

# AFI and BPP

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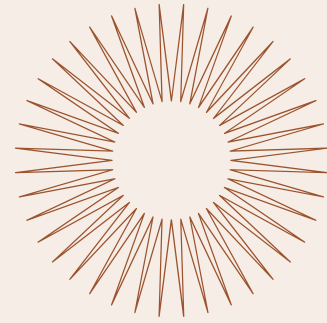
Dept retreat  
May 16, 2024

Please complete the pre-survey  
if you haven't done so yet.

<https://forms.gle/2JNCd9cVjXWHXCW98>

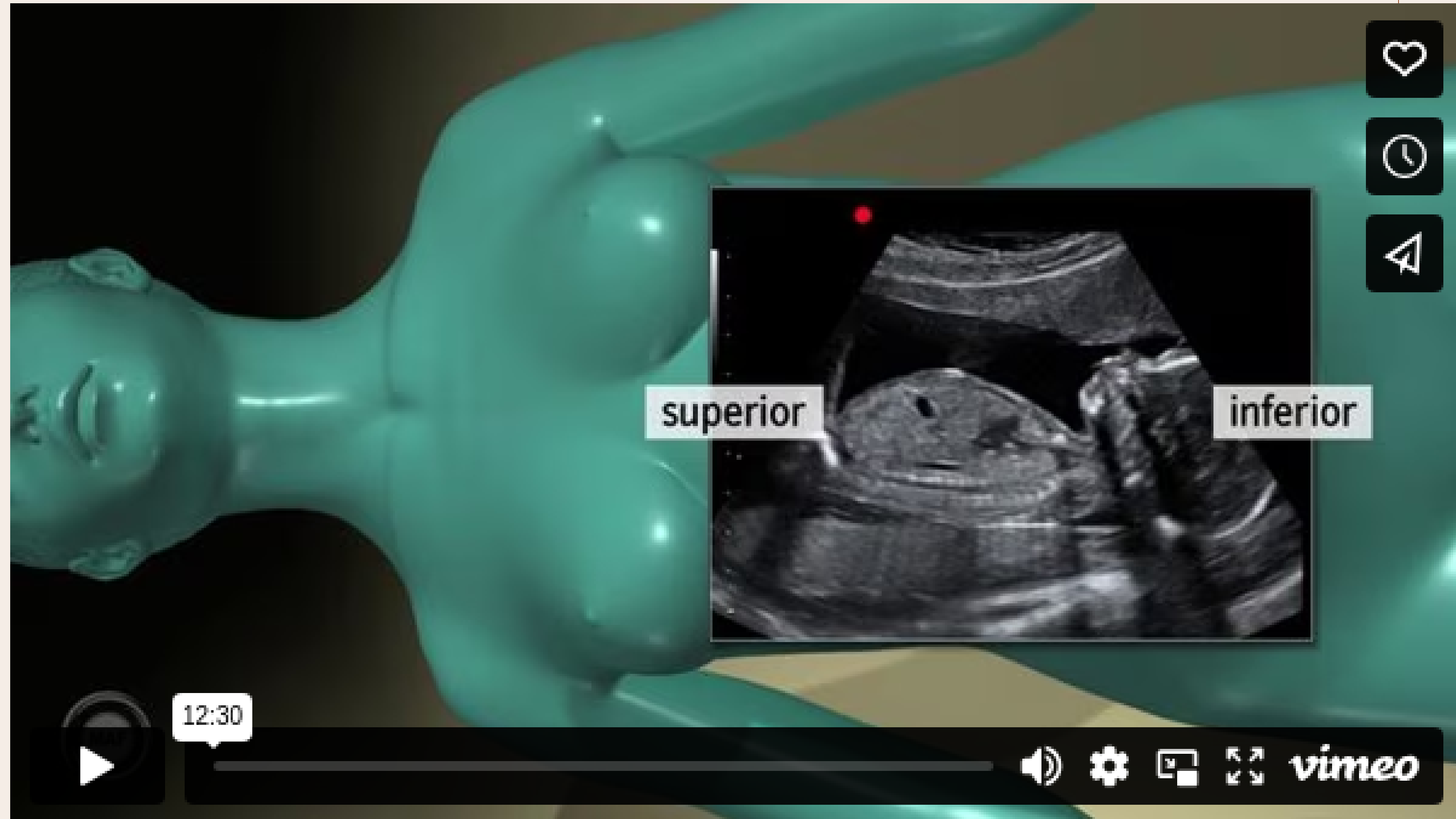


# What we will do



1. ID fetal presentation including presenting part and fetal head orientation
2. ID placental location (i.e. posterior, anterior, fundal)
3. Demonstrate proper measurement of amniotic fluid index
4. Perform a biophysical profile on a pregnant patient
5. Initiate the process of becoming credentialed in performing AFI and BPP (we will start this for you)

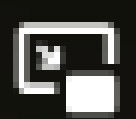
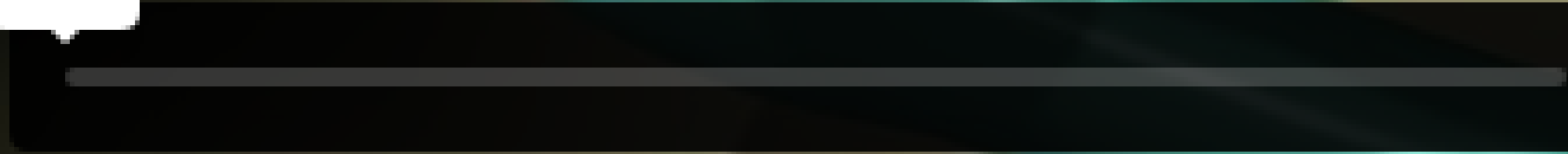




superior

inferior

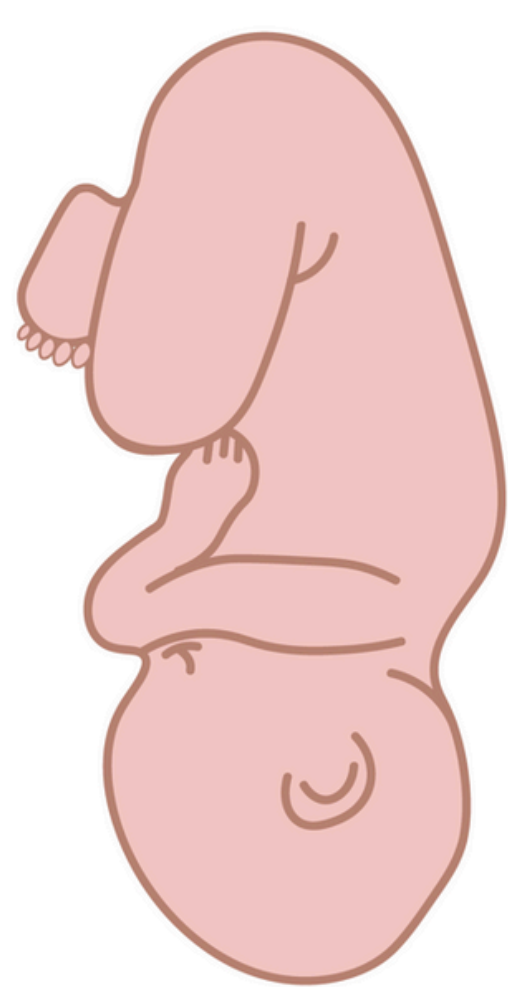
12:30



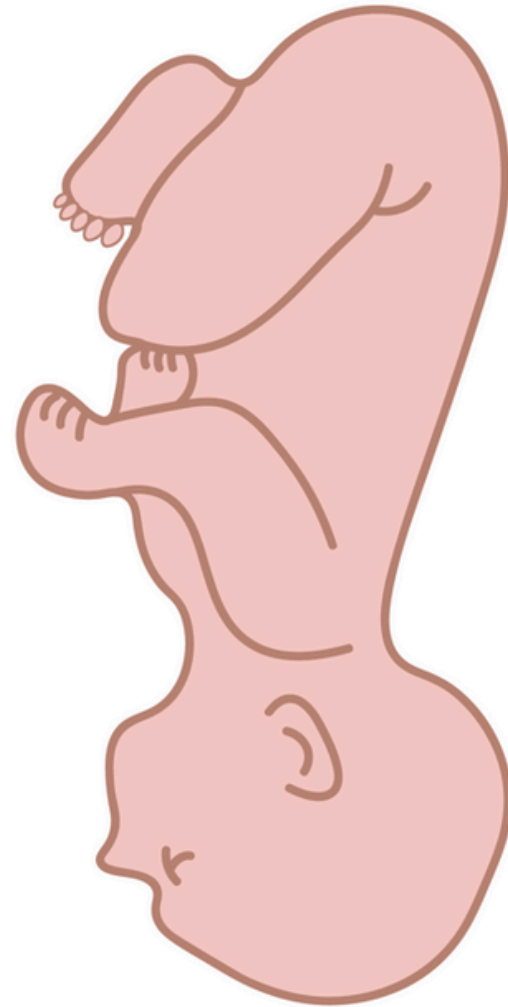
vimeo

# What is the presenting part?

leading part of the fetus or the anatomical structure closest to the maternal pelvic inlet



Vertex presentation



Brow presentation



Face presentation

## Variations of the breech presentation



Complete breech



Incomplete breech



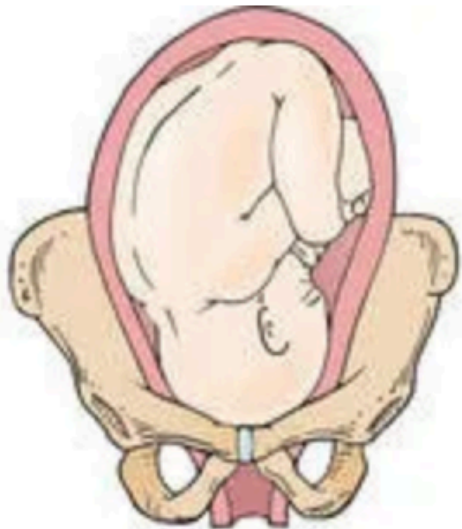
Frank breech

ADAM.

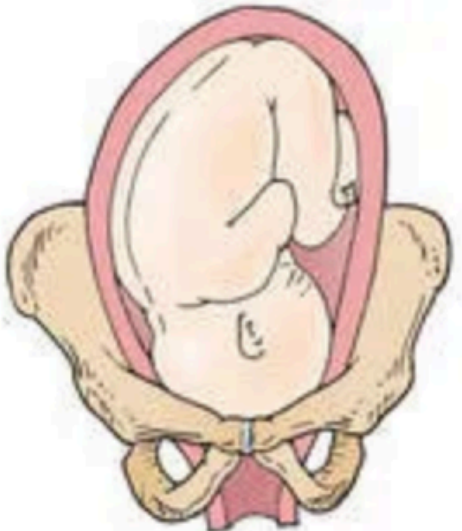
# What is the fetal head position?

Back of fetal head (occiput) relative to birthing person hip (right or left)

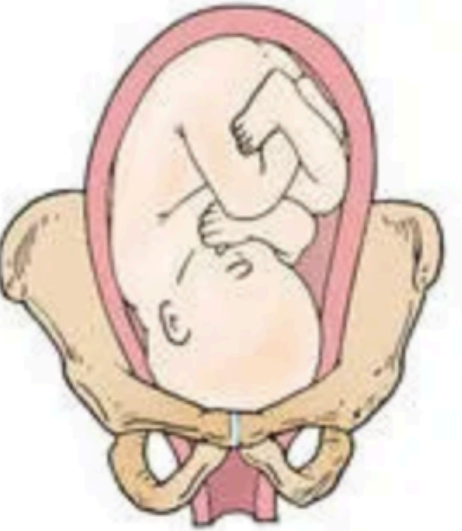
Occiput relative to birthing person spine (posterior = “spine to spine”)



Right occiput anterior (ROA)



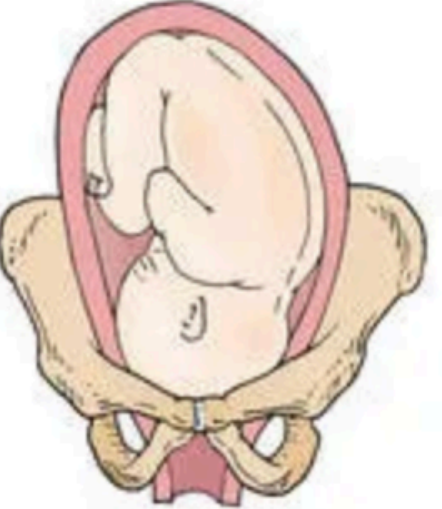
Right occiput transverse (ROT)



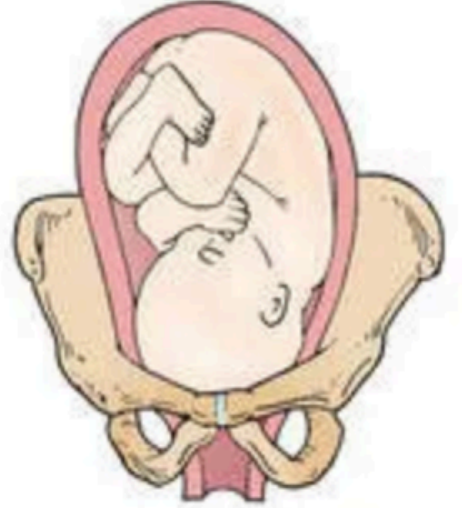
Right occiput posterior (ROP)



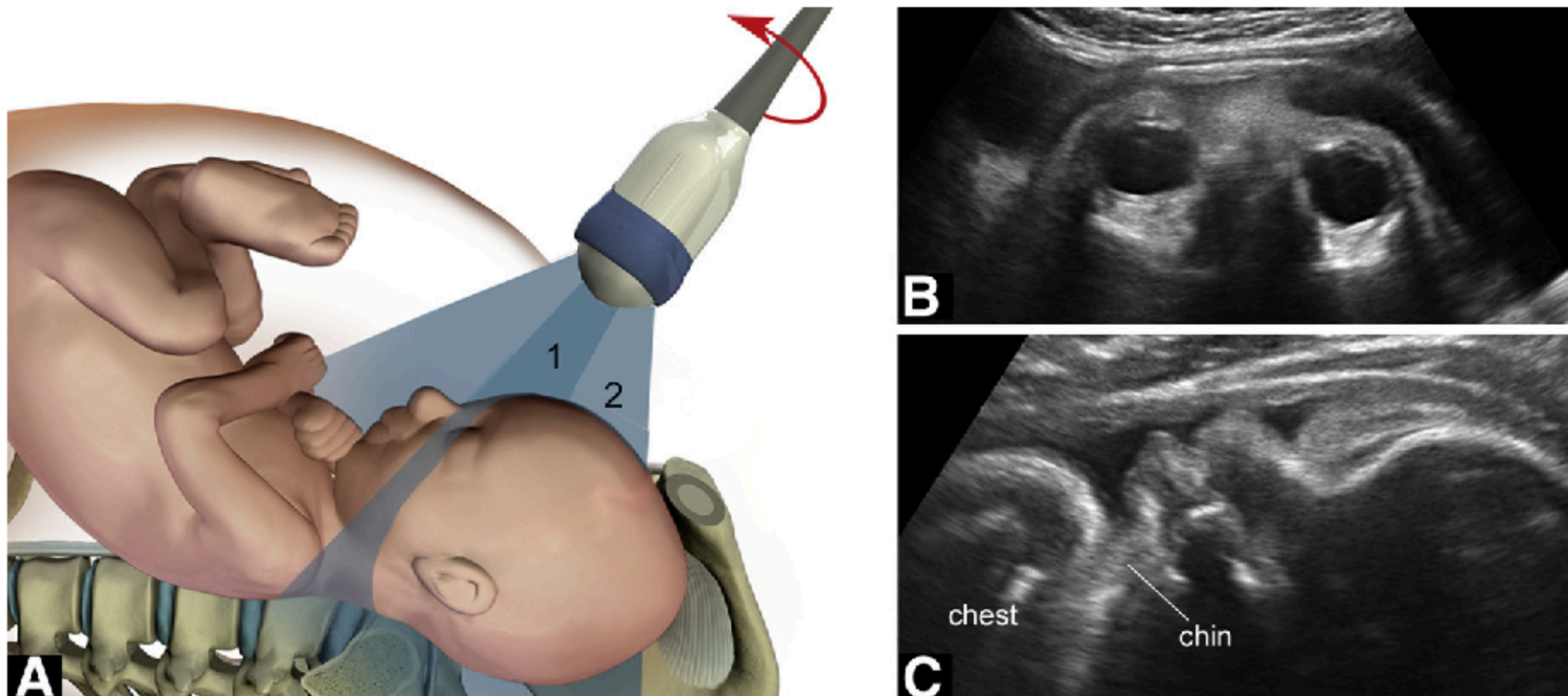
Left occiput anterior (LOA)



Left occiput transverse (LOT)



Left occiput posterior (LOP)



**A**, Schematic representation of ultrasound technique; transducer is initially positioned transversely in

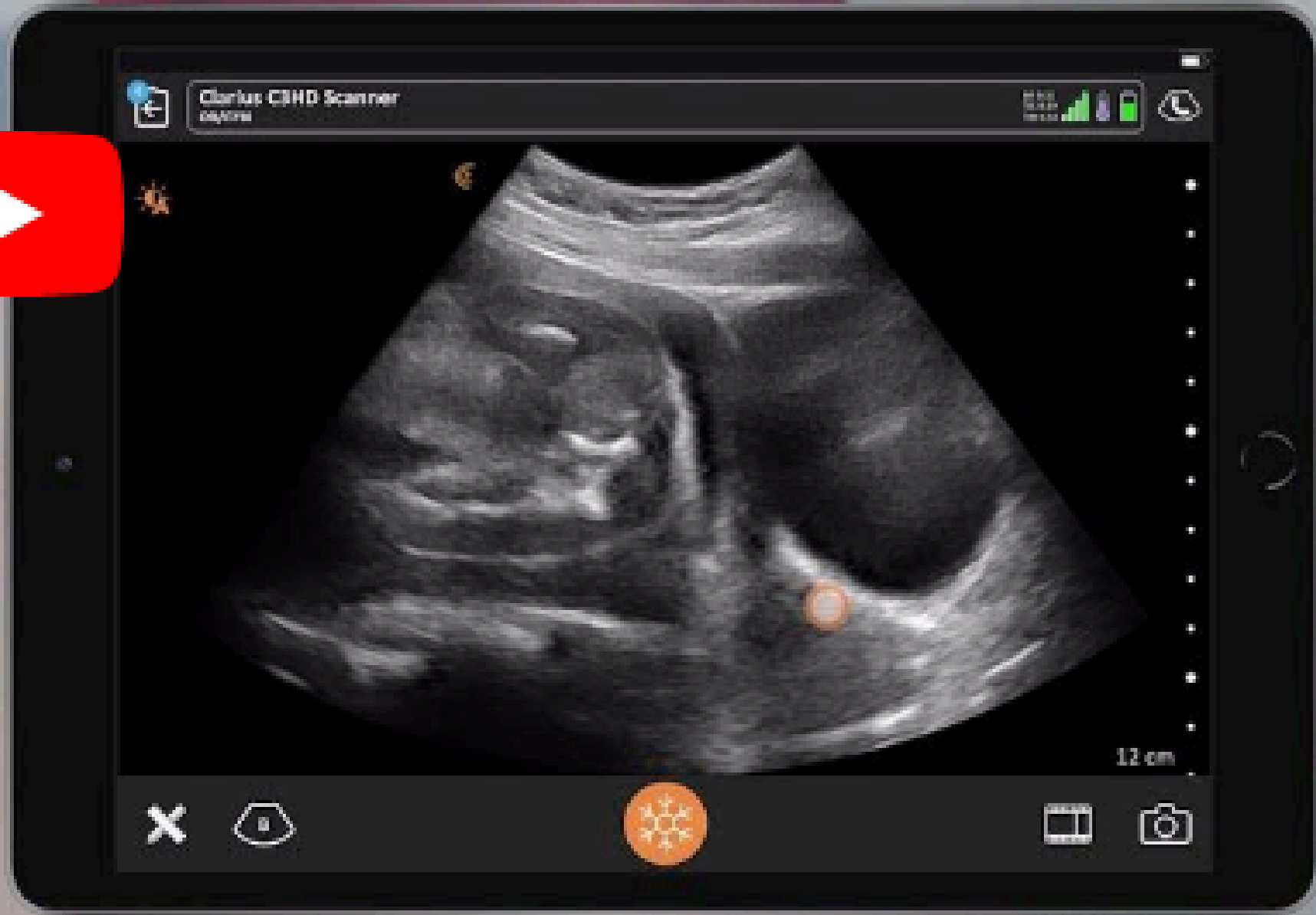
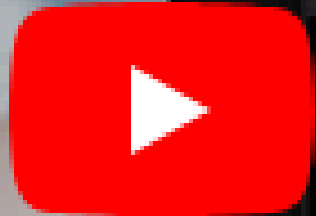
FIGURE 2 Sonography of vertex presentation with posterior occiput



# Position of the Fetus

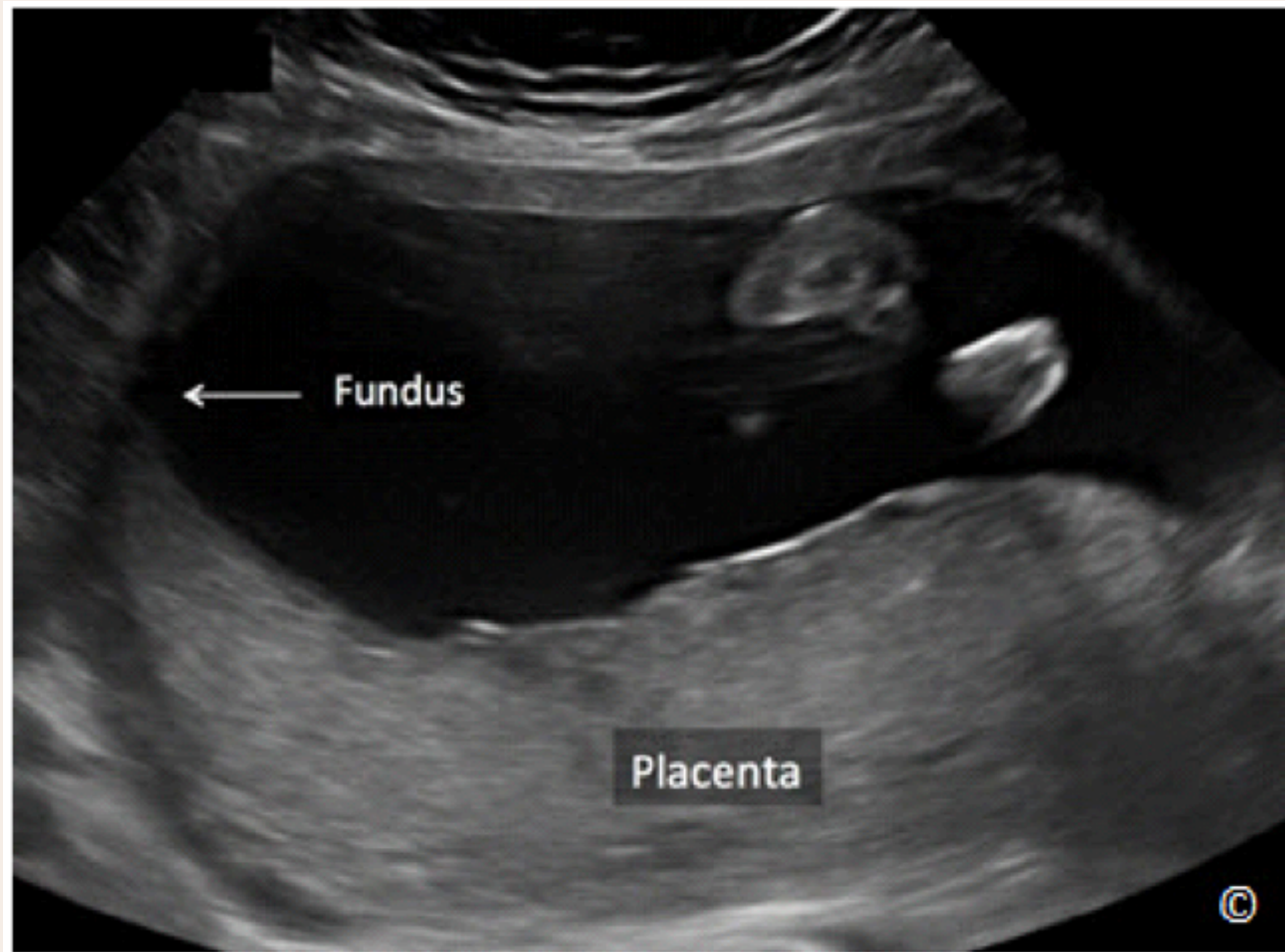


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# What is the placental location?



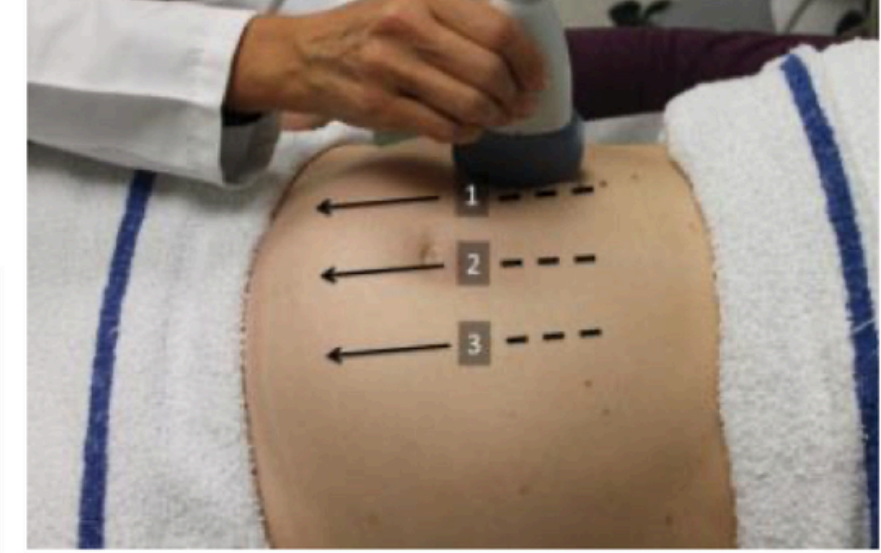
Posterior placenta



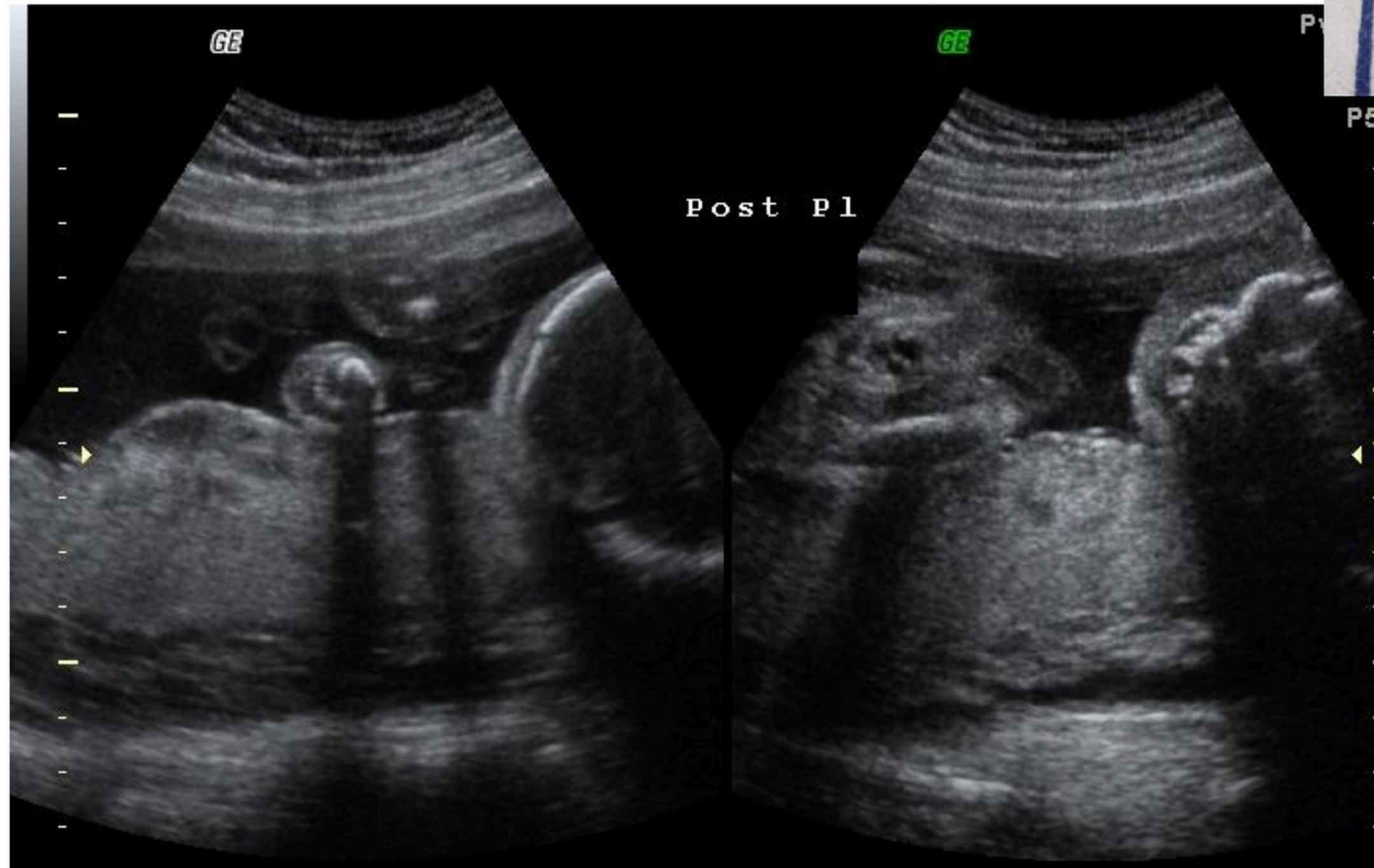
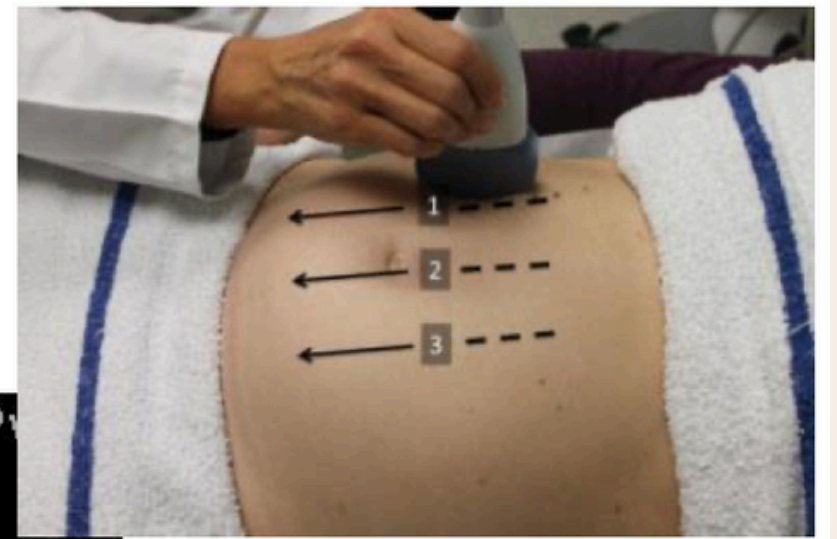
Anterior placenta



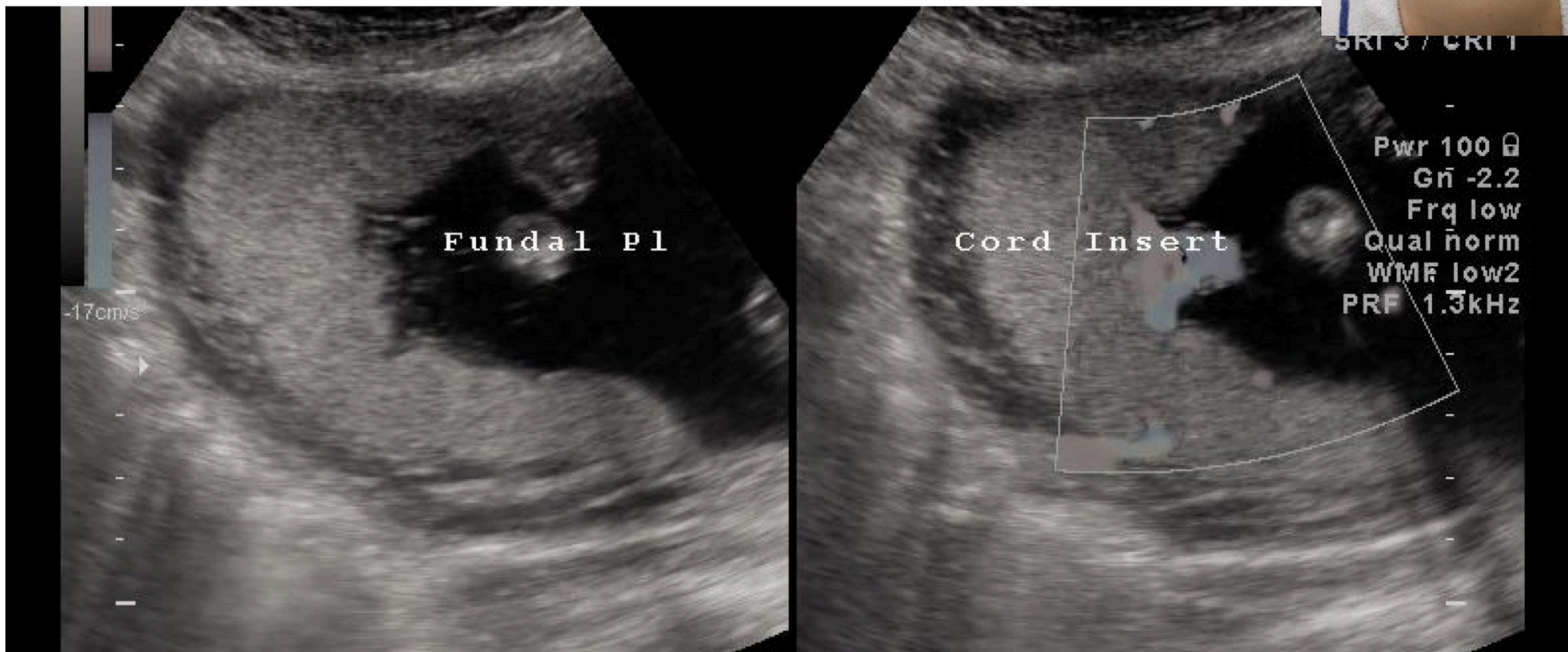
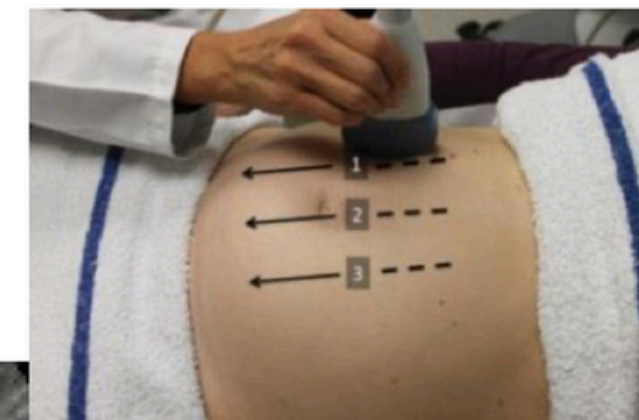
# Anterior placenta



# Posterior placenta



# Fundal placenta






# Third Trimester: Locate Fetus and Placenta

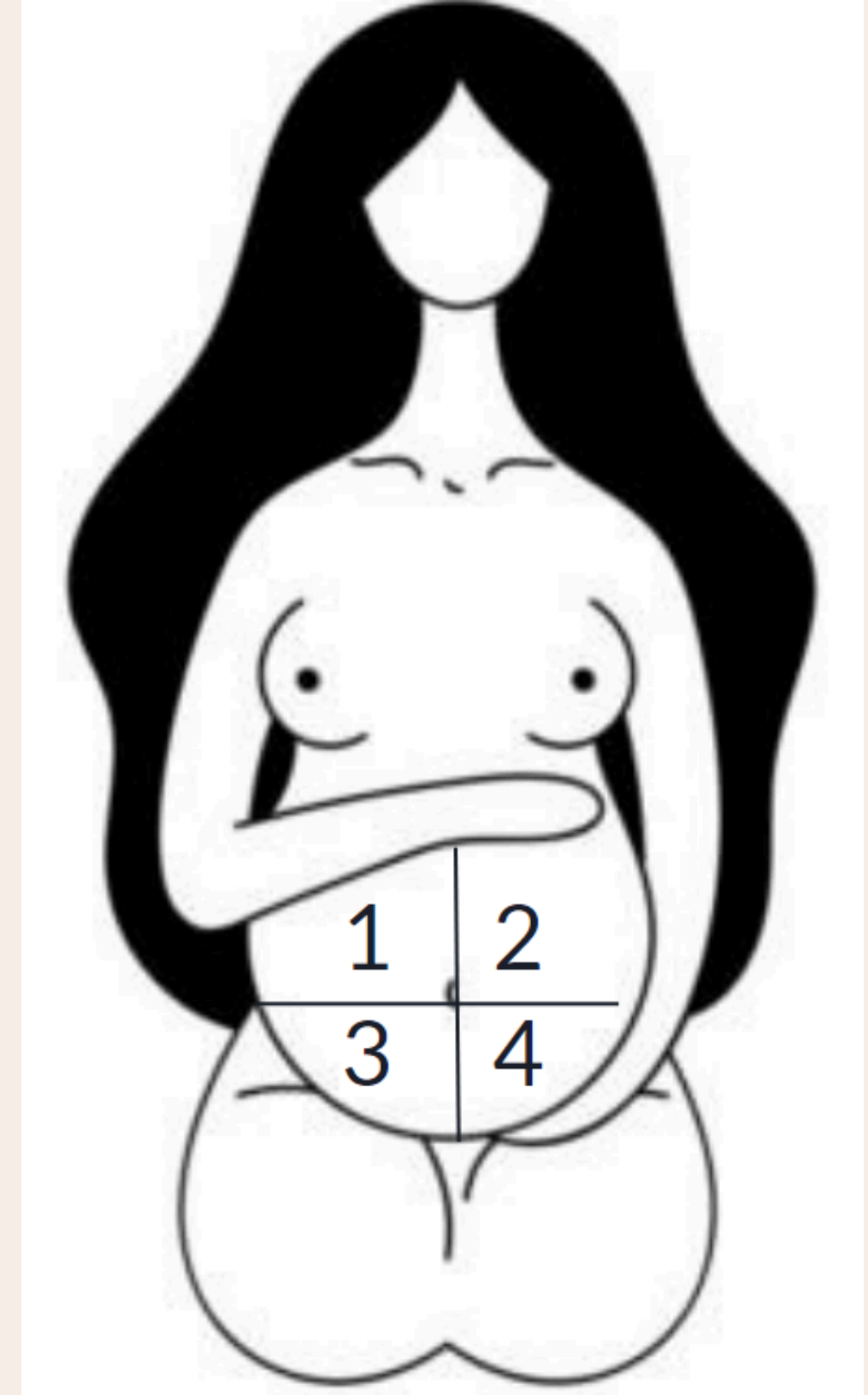
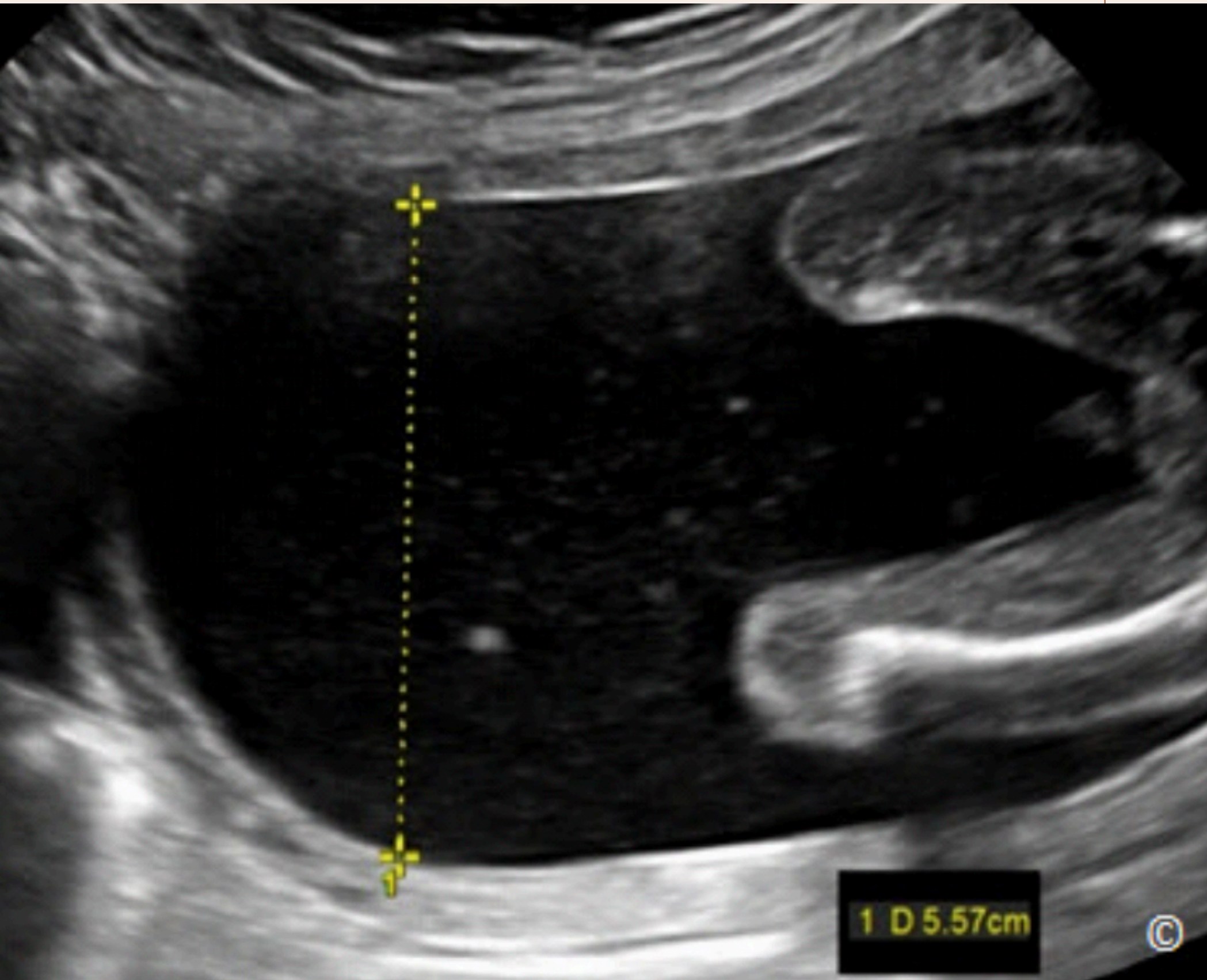


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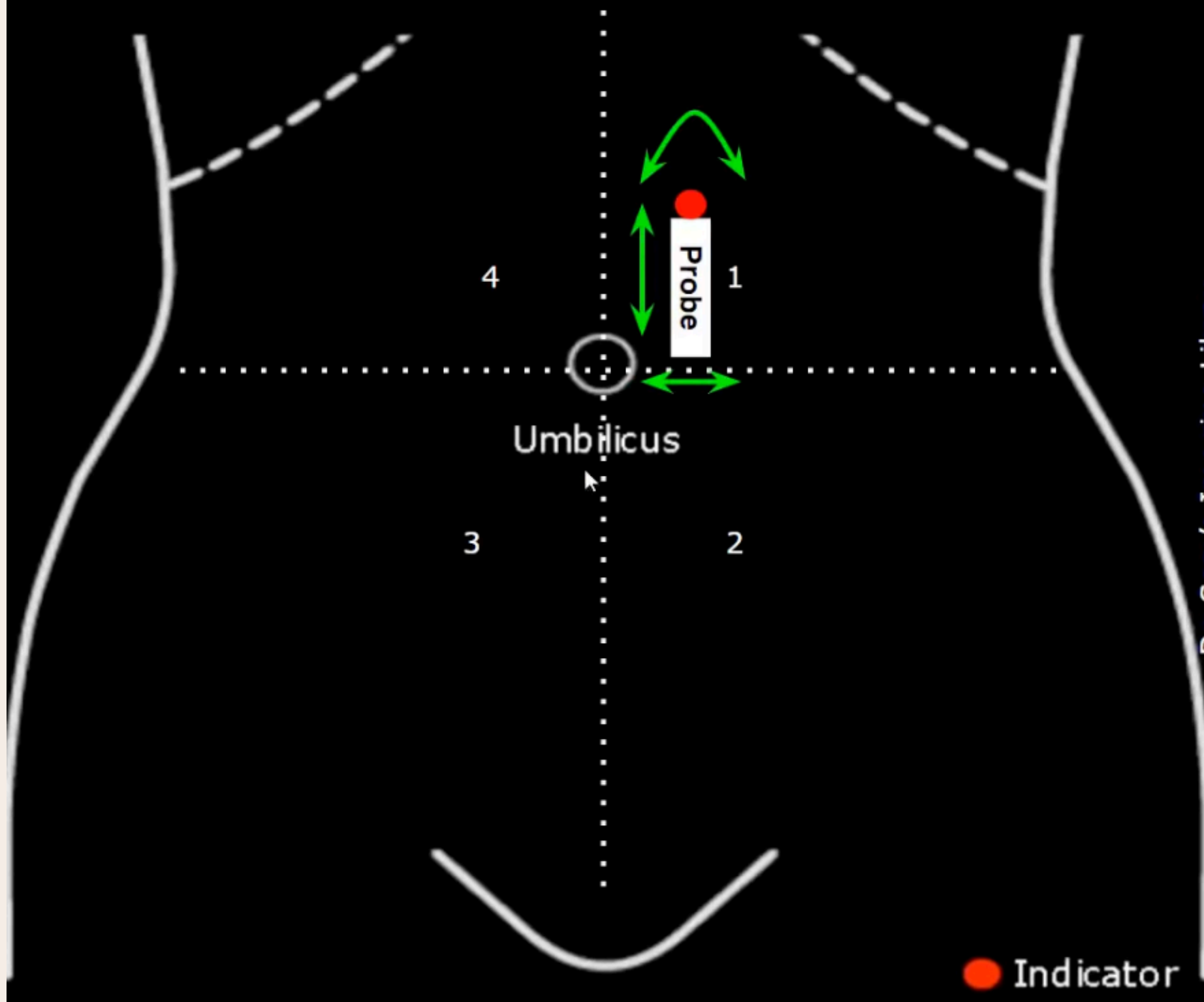
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# AFI

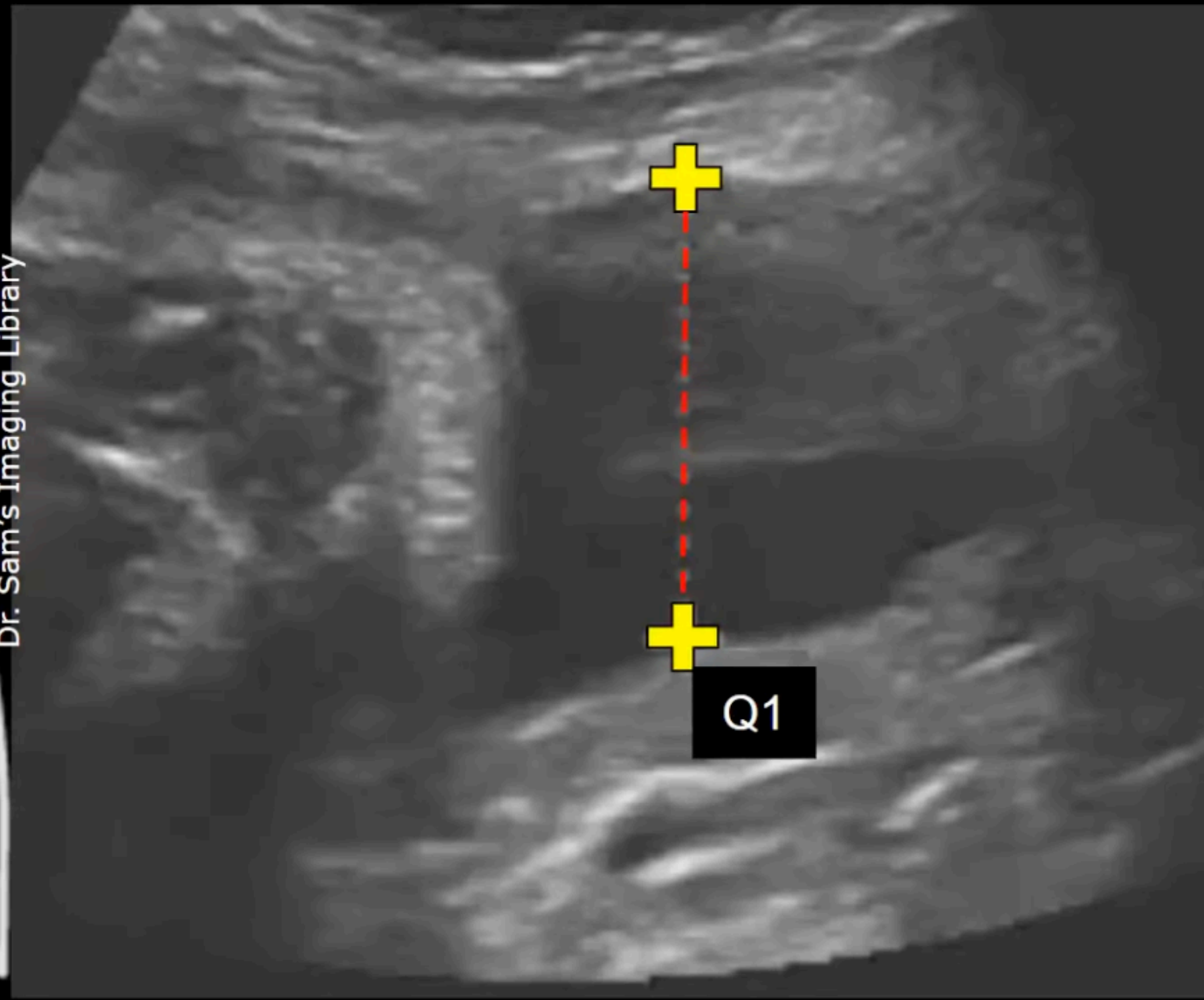


Deepest pocket in each quadrant  
Add together all four quadrants  
Normal is 5-25cm  
>25 = polyhydramnios  
<5 = oligohydramnios

## Probe Position



## Image Formed



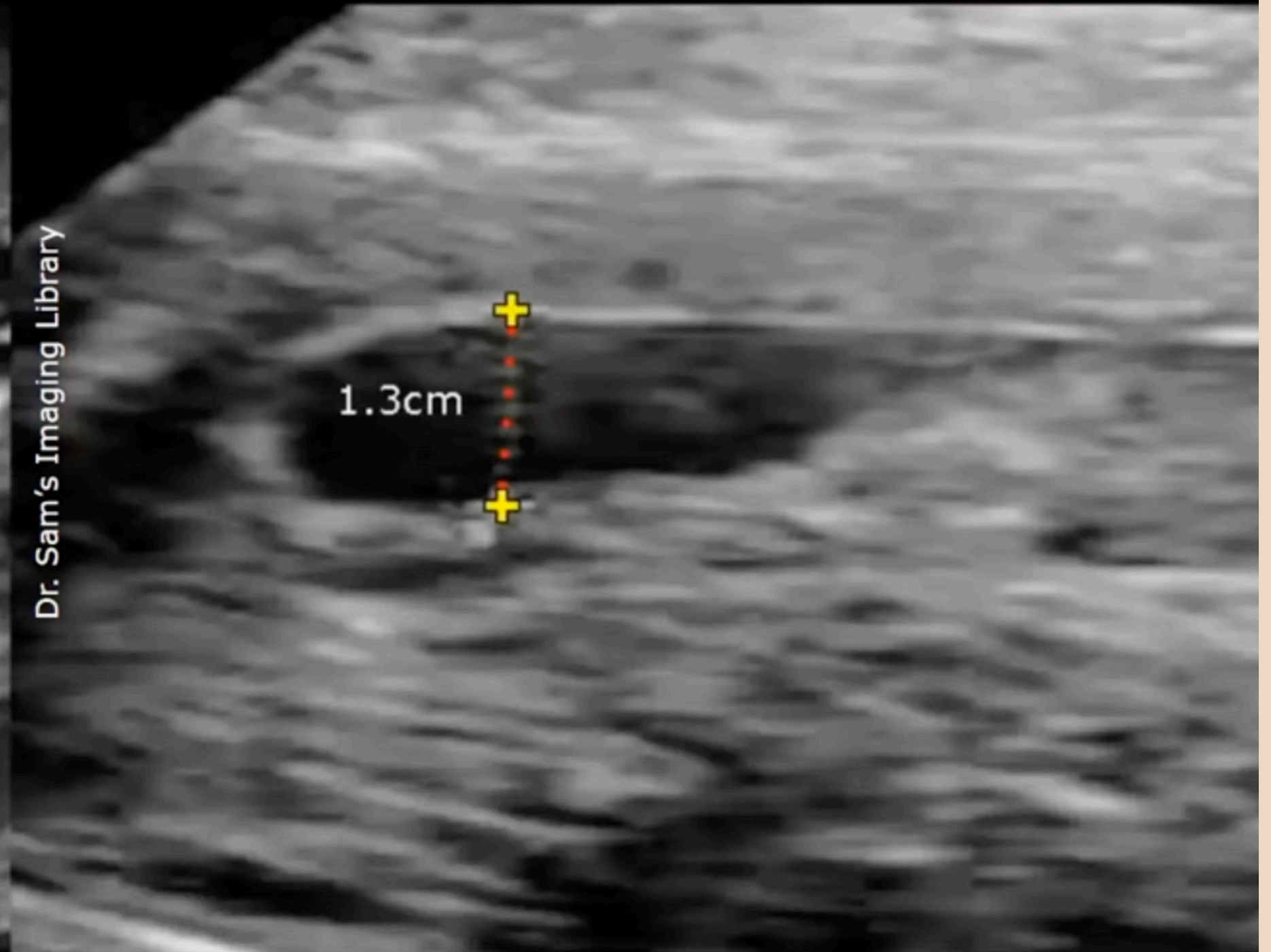
Always hold transducer perpendicular to the patient's spine and the exam table

<https://youtu.be/rG19i-ZSdzA?si=aNDd04qcDuM3m-m4>

## Maximum Vertical Pocket (MVP)



## Maximum Vertical Pocket (MVP)



### Normal Amniotic Fluid Volume

- AFI: 5-25 cm
- MVP: 2-8 cm
- Score 2

### Abnormal Amniotic Fluid Volume

- Single deepest pocket measuring <2 cm in depth
- Oligohydramnios
- Score 0

<https://youtu.be/95hfv5CDagk?si=oNLH1mcIITPPTcdp>

# Modified BPP

1. **Non-stress test - reactive**
2. **Amniotic fluid index (AFI) - normal**

Incidence of stillbirth within one week of a normal modified BPP is 0.8/1000

*Modified BPP compares favorably with BPP as a predictor of fetal wellbeing*



# Biophysical profile

Non-stress test  
Amniotic fluid index (AFI)

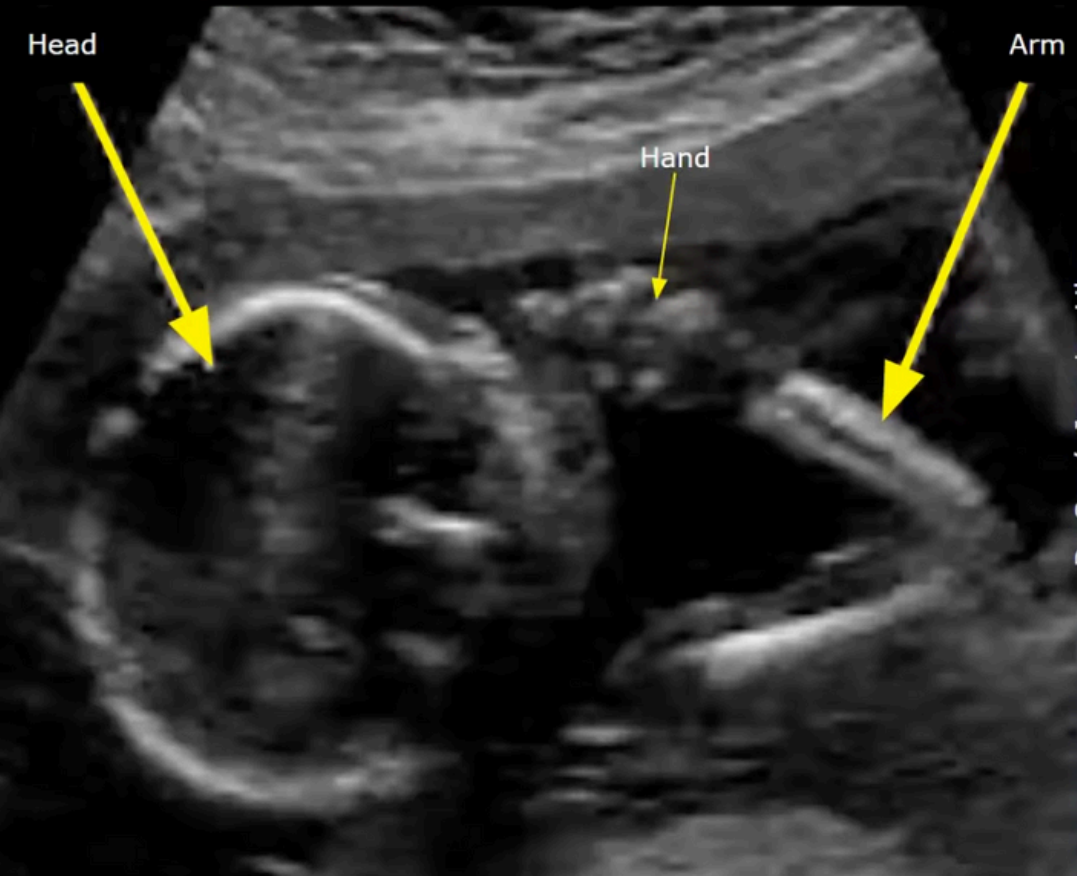
Scoring: 2 points for each element  
Total possible: 10 points

Fetal tone  
Fetal movement  
Fetal breathing

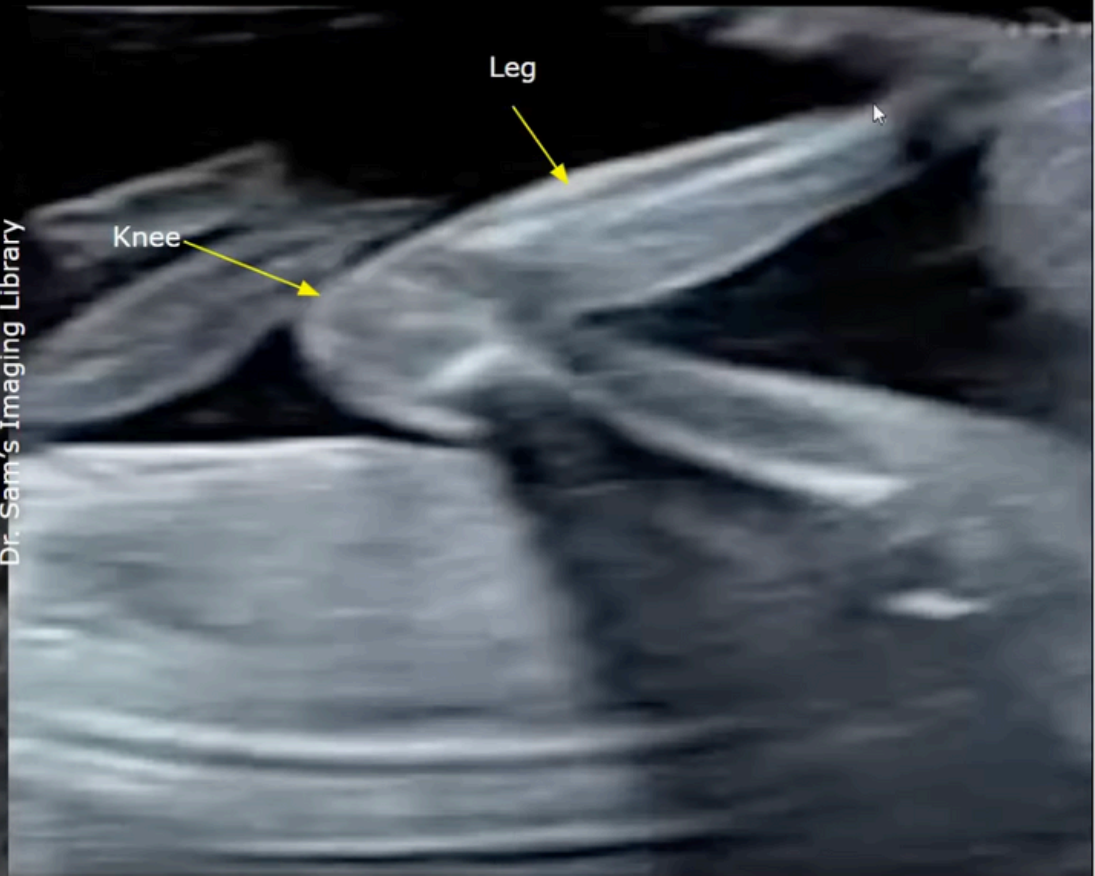
Complete within 30 minutes



## Longitudinal View



## Longitudinal View



### Normal Fetal Tone

- Flexion and extension of an arm or leg
- Opening/closing of a hand
- Score 2

Fetal tone

One or more episodes of extension of a fetal extremity or spine with return to flexion, or opening or closing of a hand

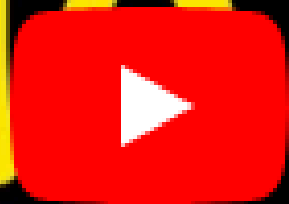


Fetal Biophysical Profile - Imaging Study Lecture



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# Biophysical Profile



Imaging  
Study



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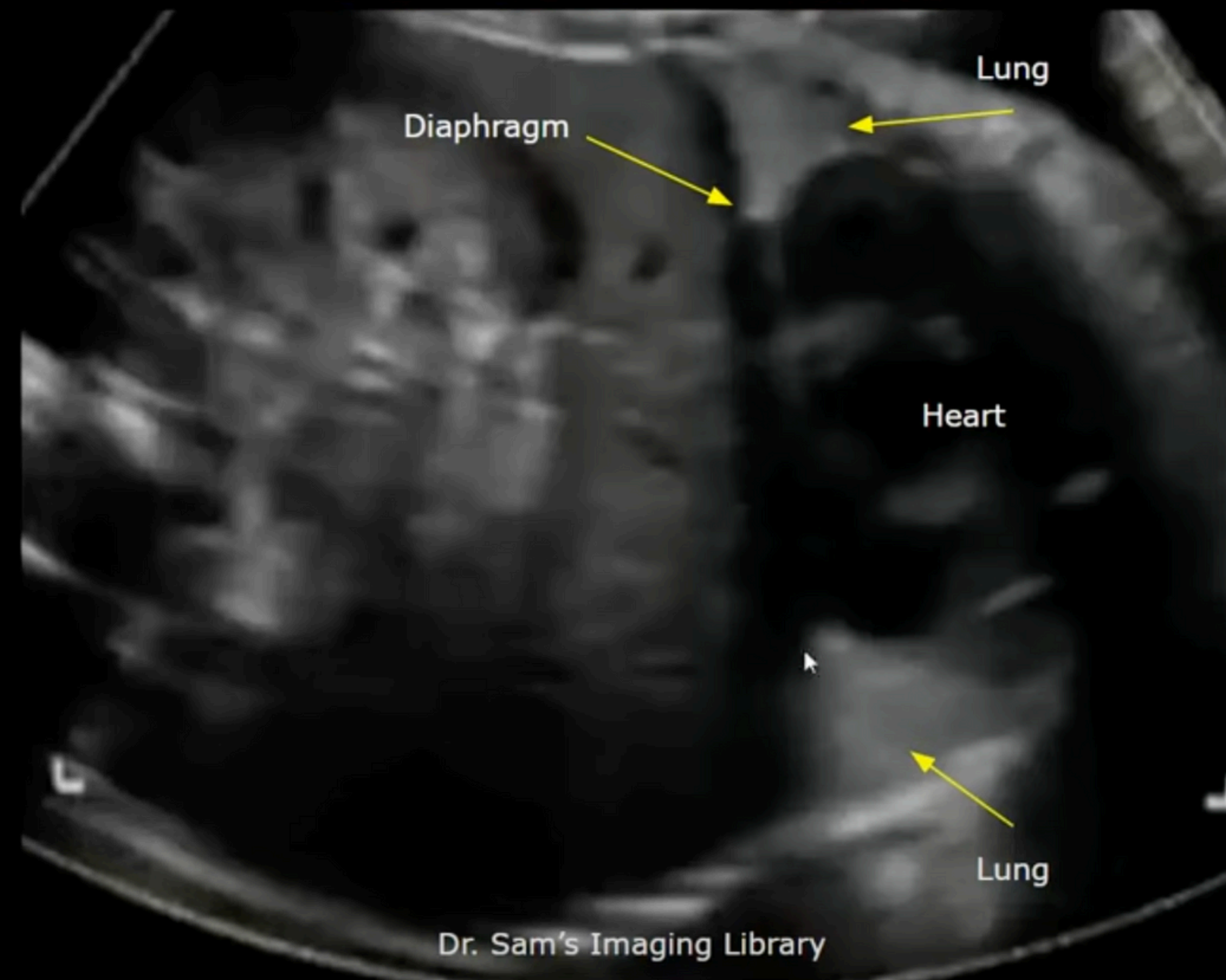
fetal tone

# Fetal movements

Three or more discrete body or limb movements within 30 minutes

Can't double count tone as movement; movement must be distinct from what you counted for tone.

## Coronal View



### Normal Fetal Breathing

Continued rhythmic respiration patterns lasting a duration of 30 seconds or longer within the 30-minute observation time frame.

Score 2

### Abnormal Fetal Breathing

- No breathing
- Absence of any breathing episode lasting 30 seconds or more during a 30-minute observation period.
- Score 0

One or more episodes of rhythmic fetal breathing movements of 30 seconds or more within 30 minutes



# fetal breathing ultrasound

FR 35Hz  
RS

2D  
45%  
C 58  
P Low  
HGen

BREATHING



Share

JPEG

12. \*\*\* bpm

Watch on YouTube

# Thank you for coming!



Please complete the post-survey after today.