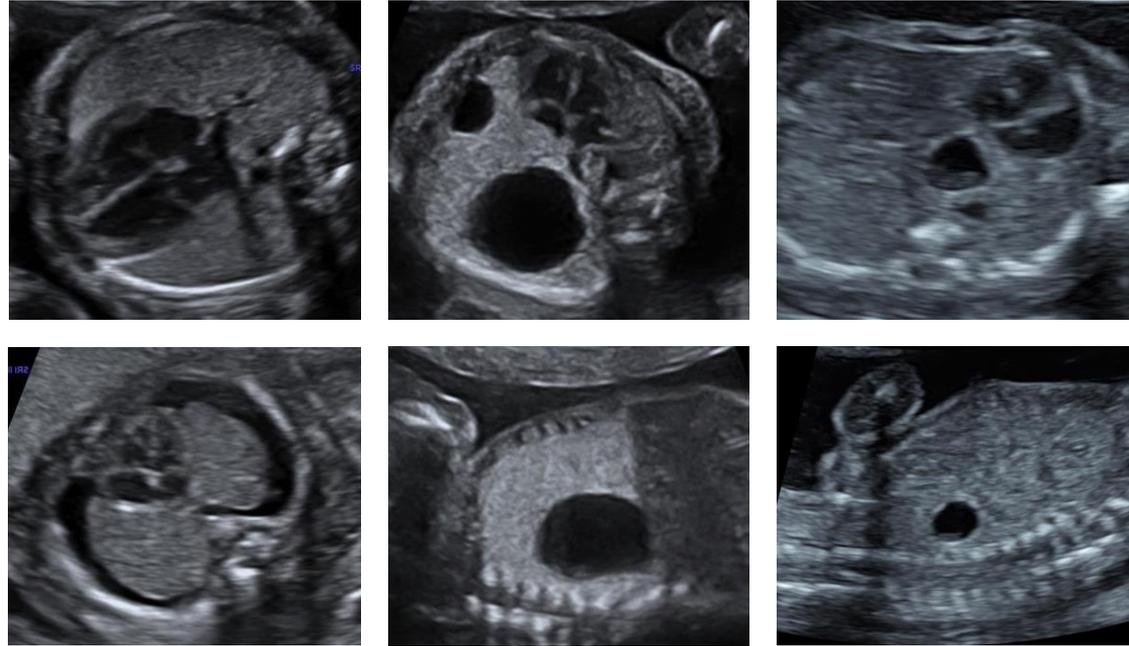
- Situs anomalies
- AVSD
- Univentricular heart
- Ectopia cordis
- Significant pericardial effusion,  $> 4\text{mm}$



# Transverse sweep - overview 2 thorax

What you can exclude:

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

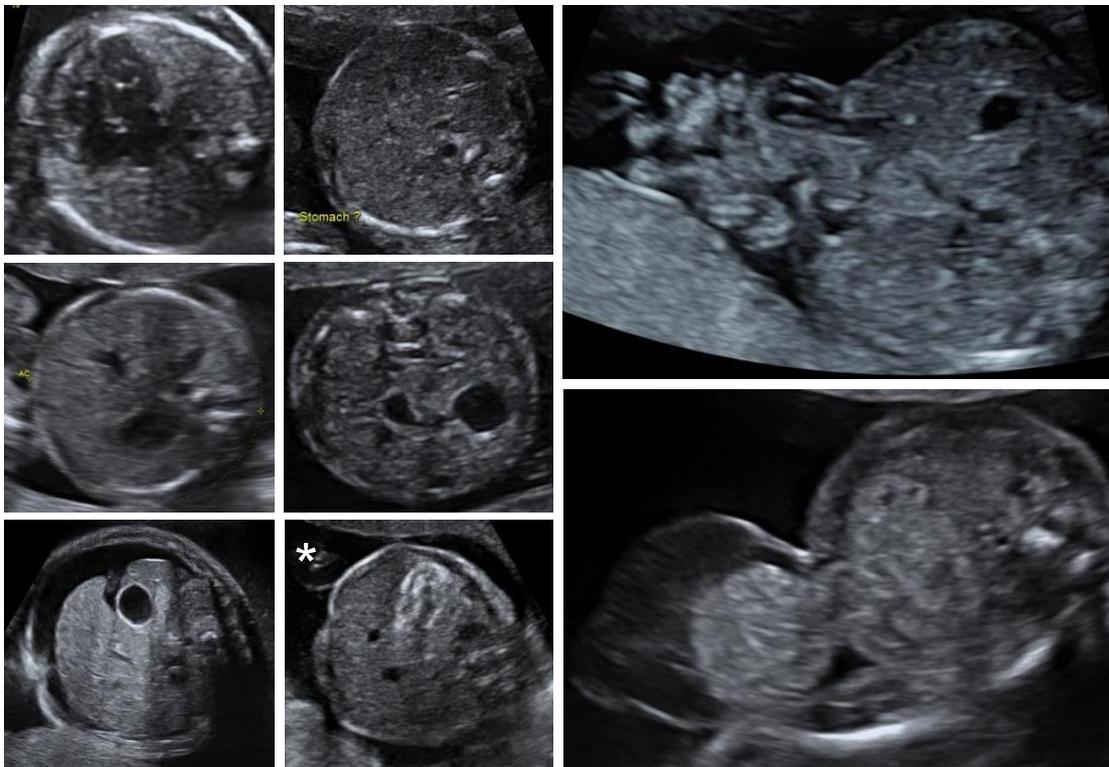


Confirm in 2 planes

# Transverse sweep - overview 2 abdomen

What you can exclude:

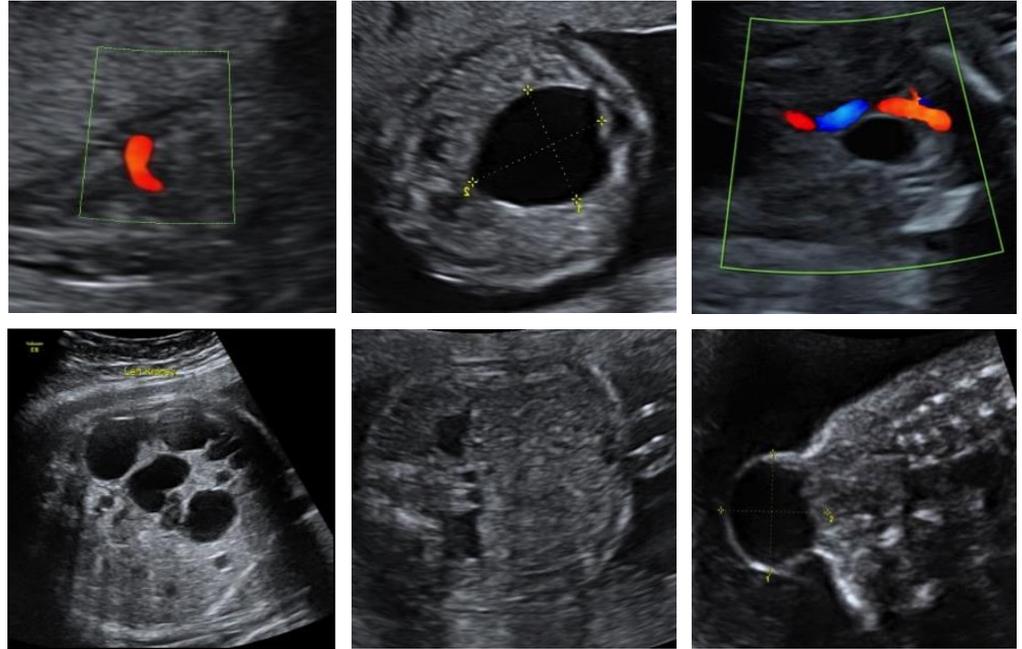
- Situs abnormalities
- Ascites
- Small/absent stomach
- Duodenal atresia
- Echogenic bowel\*
- Gastroschisis /  
omphalocele



# 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



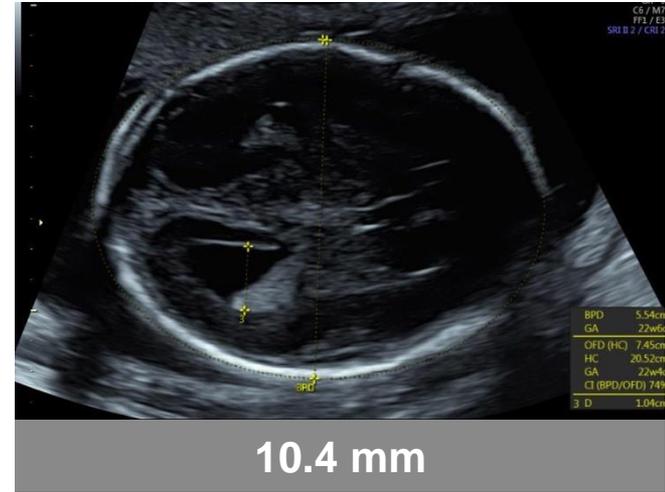
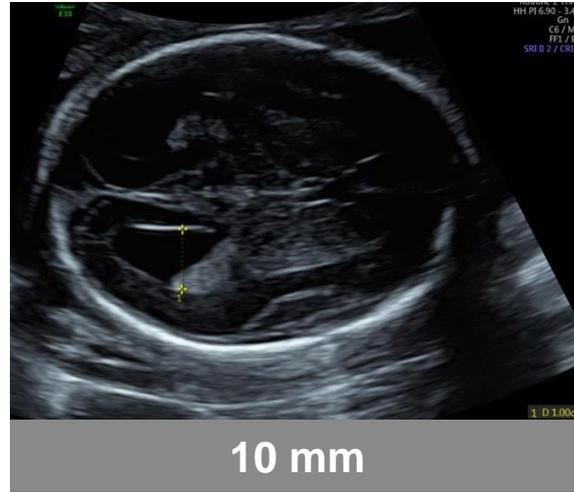
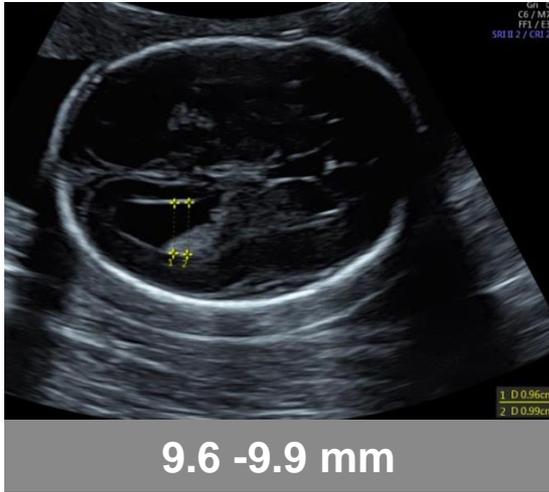
# Making a decision

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?



# Making a decision



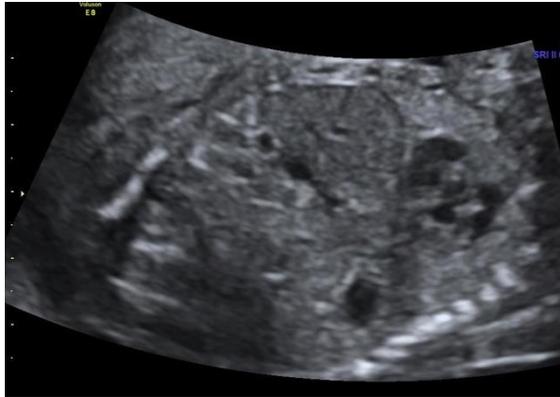
- Is the stomach absent?



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



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