

The Fetus As A Patient

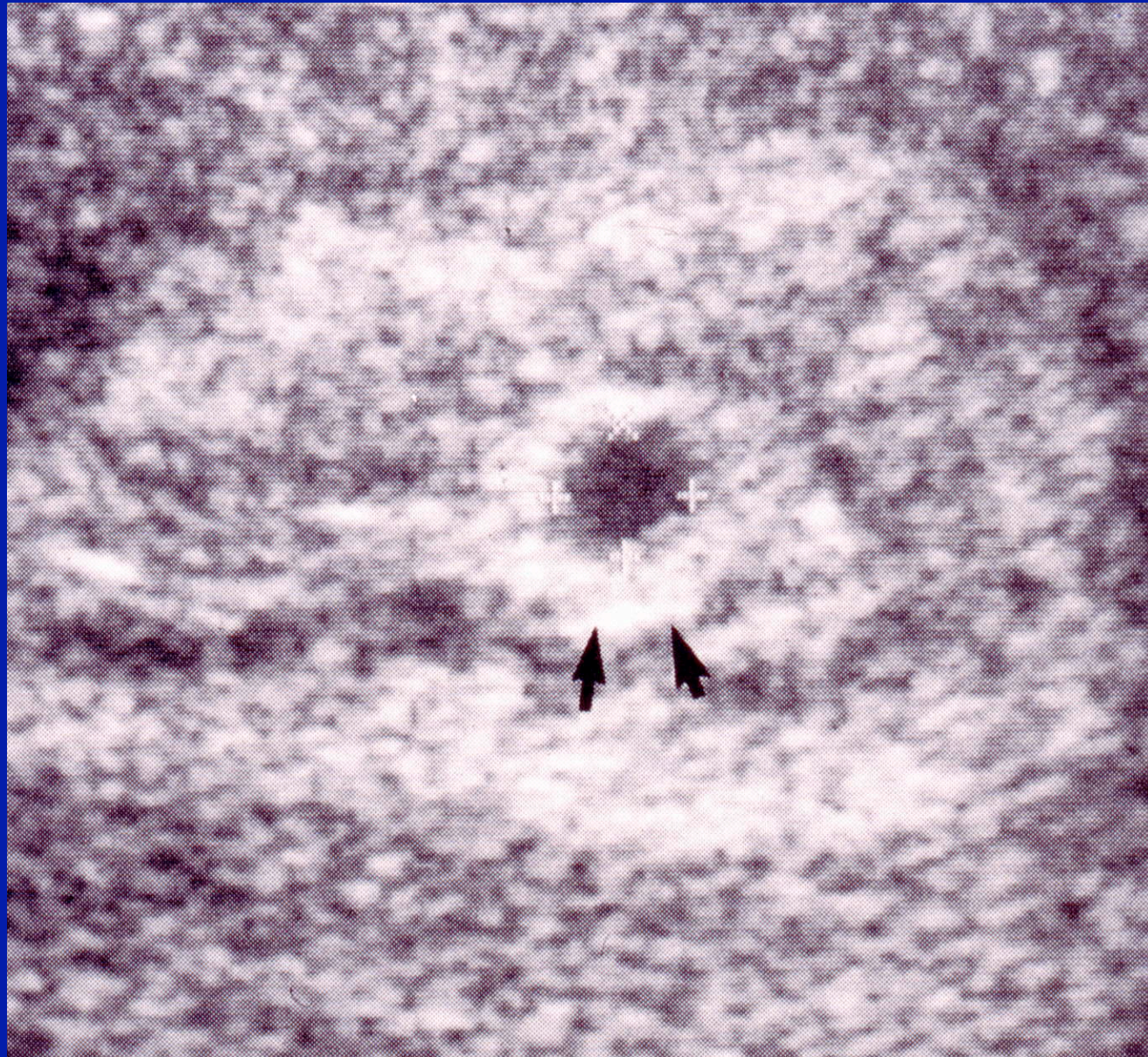


Richard L. Berkowitz, MD

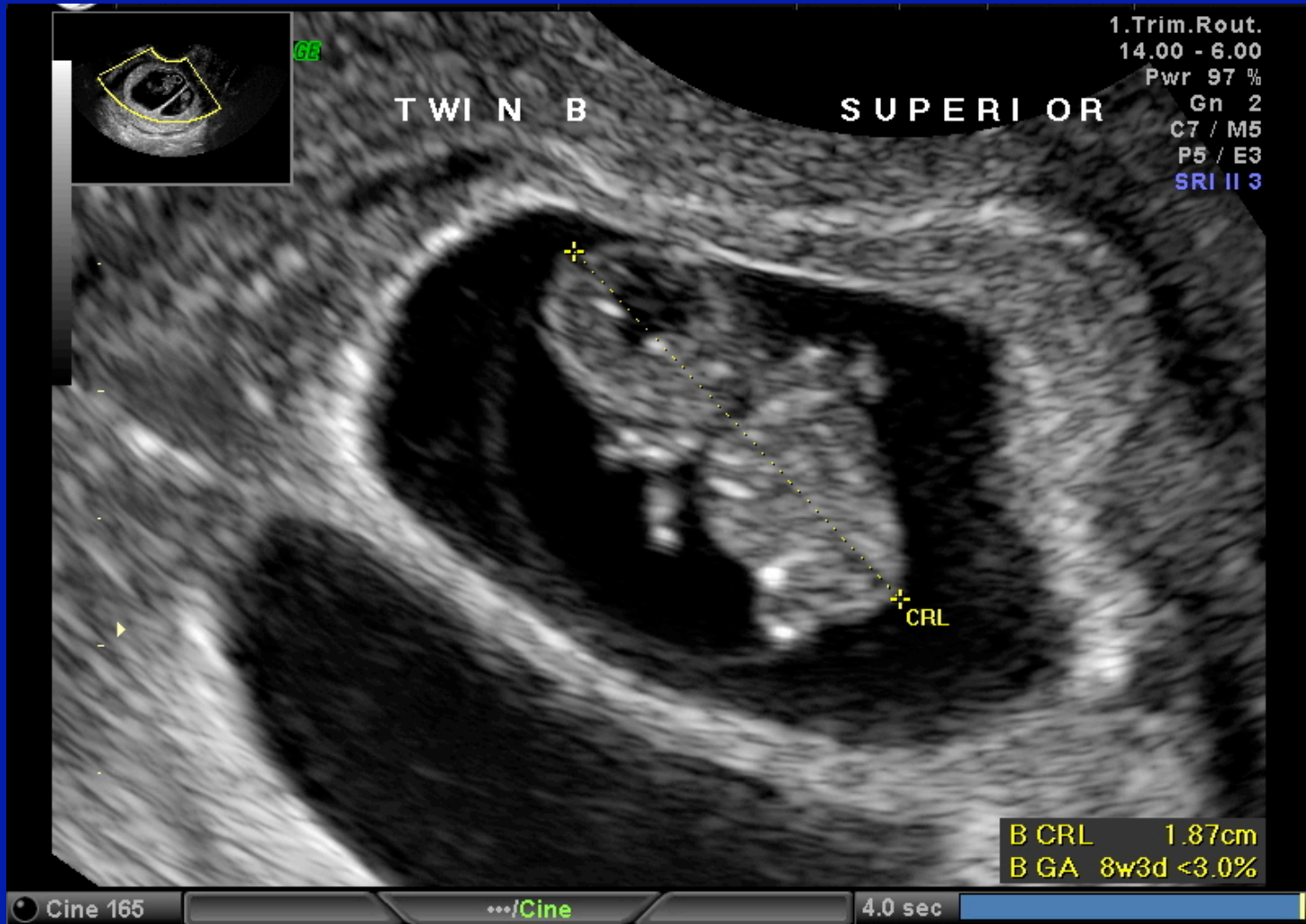
Professor of Obstetrics and Gynecology

**Columbia University College of Physicians &
Surgeons**

First Trimester

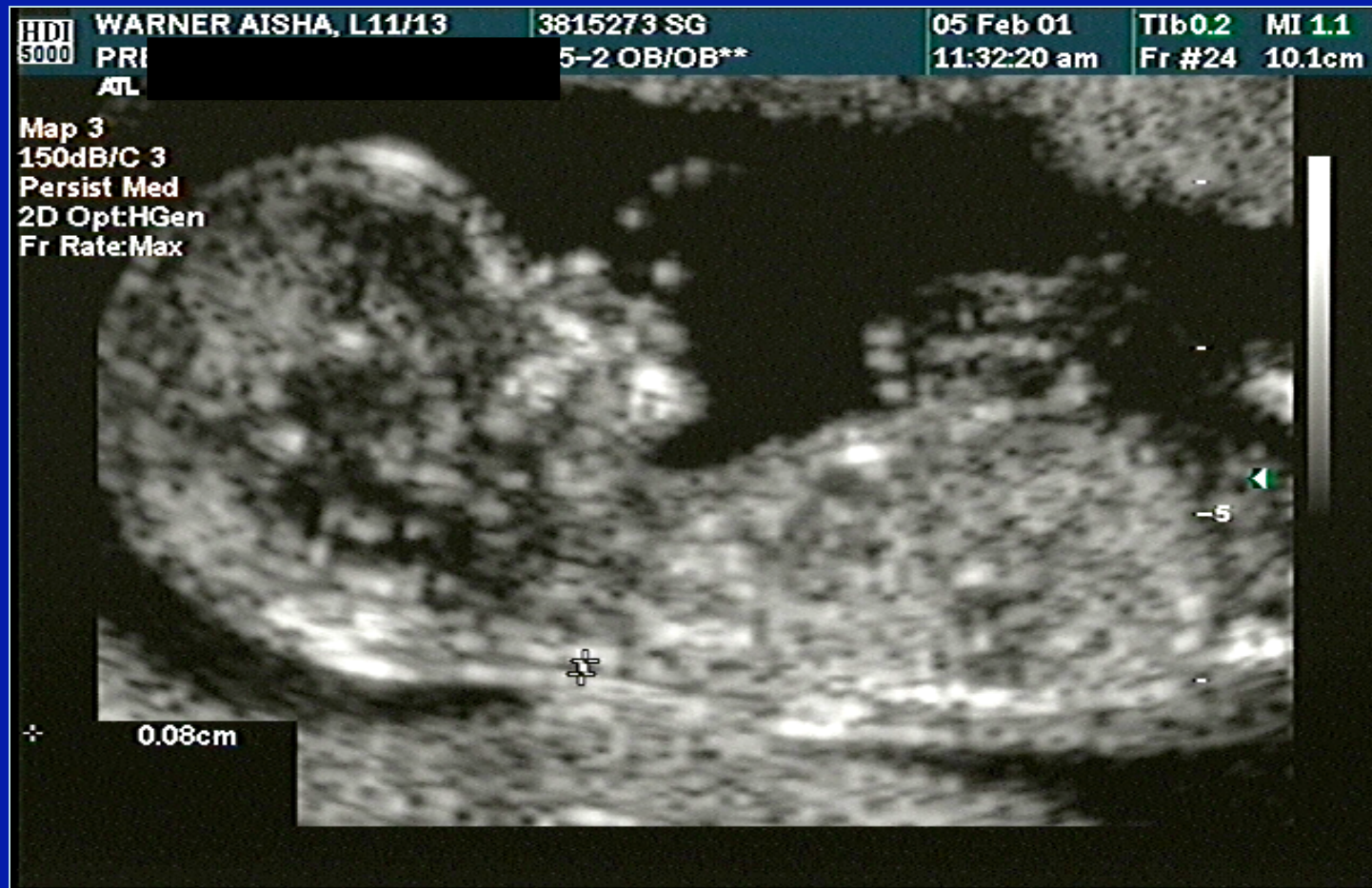




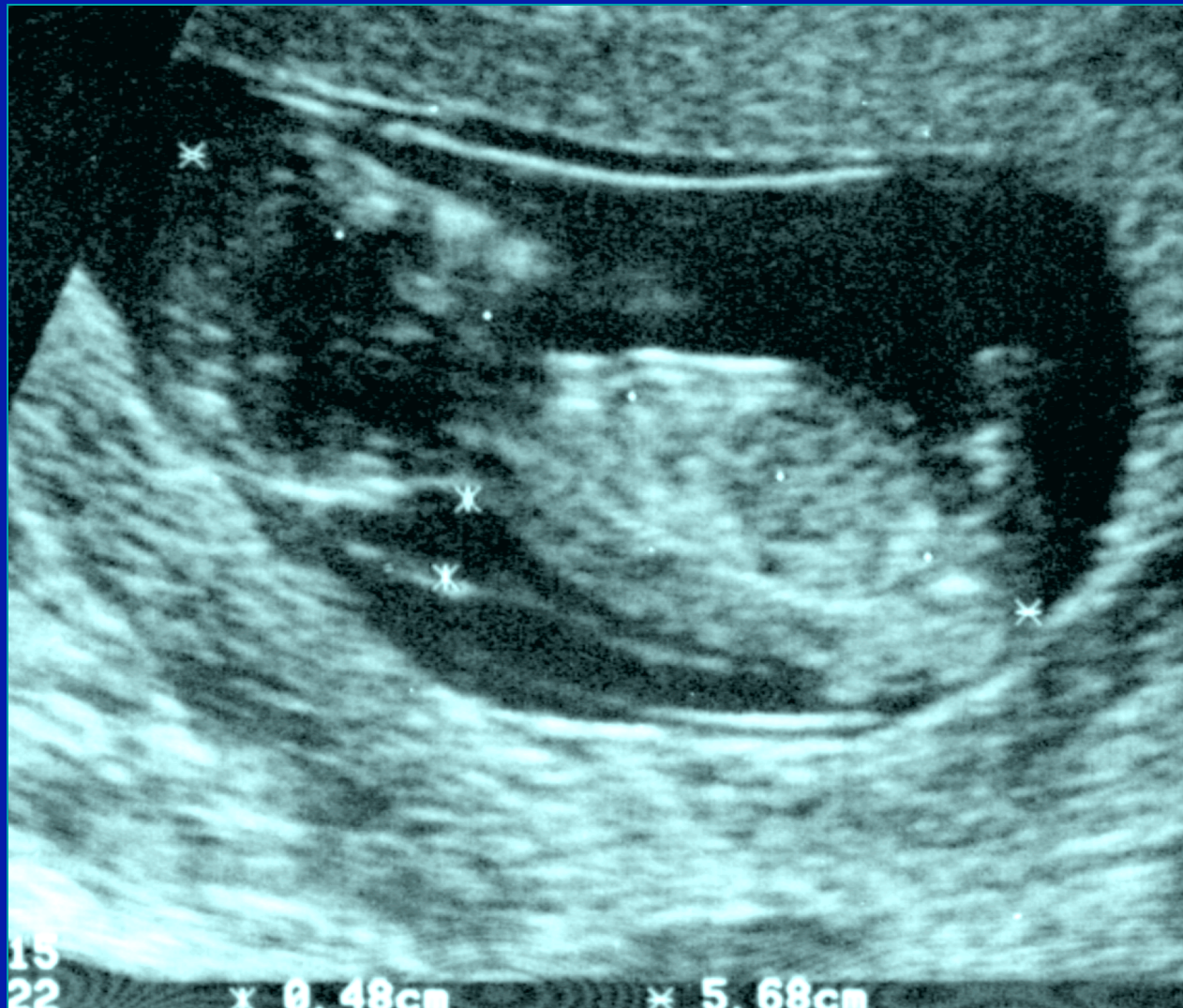




Normal Nuchal Translucency



Increased Nuchal Translucency



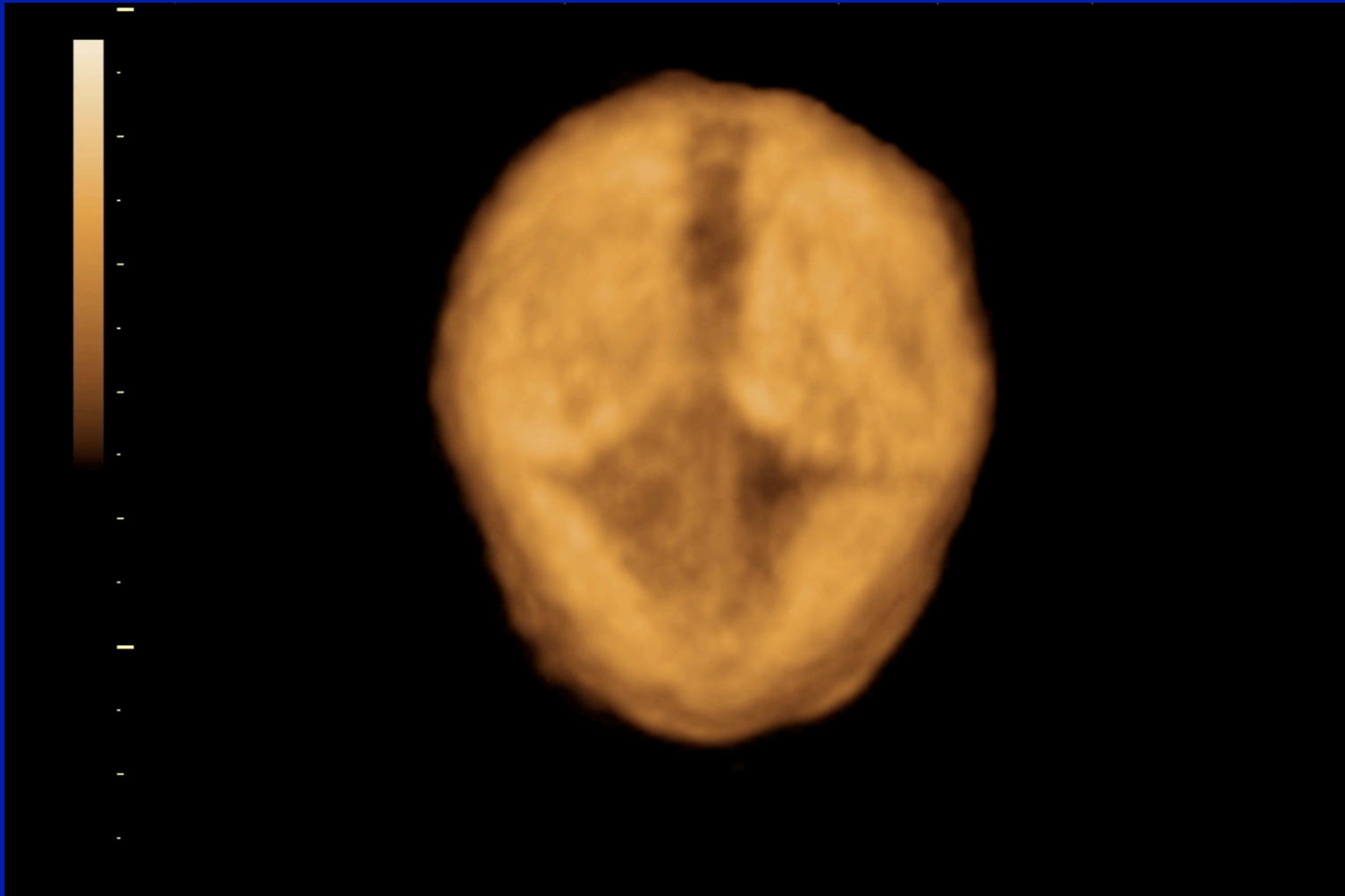
Cystic Hygroma - Sagittal



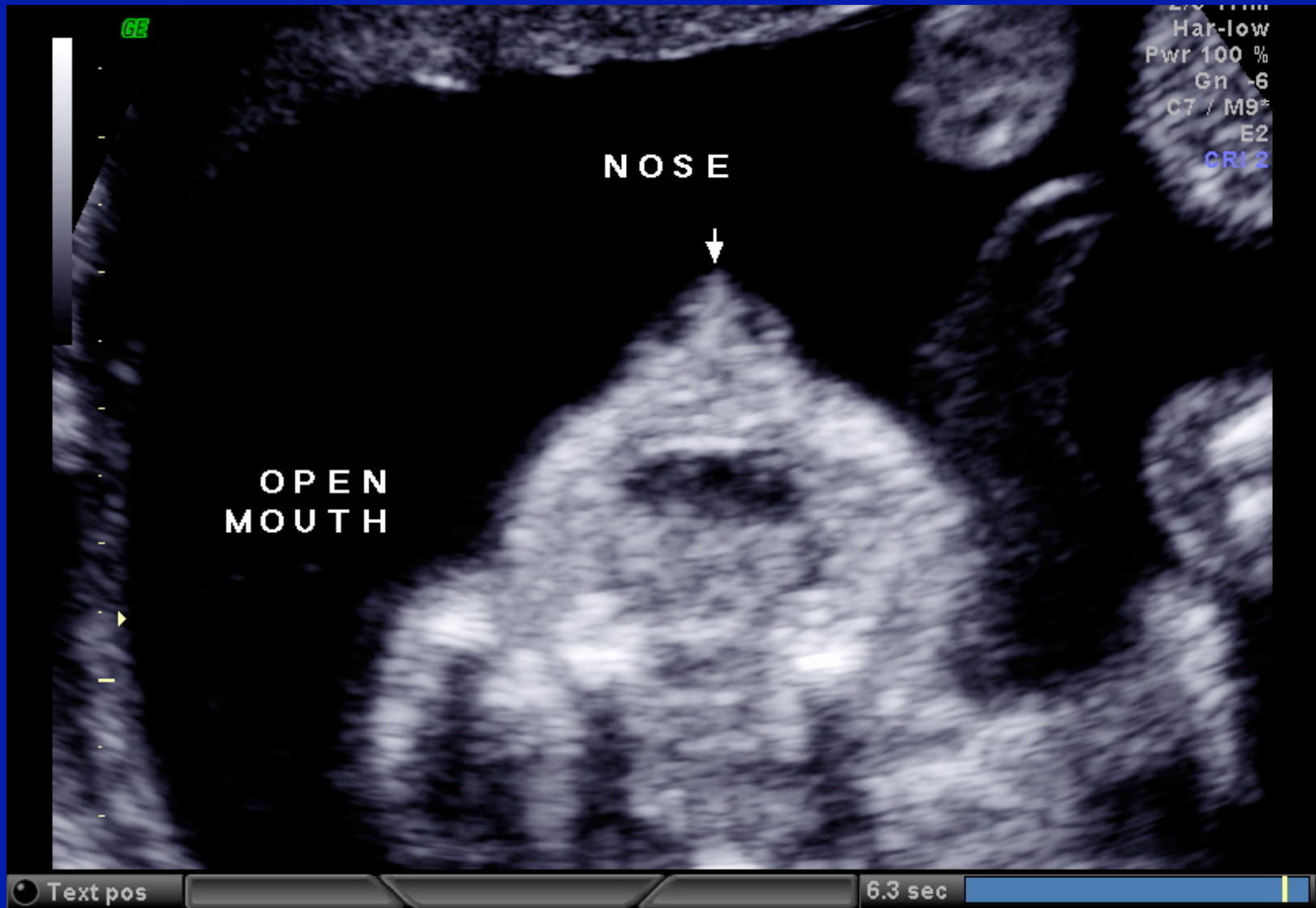


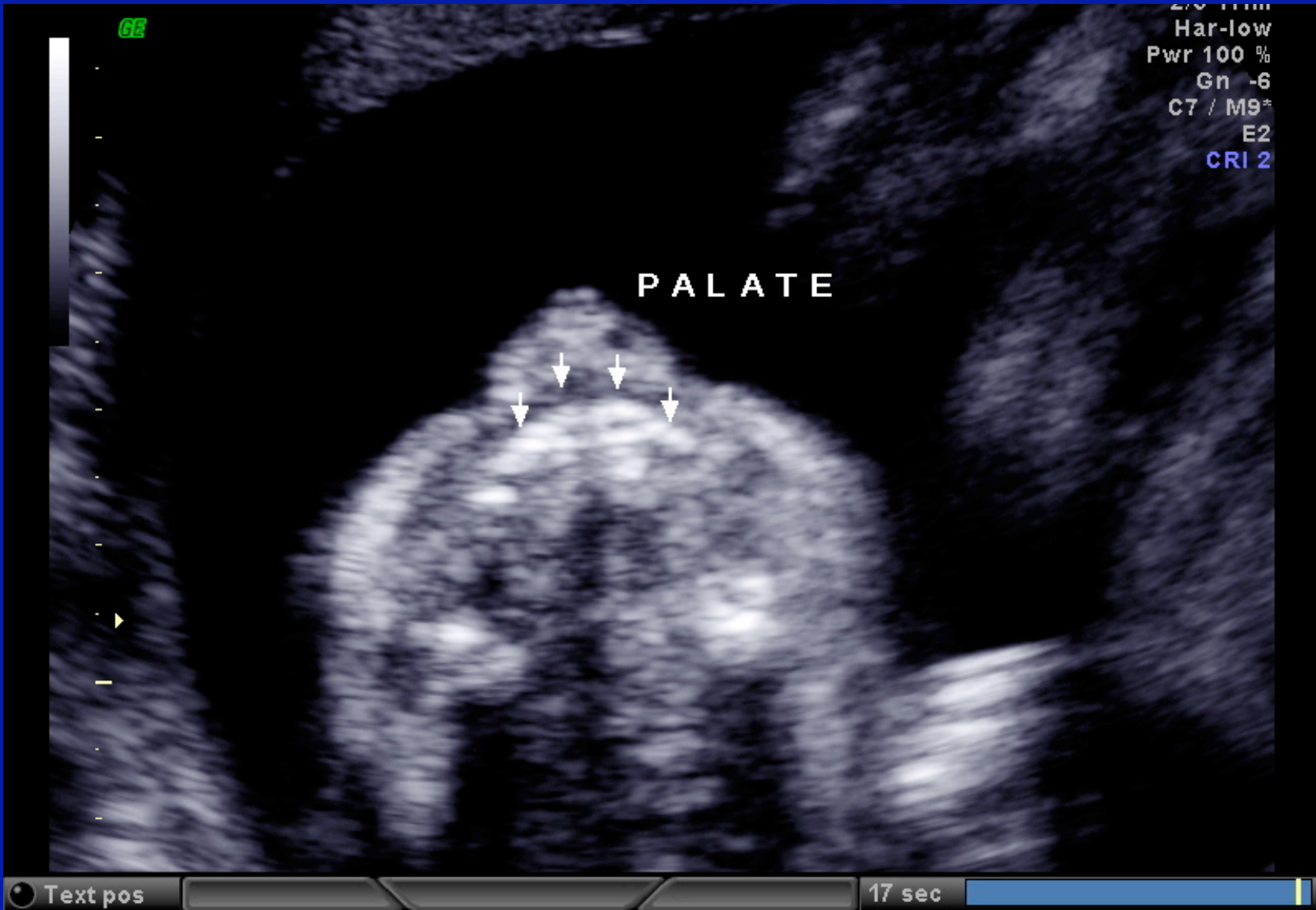
Second Trimester

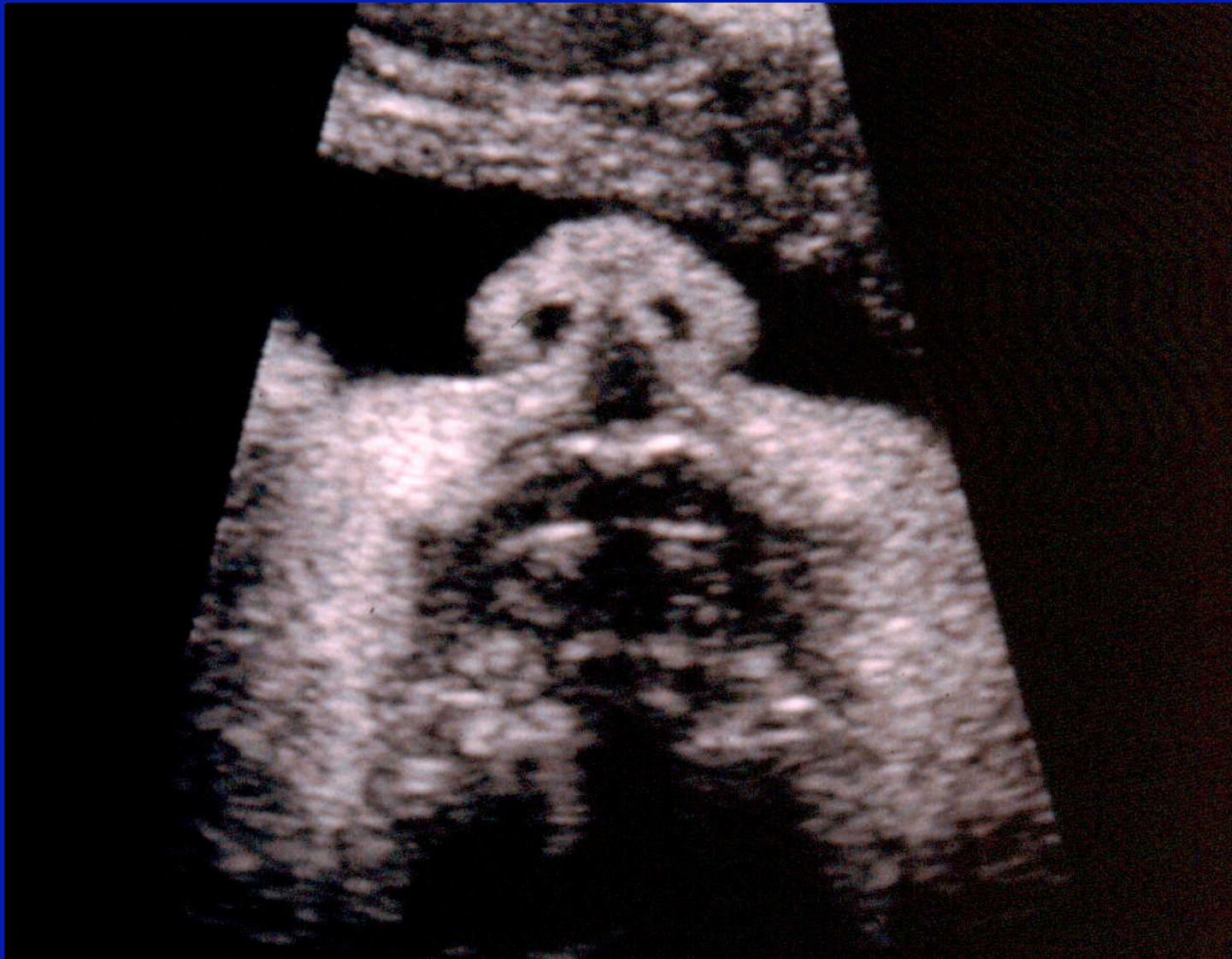


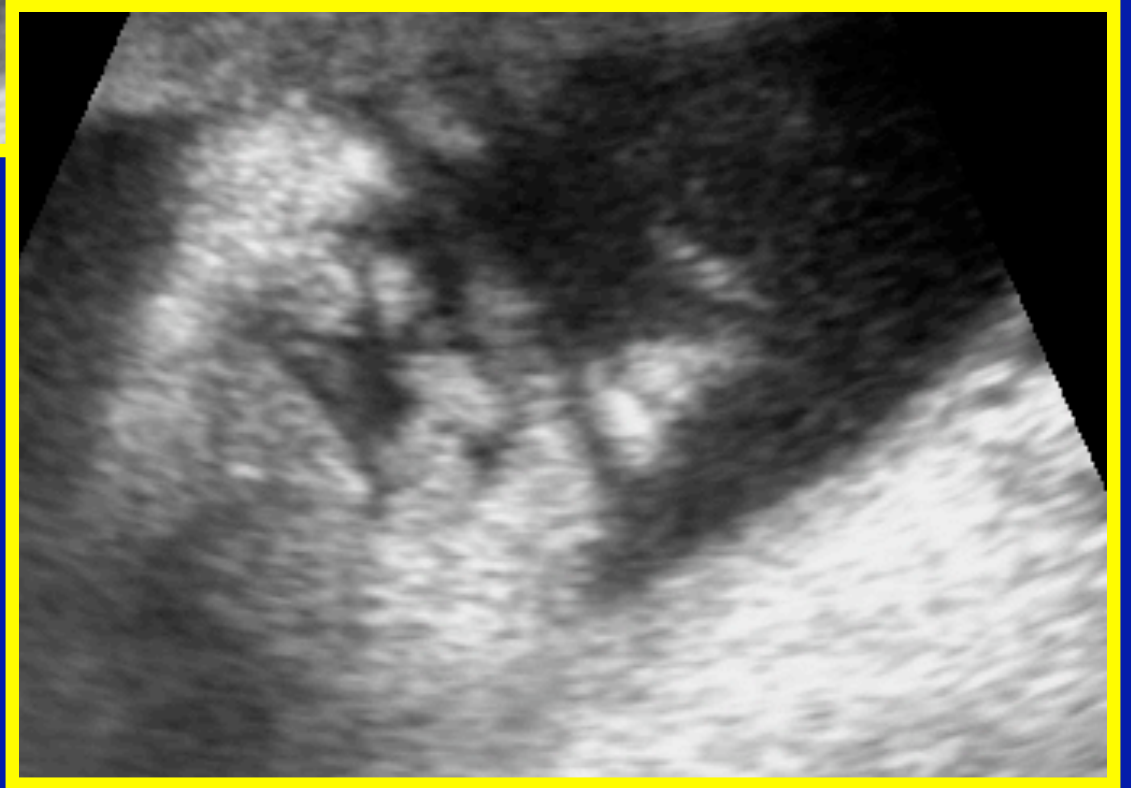
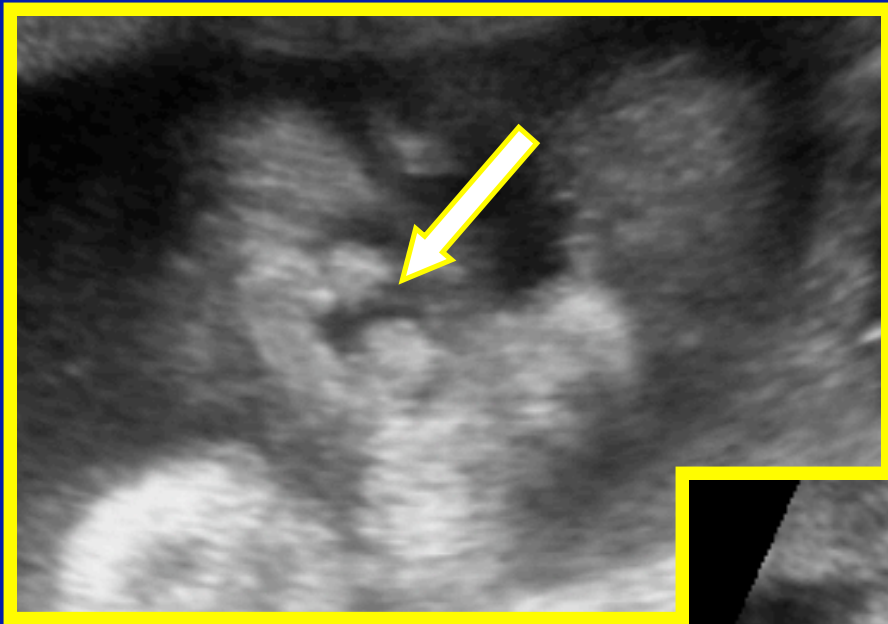


The Face







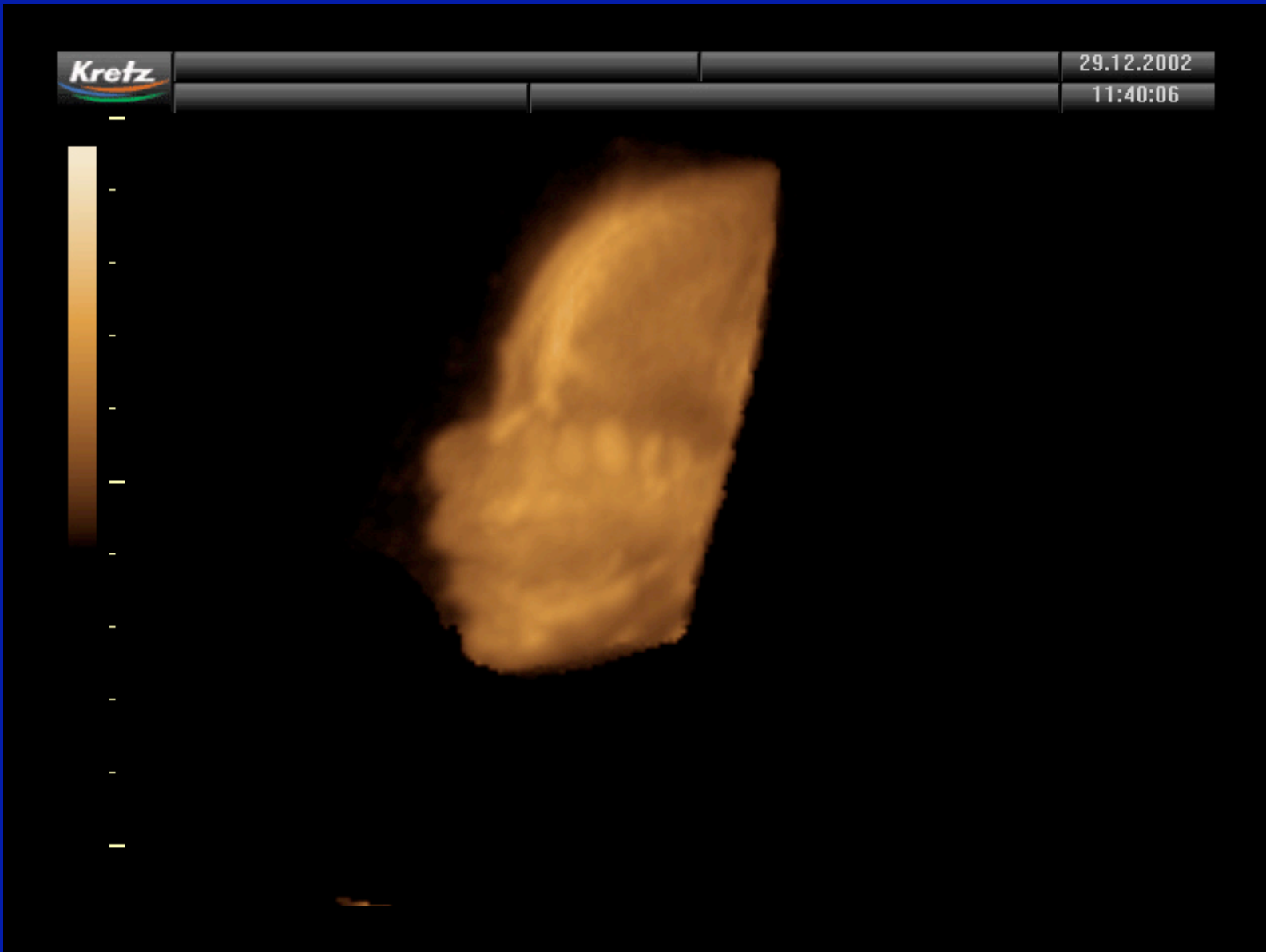


30 weeks



30 weeks



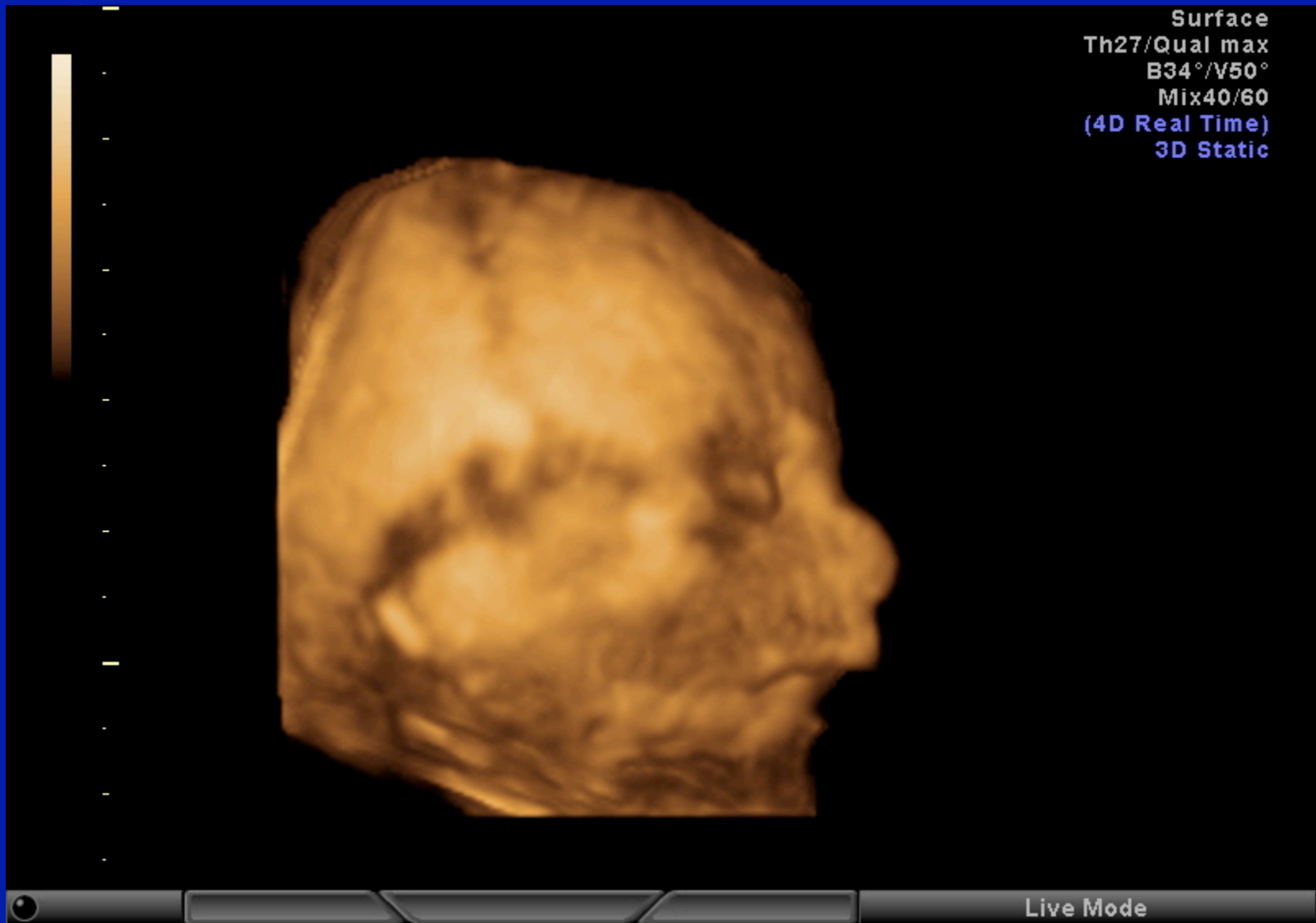


Normal Nasal Bone



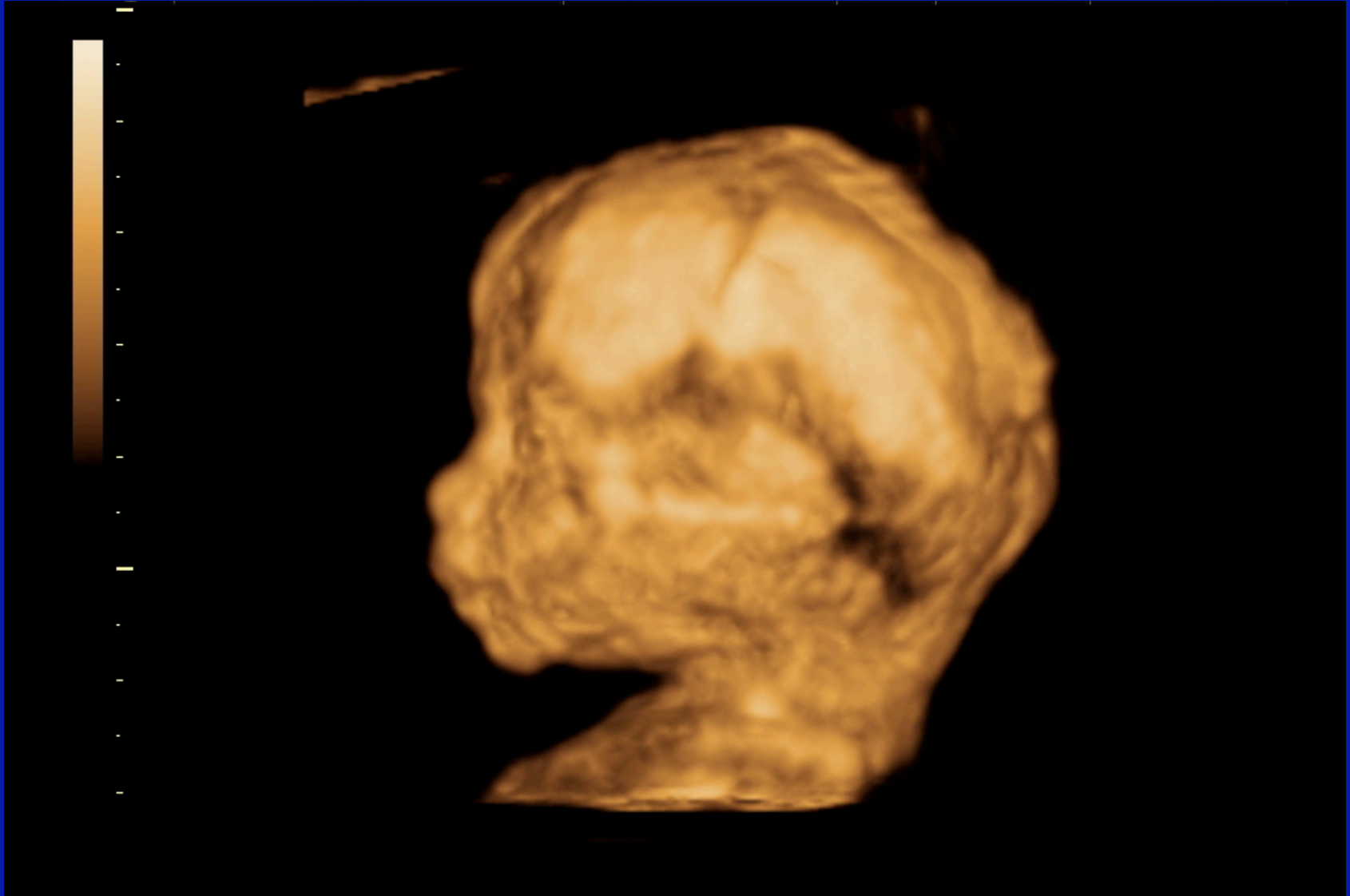
Down Syndrome



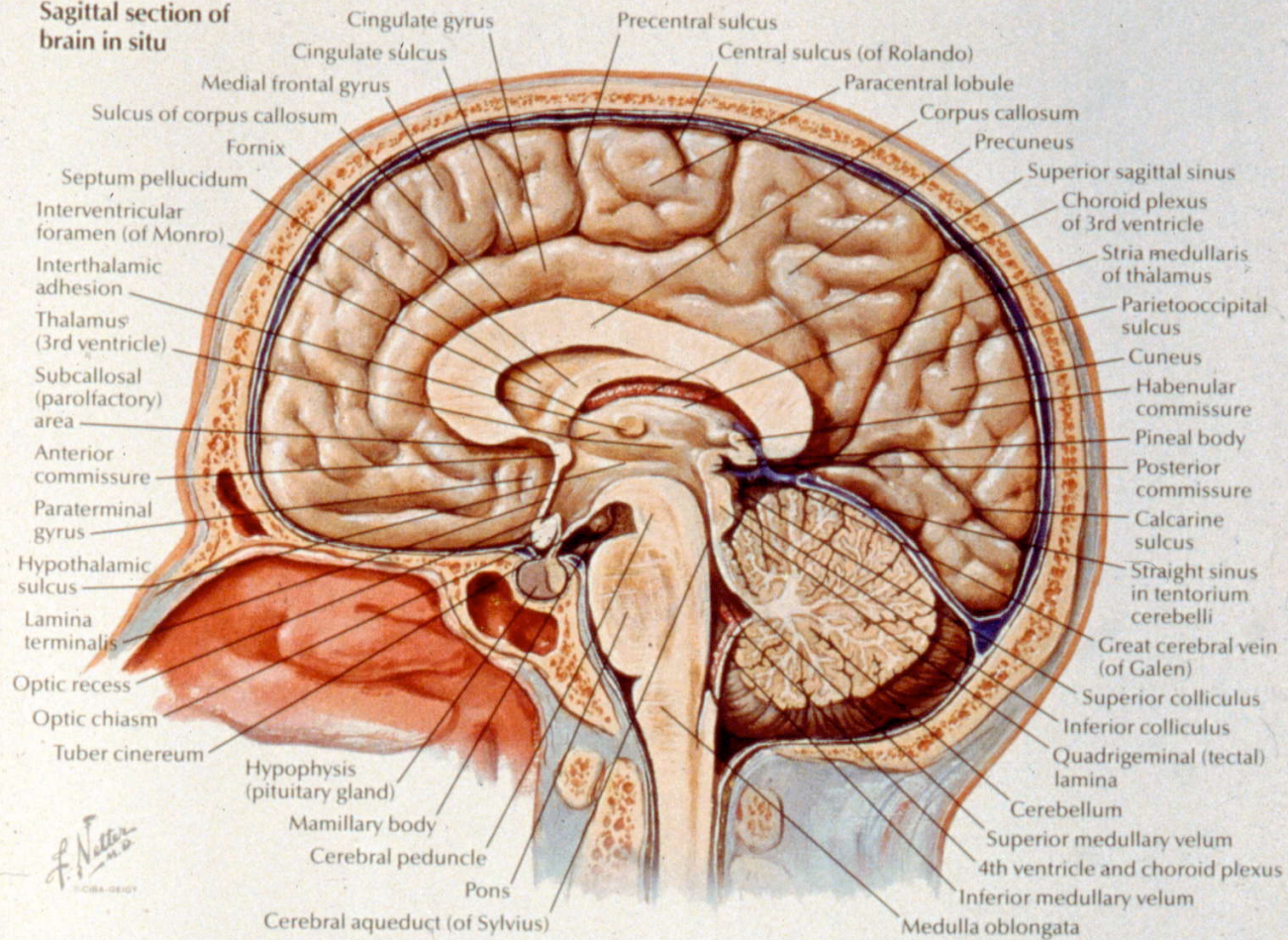


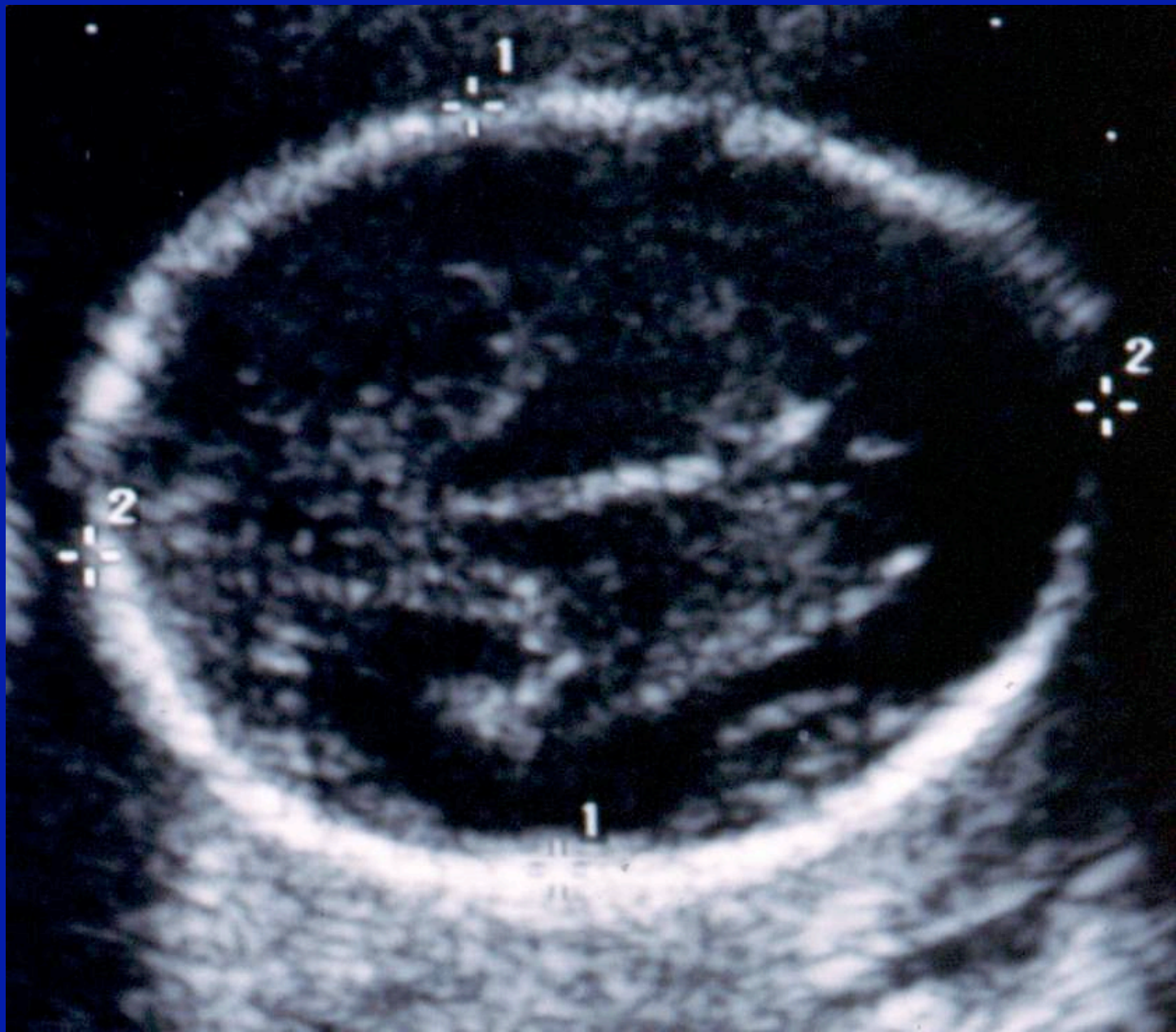
Micrognathia

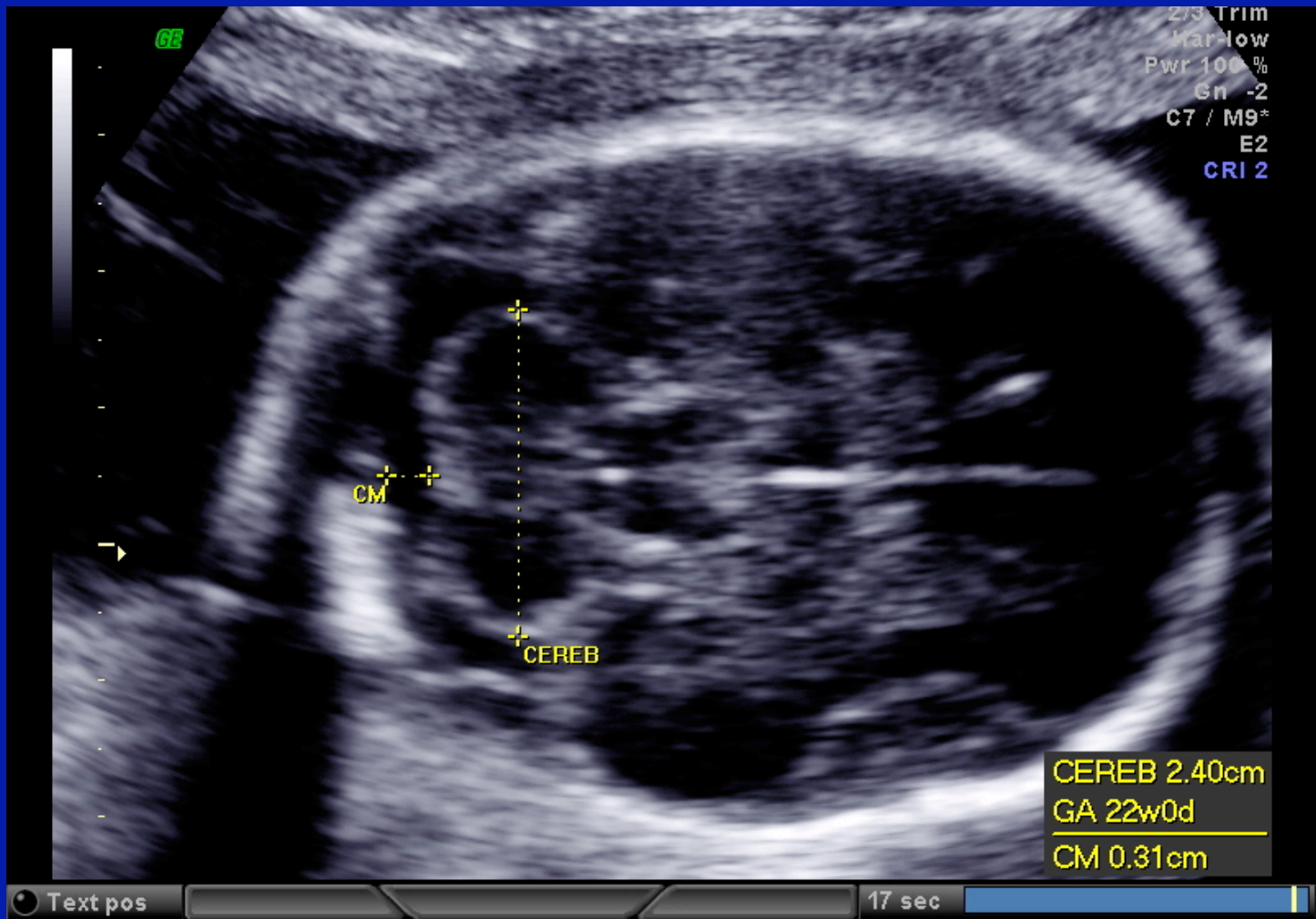
Central Nervous System



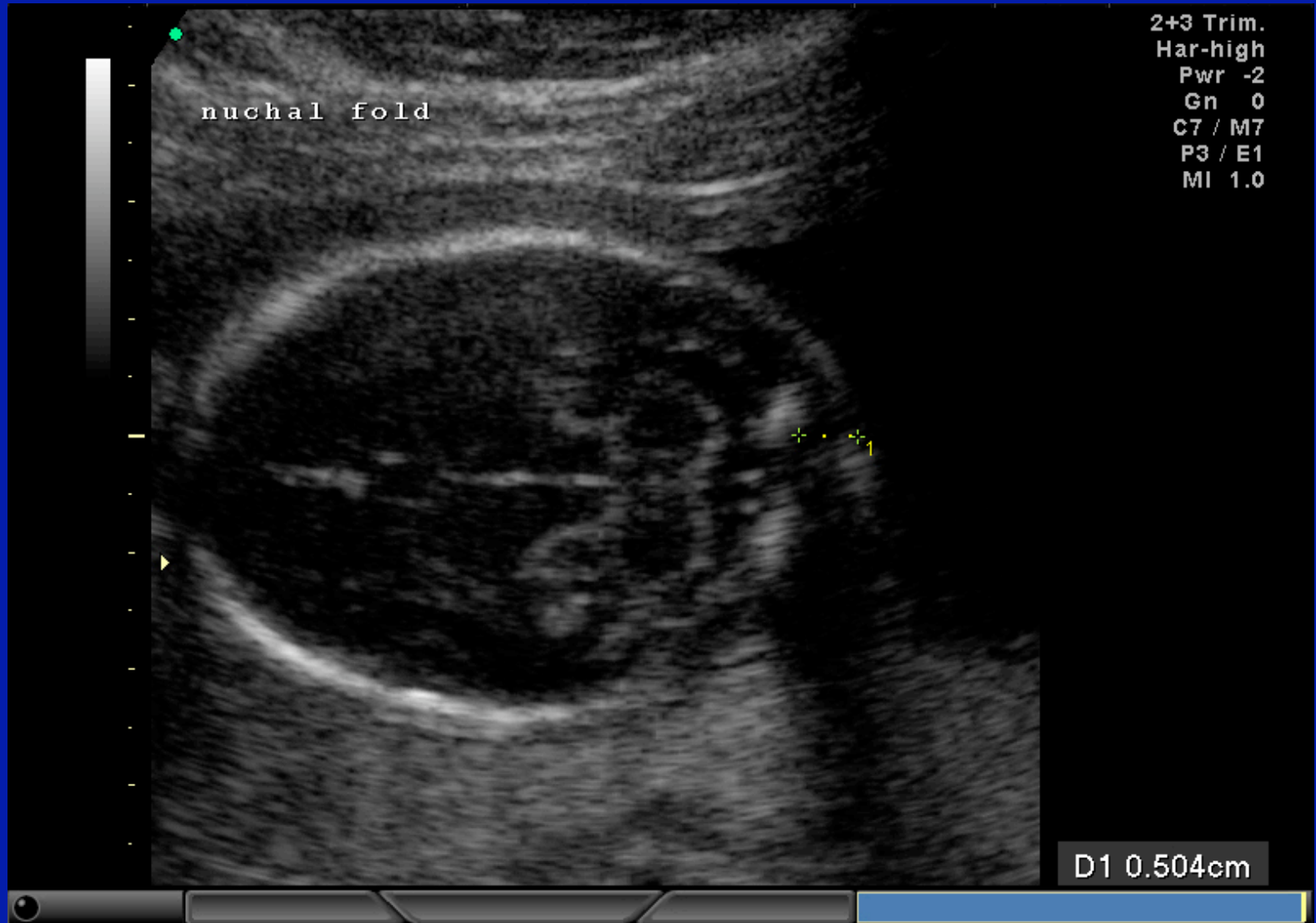
**Sagittal section of
brain in situ**

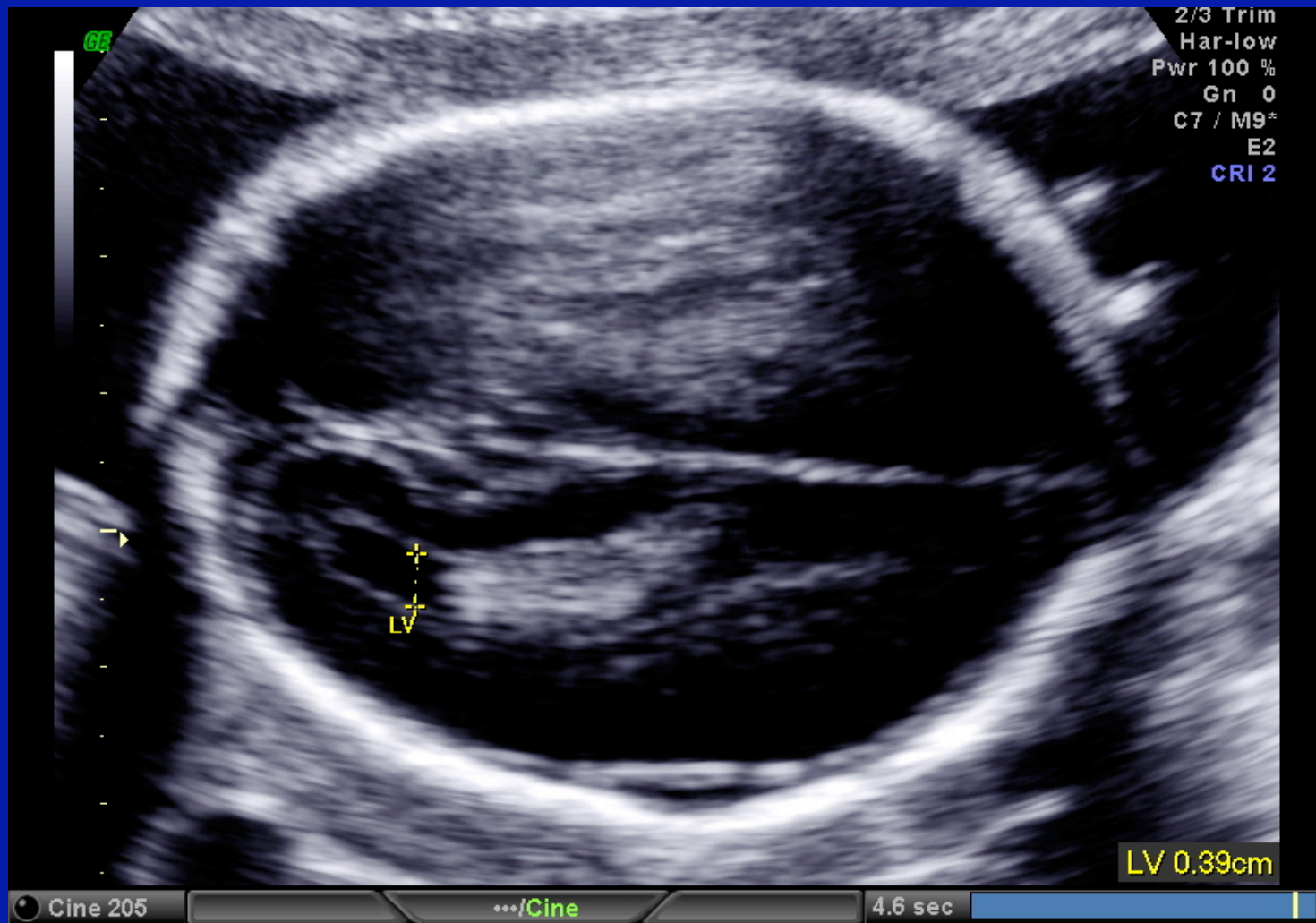




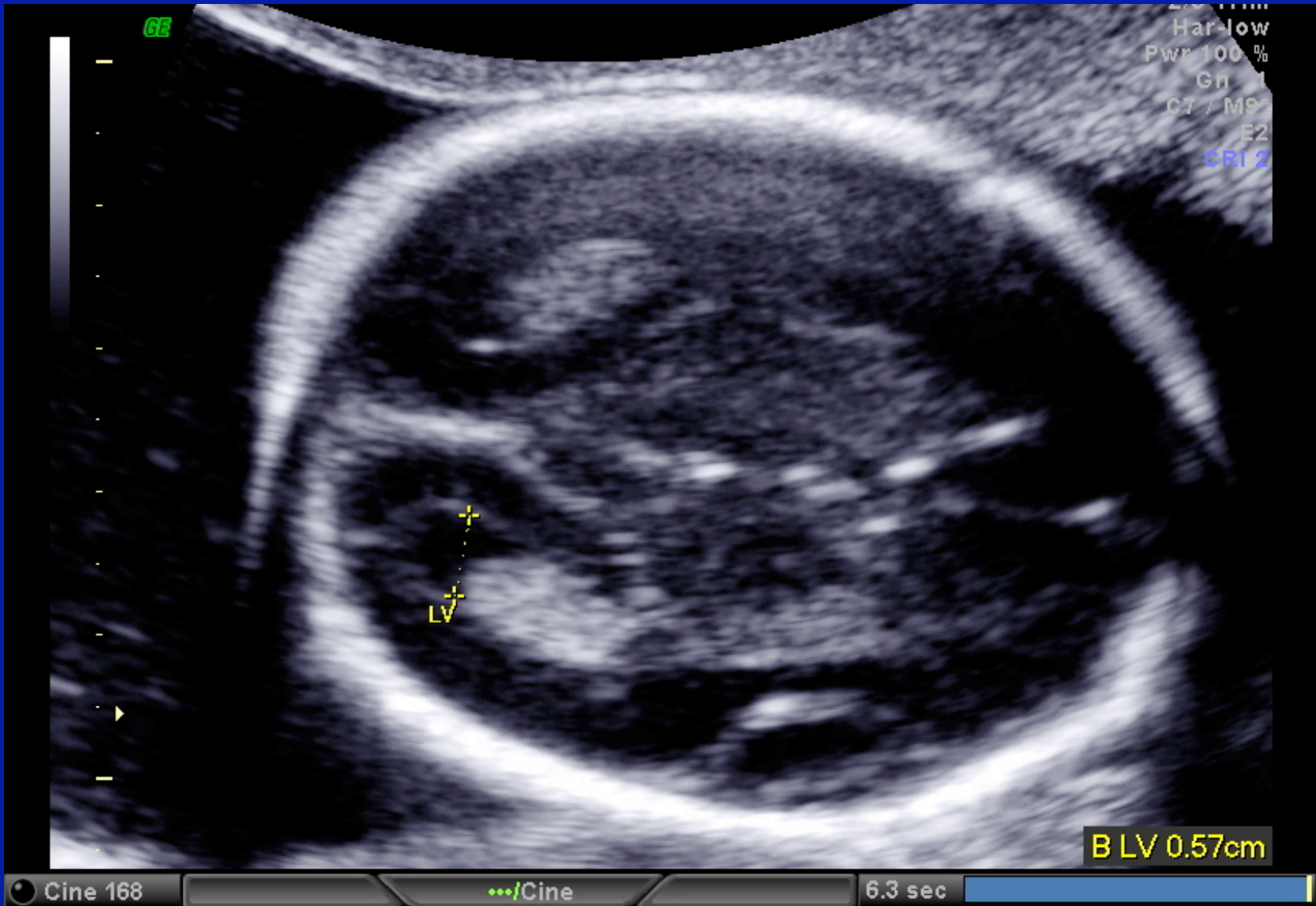


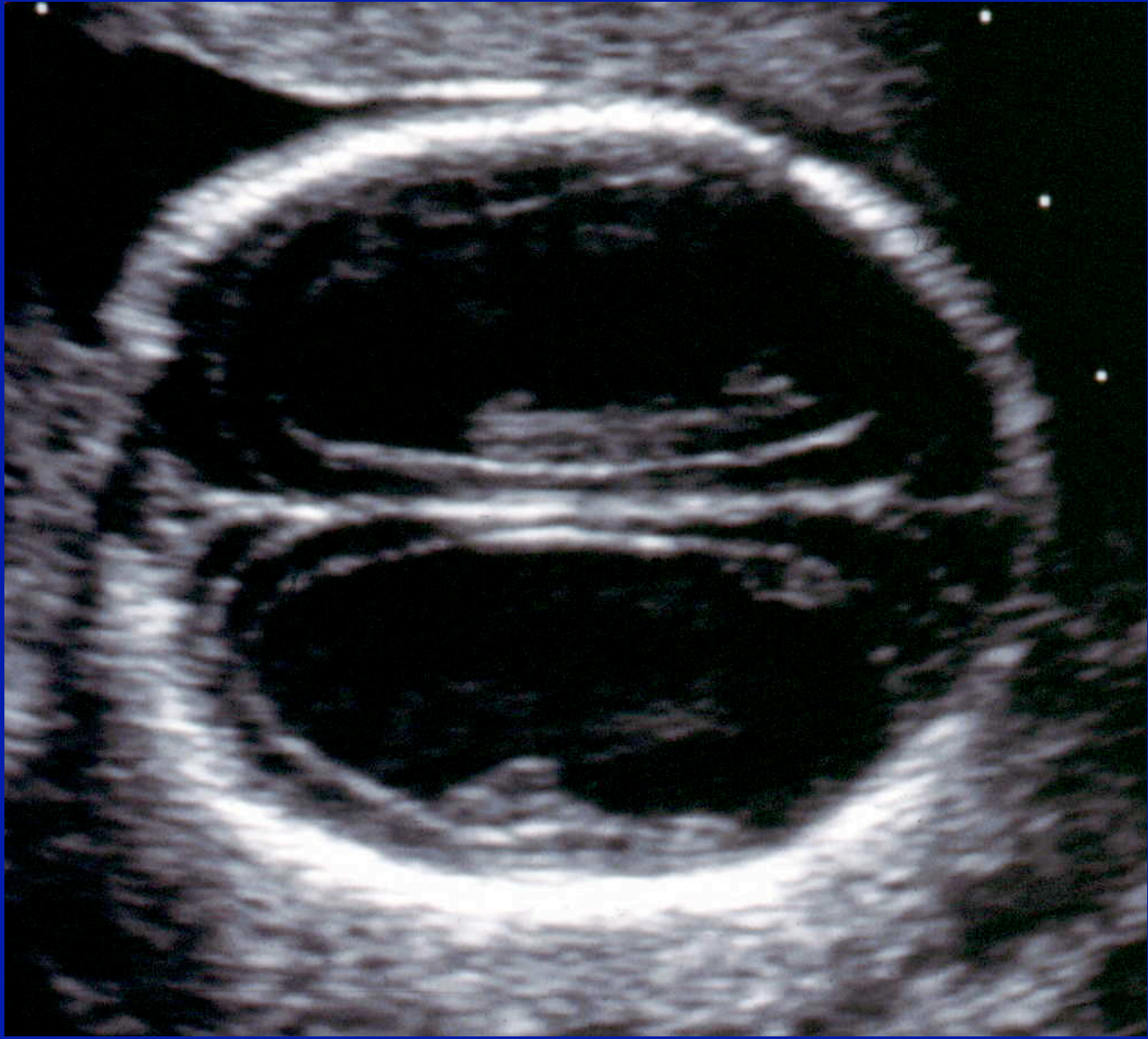
Cerebellar hemispheres

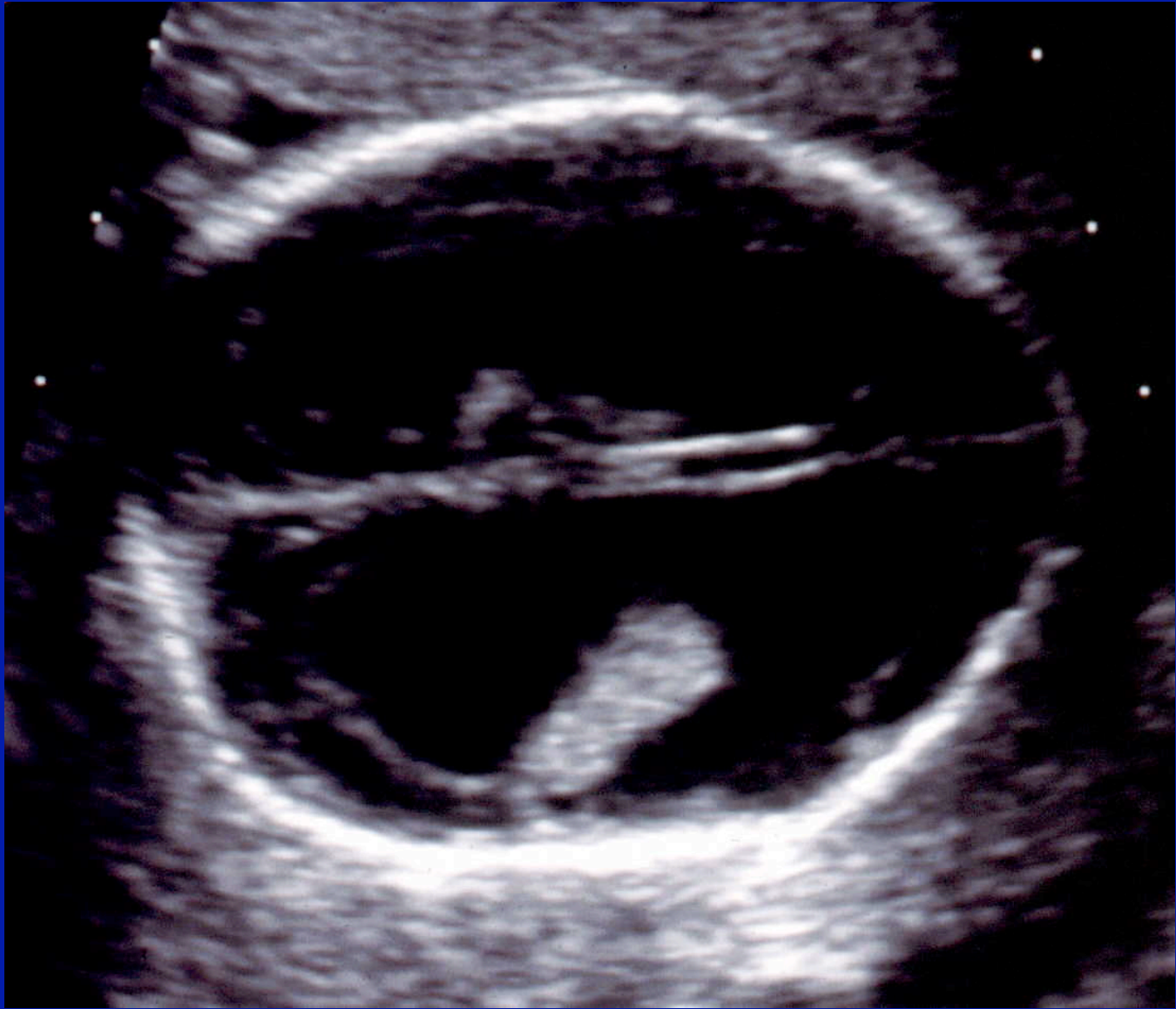


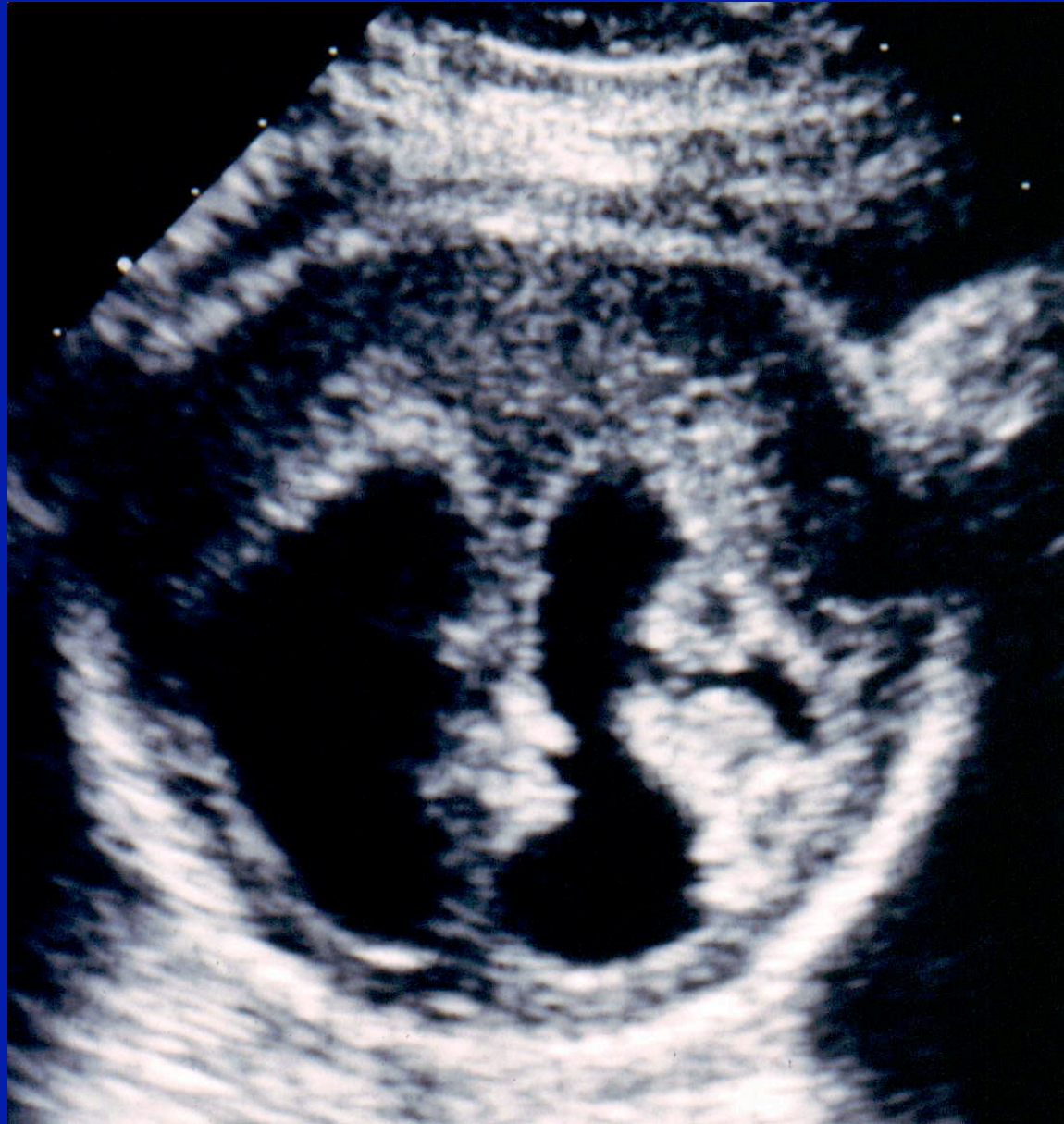


Lateral Ventricles









ICH with secondary hydrocephaly



MATTOCKS, ANDREA

EVMS Maternal Fetal Medicine

12-08-2003

240318280

RAB 4-8P/Obstetric

6.8cm

61Hz

14:31:14

2+3 Trim.

Har-low

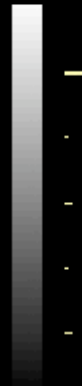
Pwr -2

Gn 6

C7 / M7

P3 / E1

MI 0.6



Freeze



MATTOCKS, ANDREA

EVMS Maternal Fetal Medicine

12-09-2003

240318280

RAB 4-8P/Obstetric

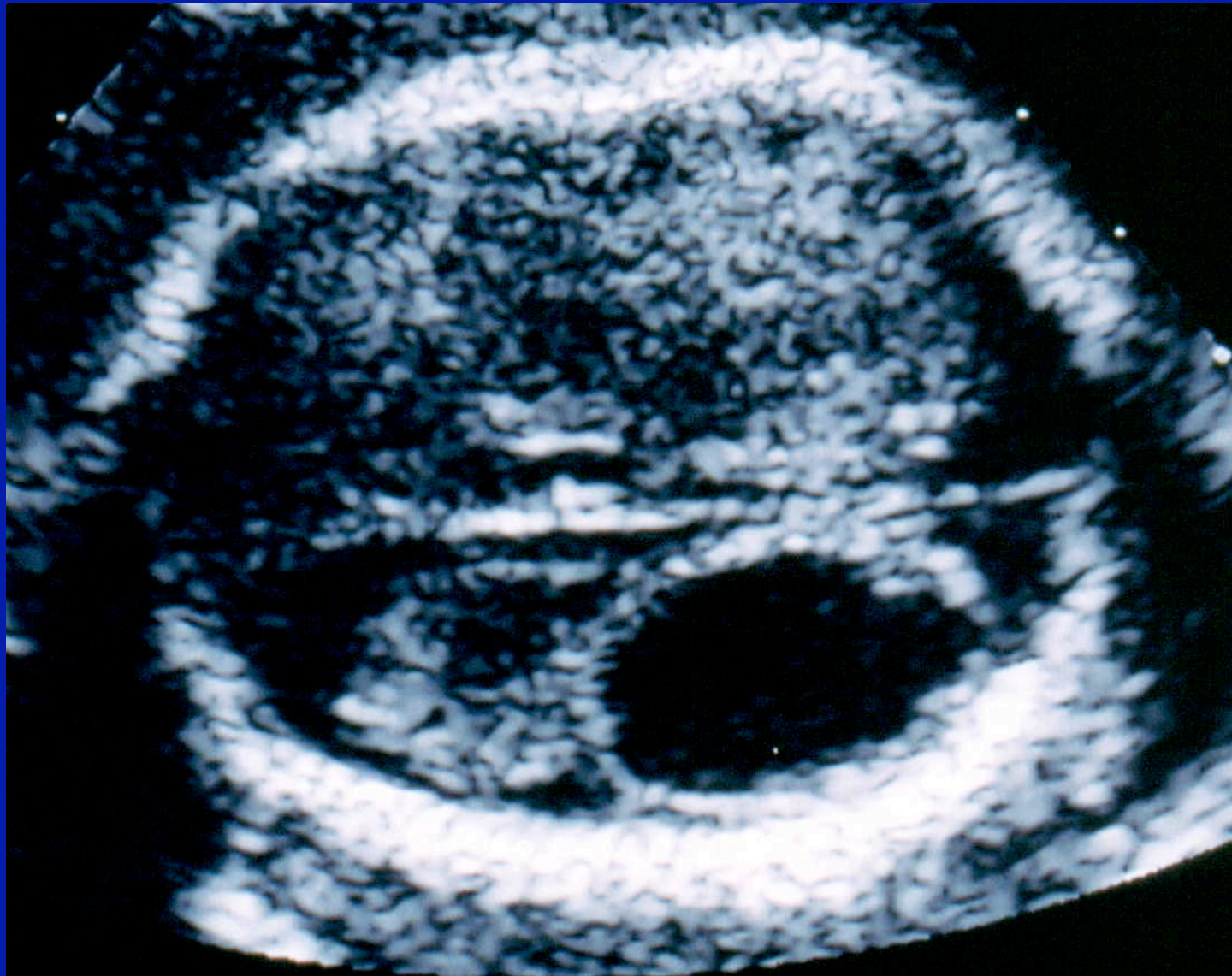
14.4cm

77Hz

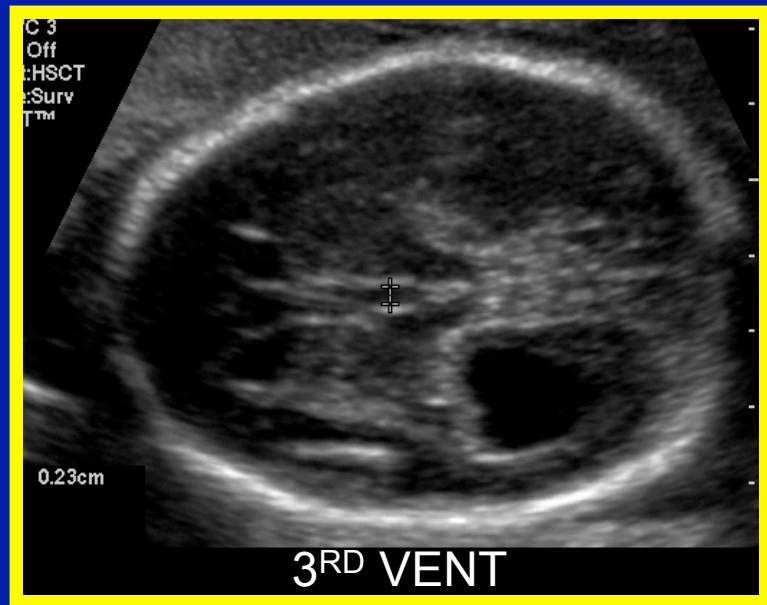
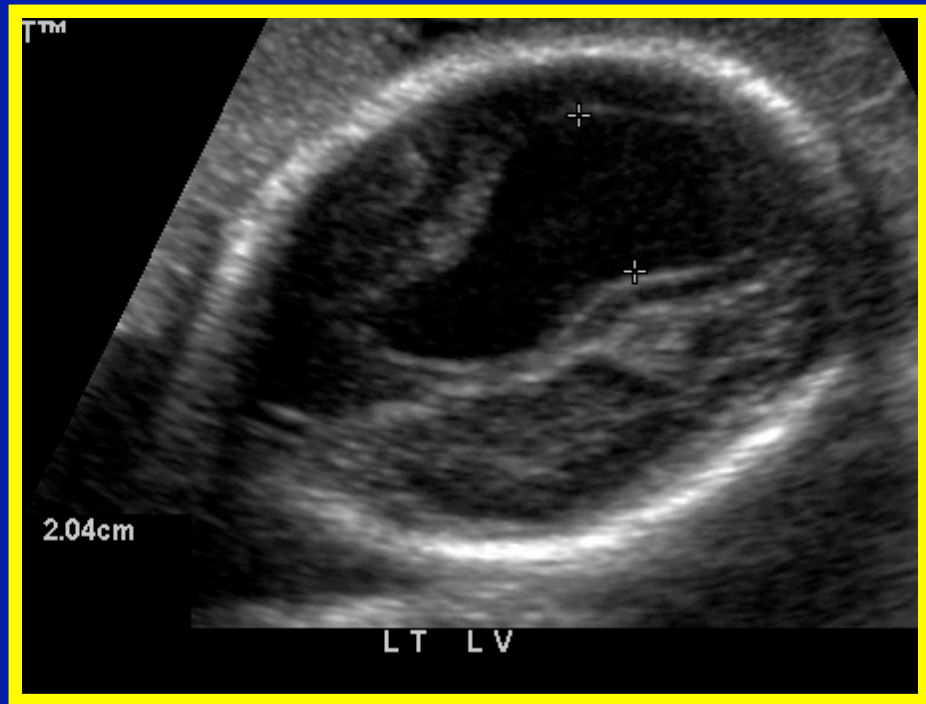
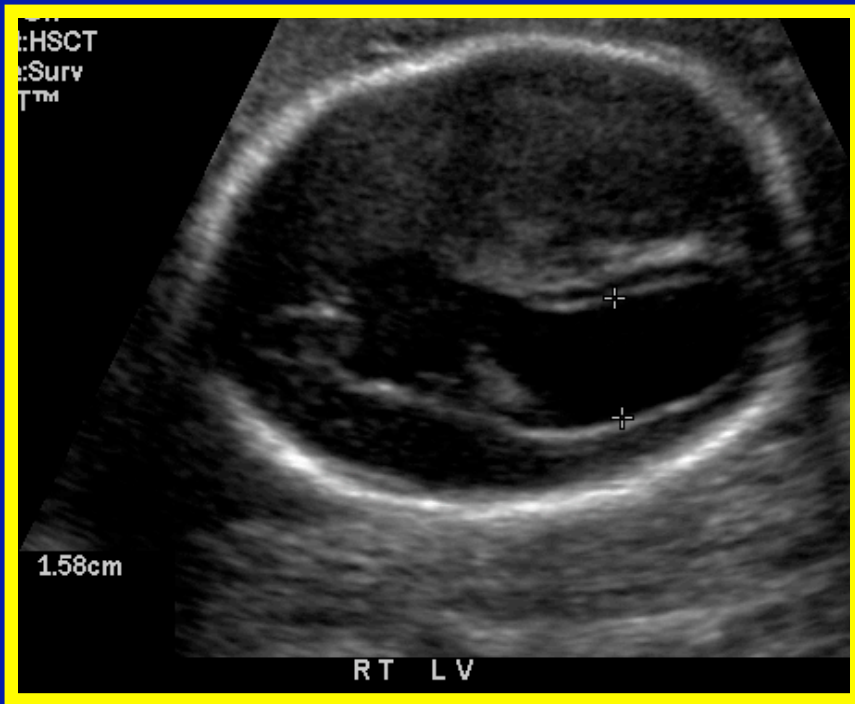
11:12:36



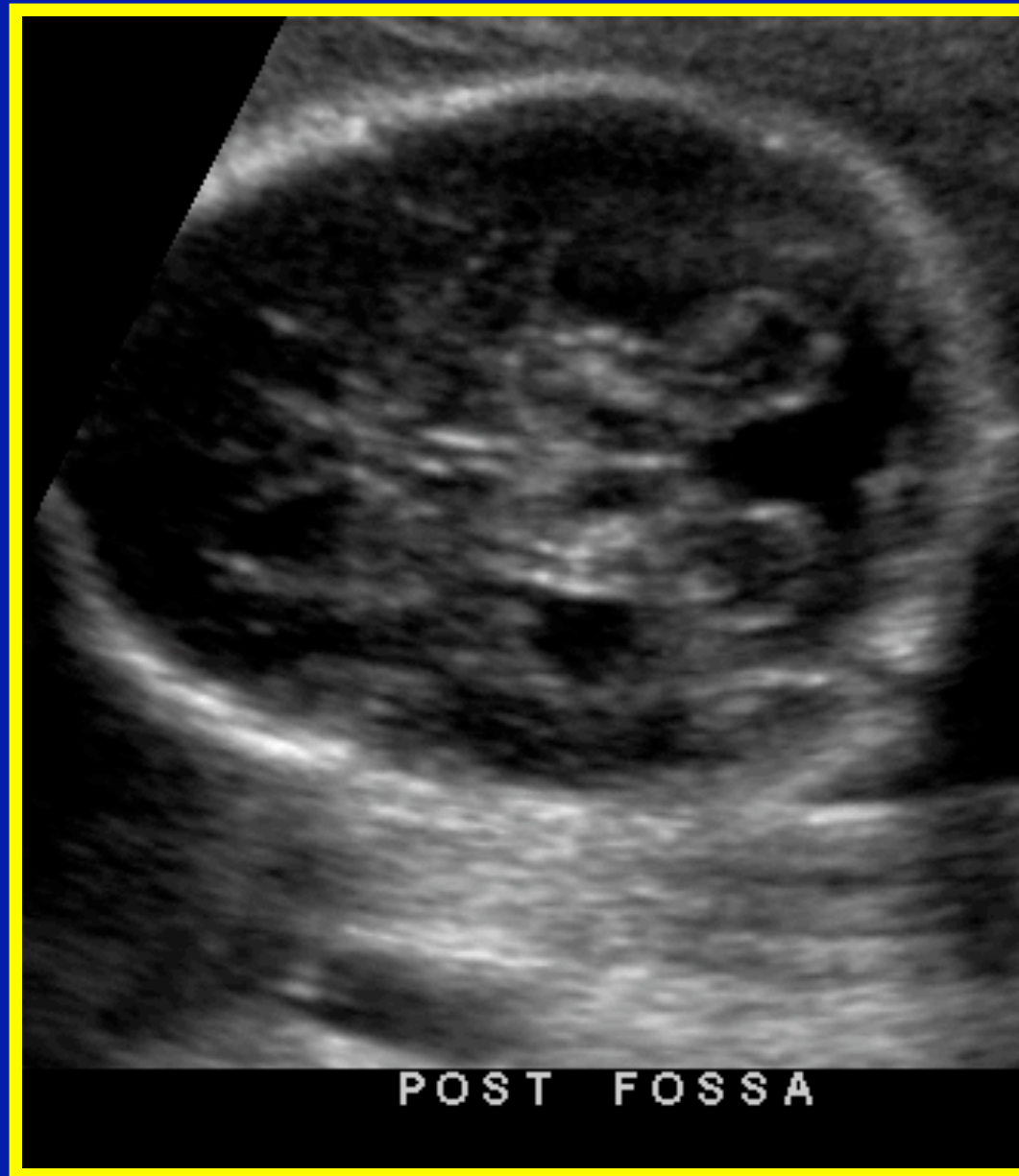
Live Mode



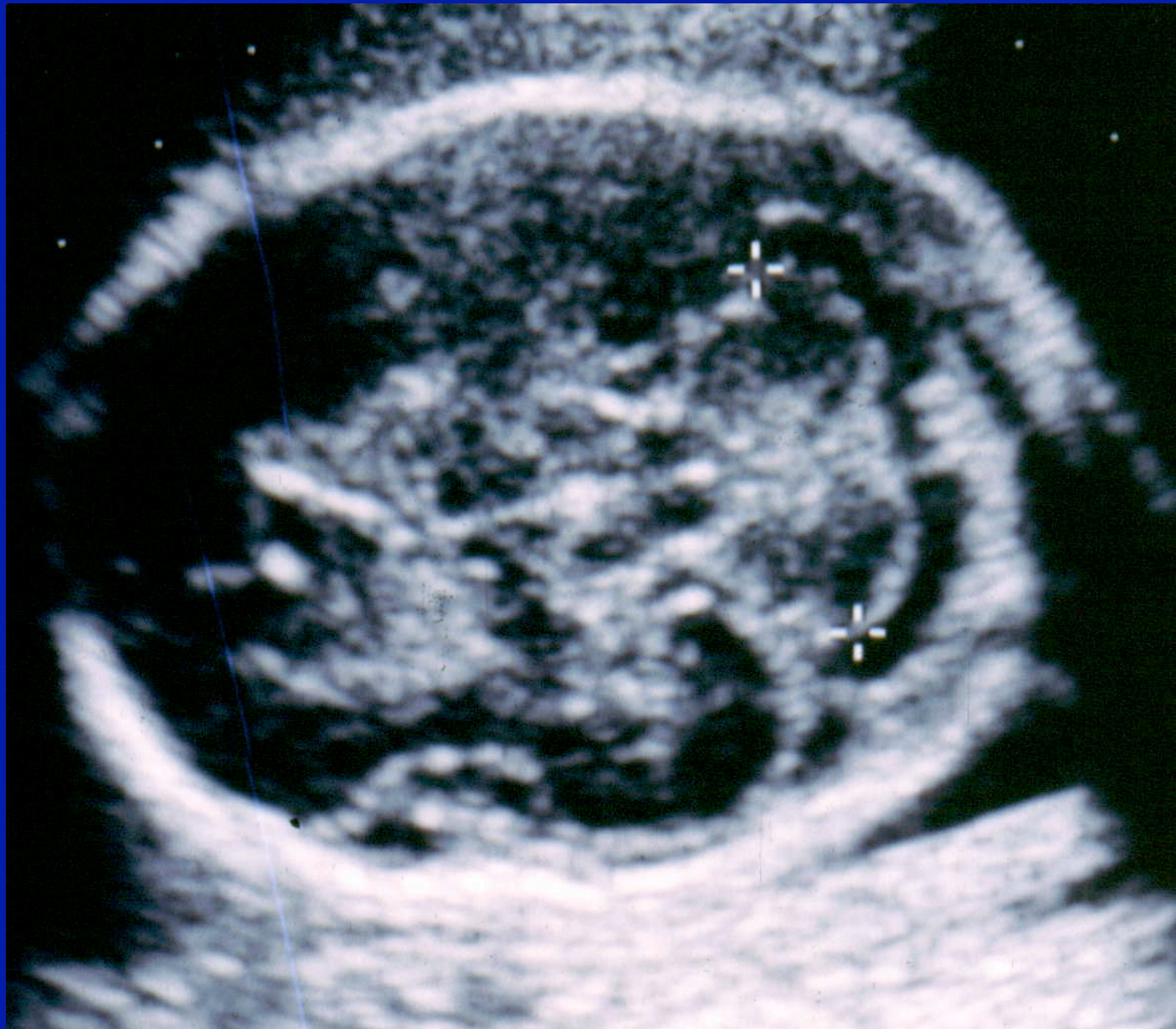
Porencephalic cyst

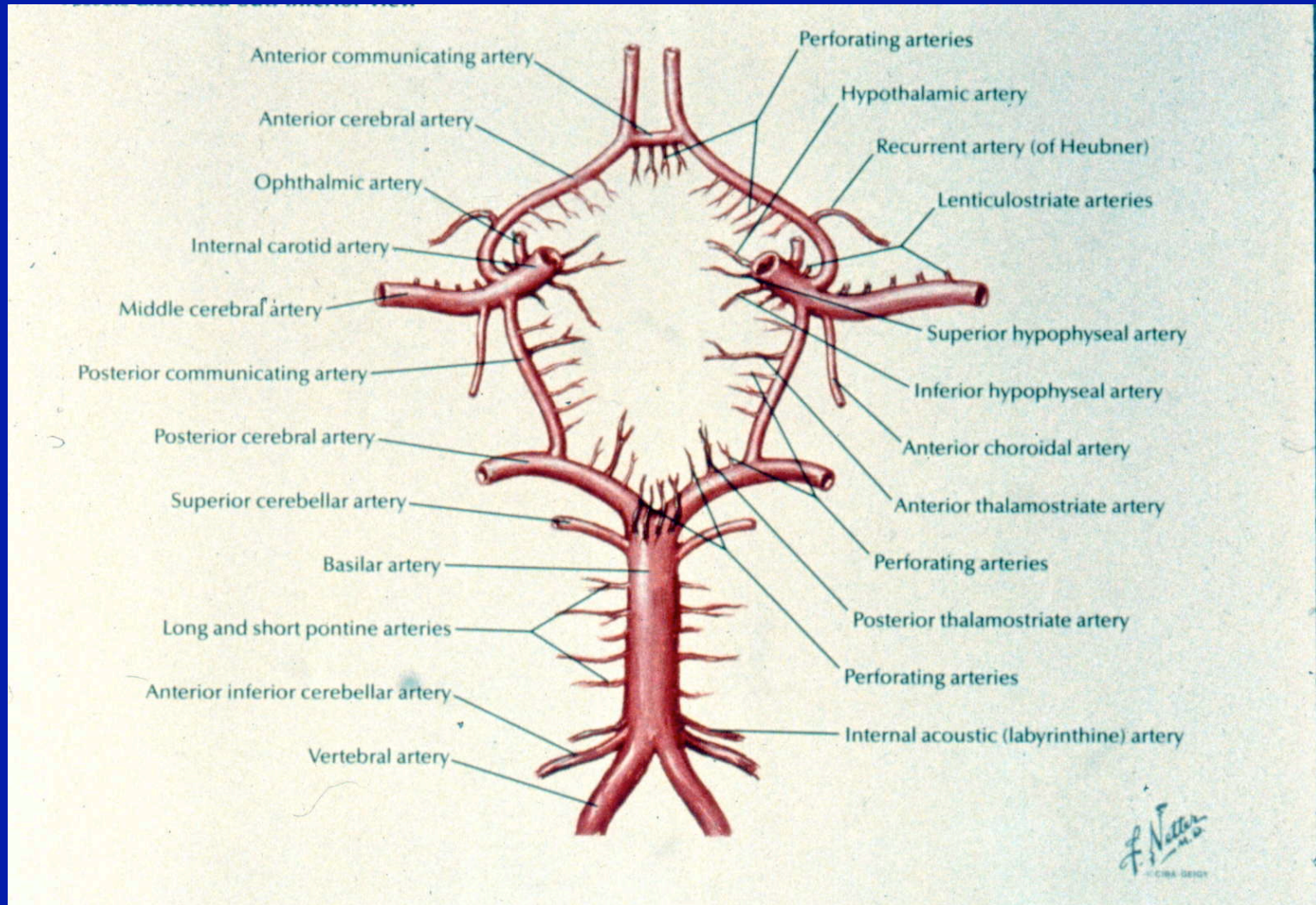


24 weeks



24 weeks





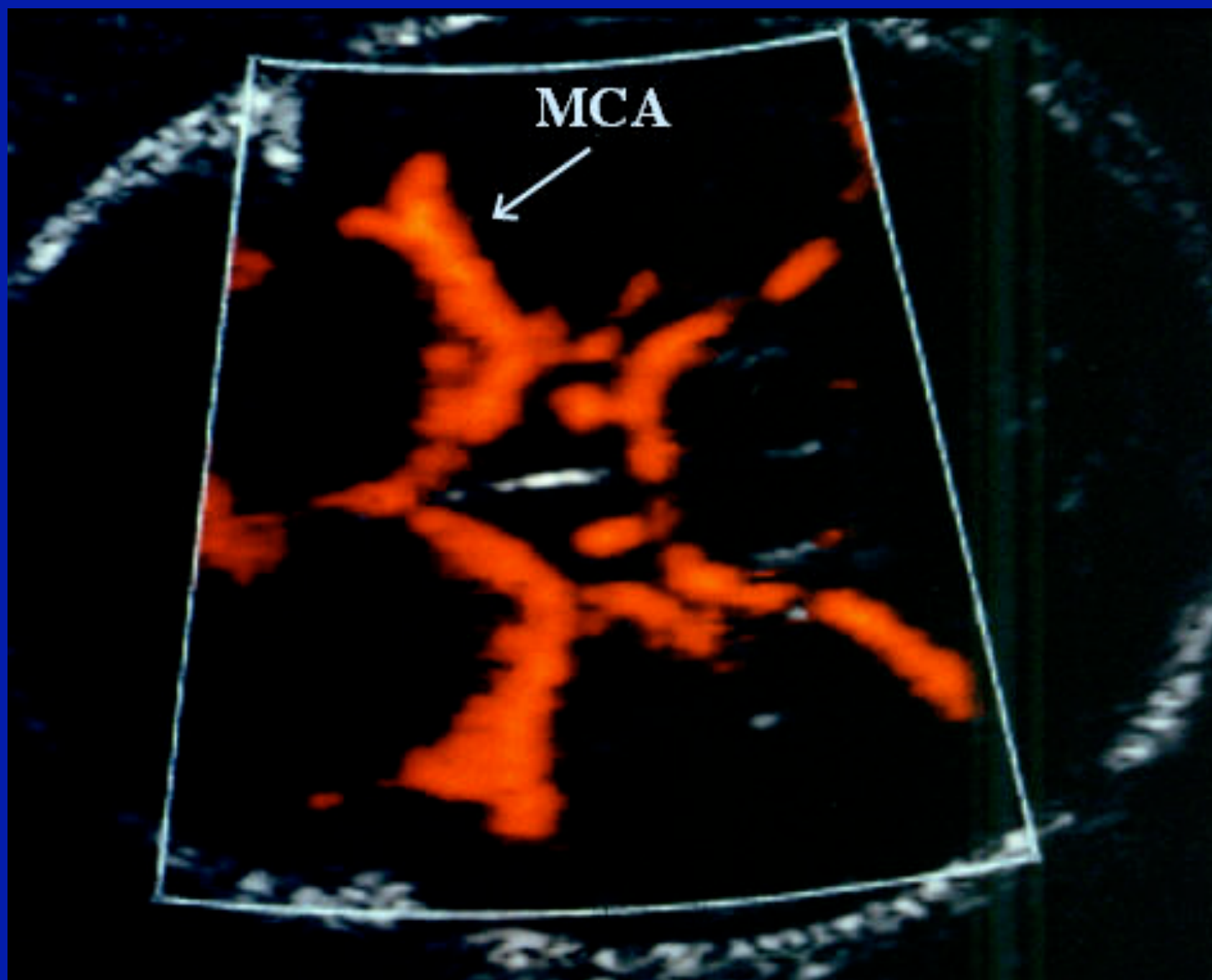
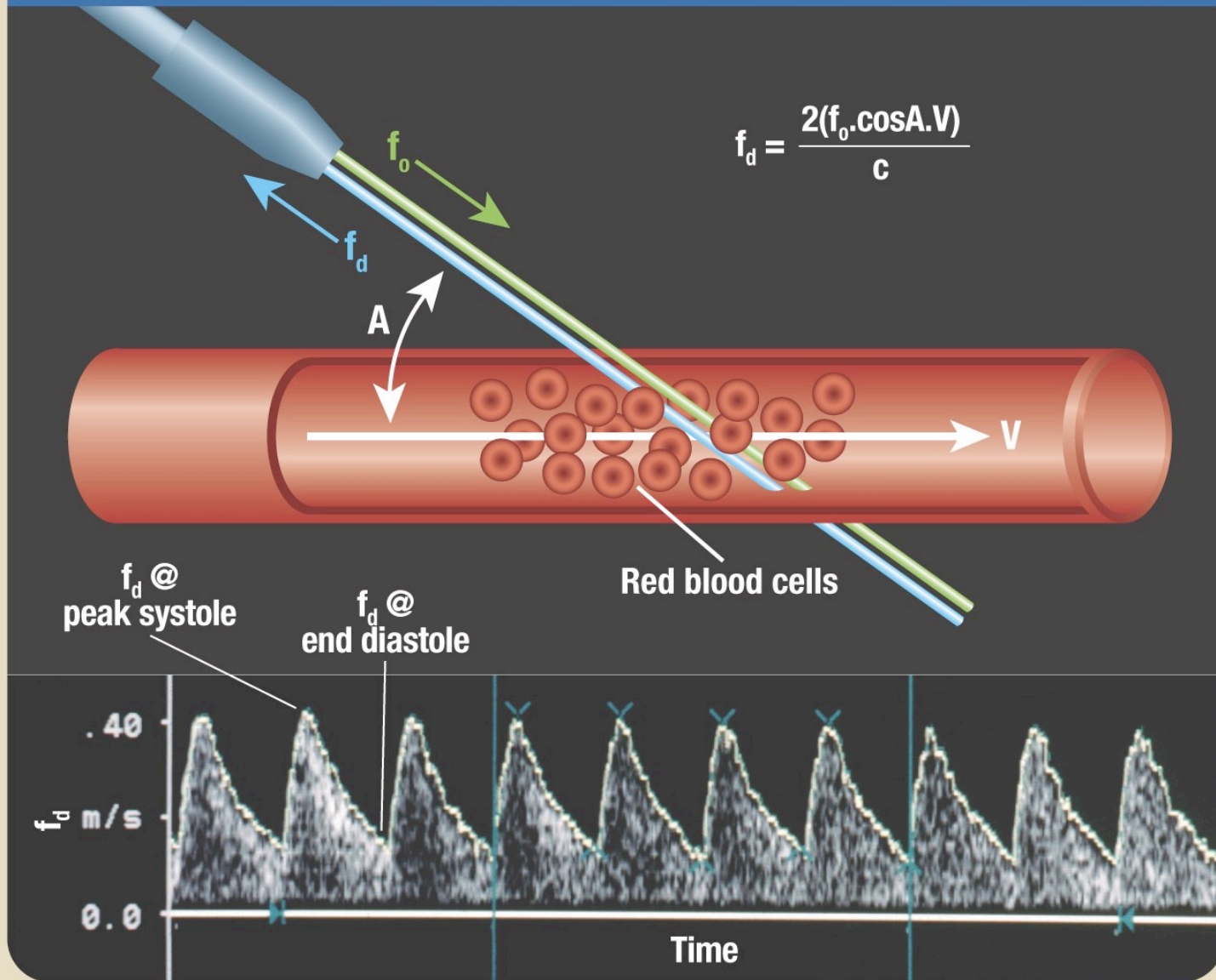
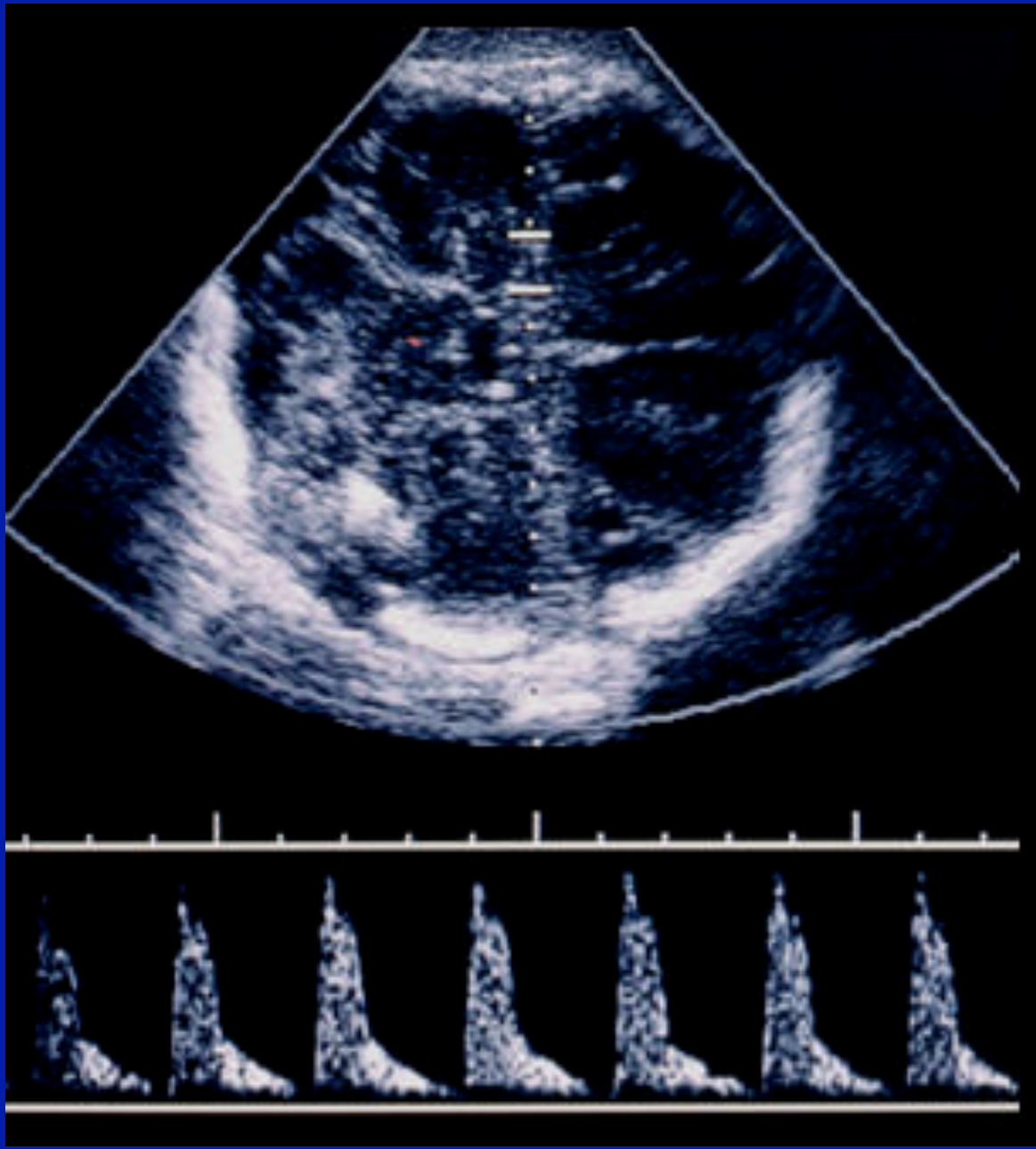
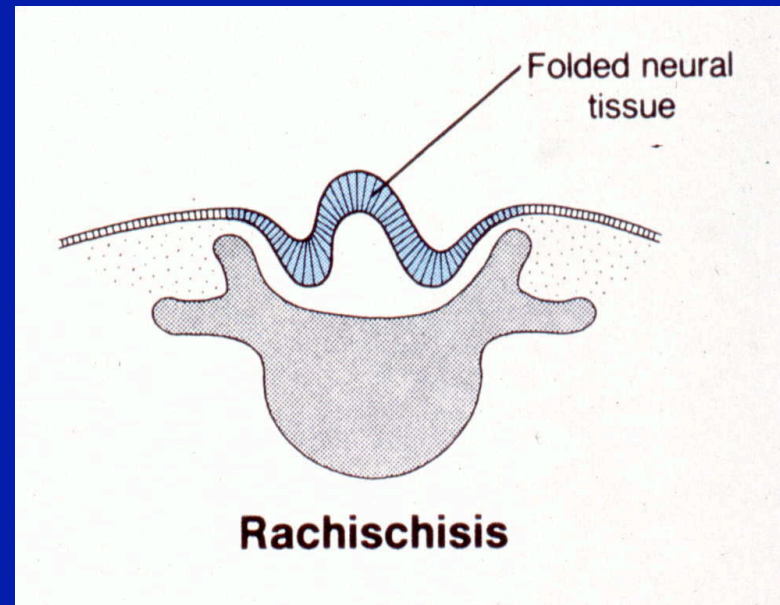
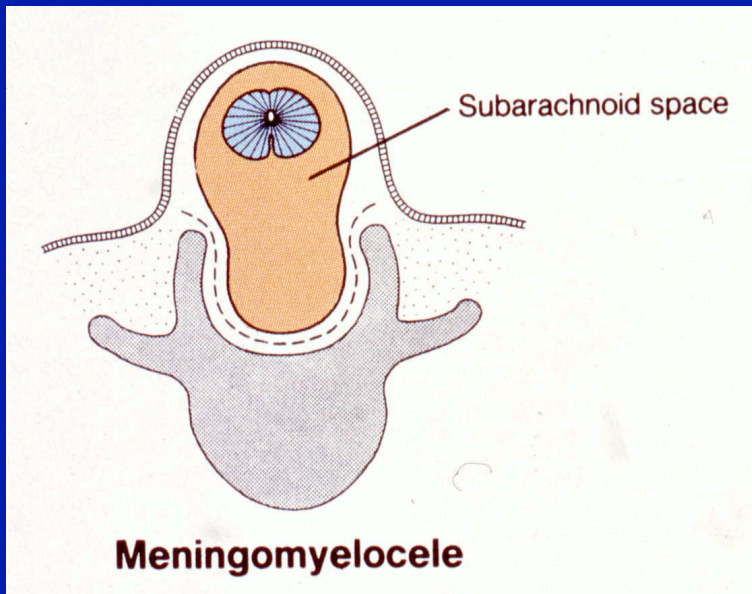
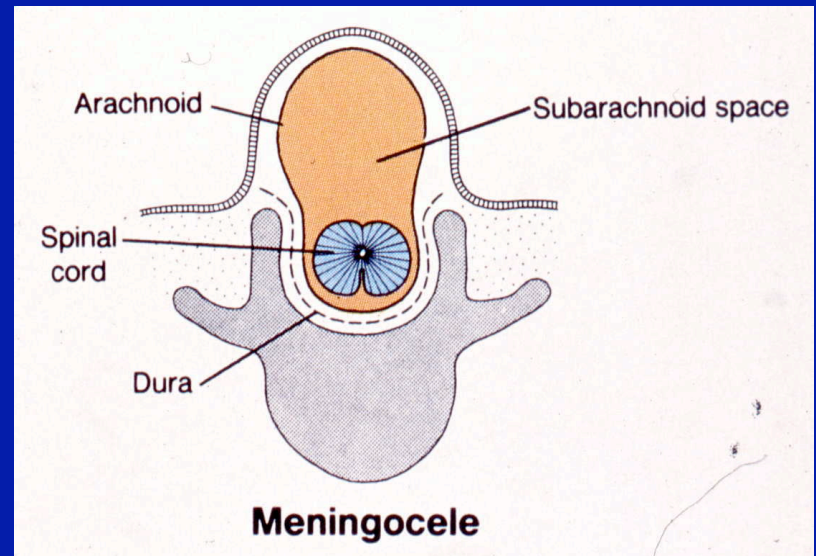
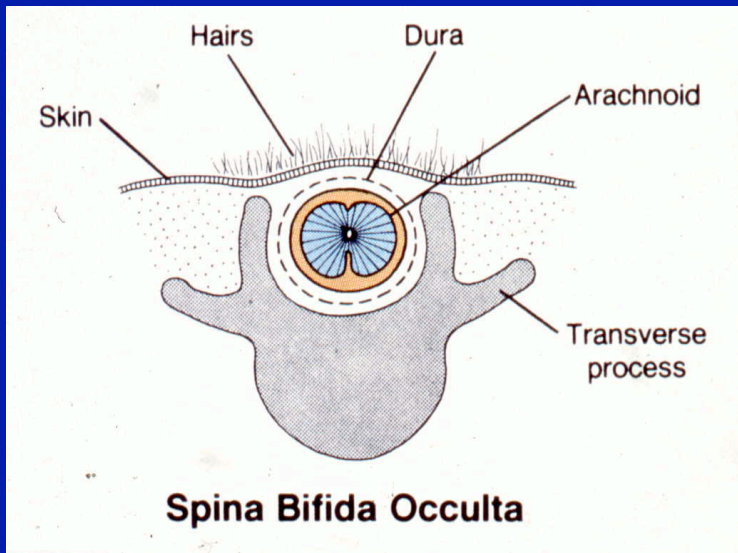


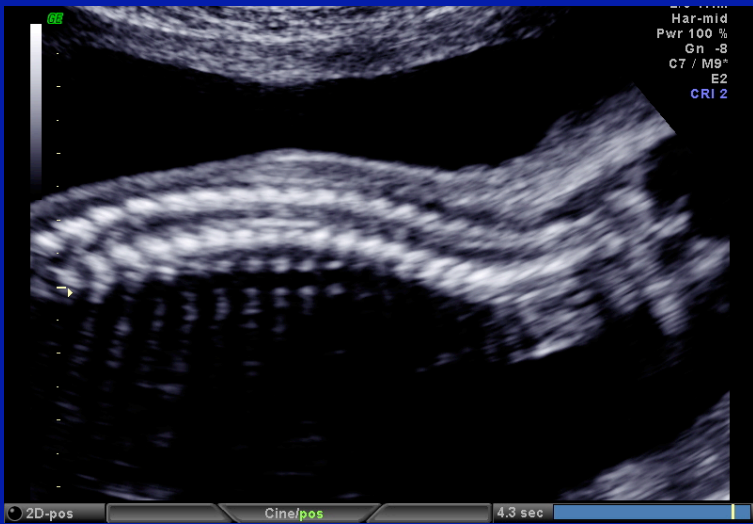
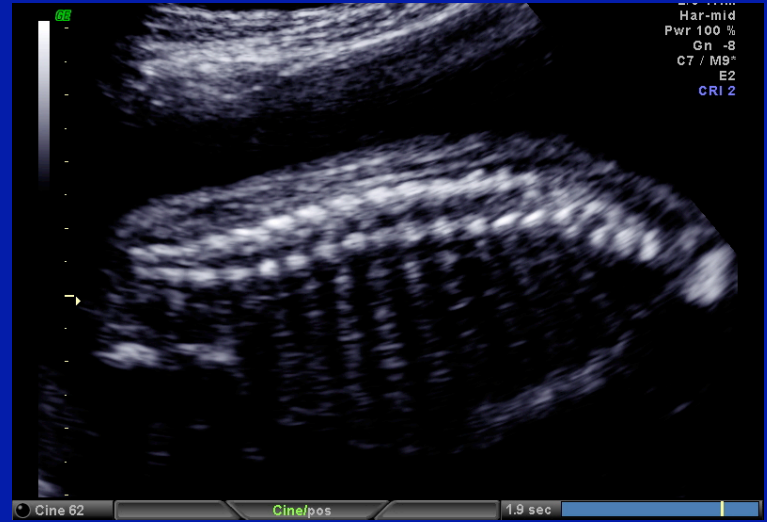
FIGURE 1. The Doppler effect



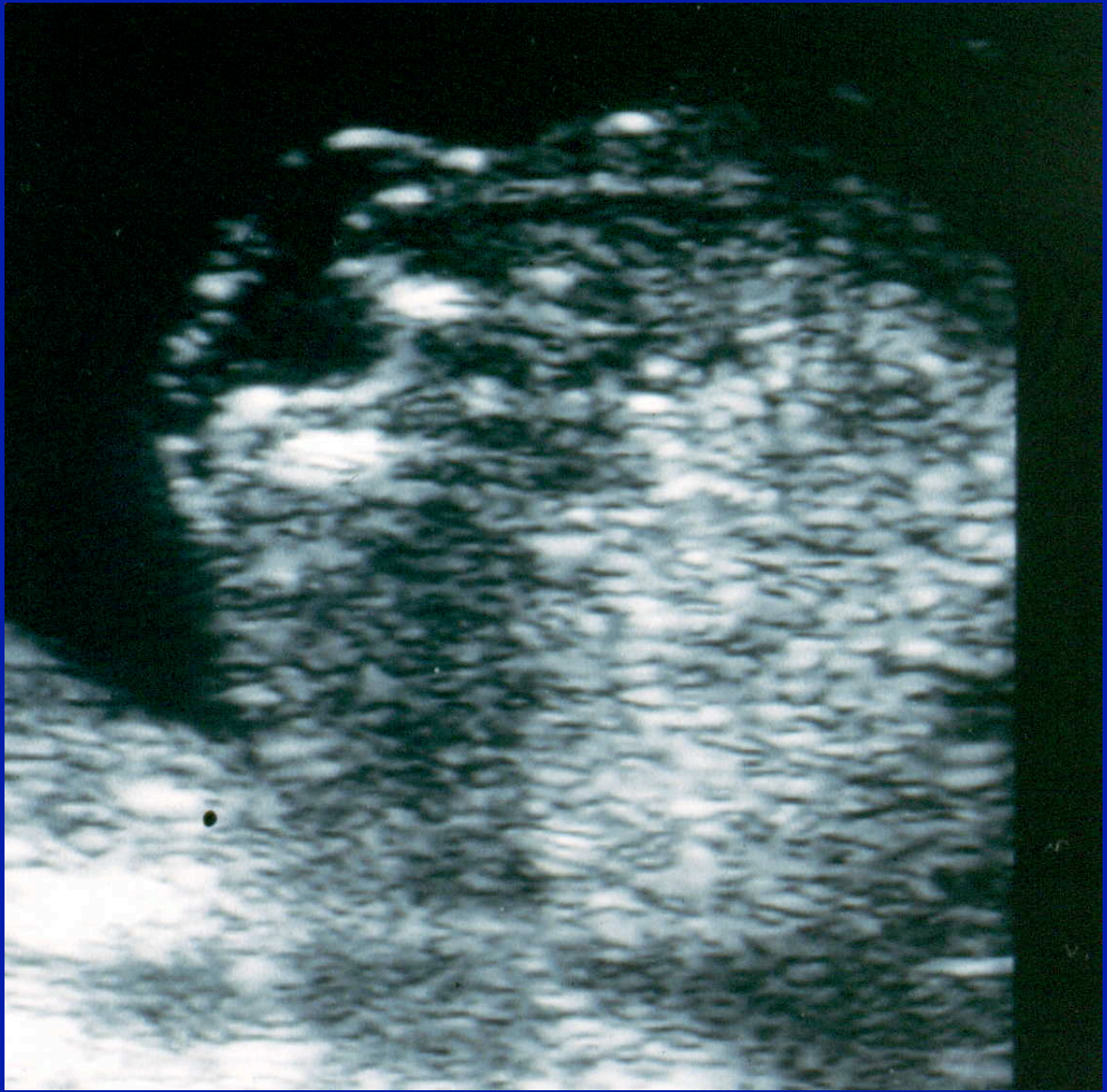


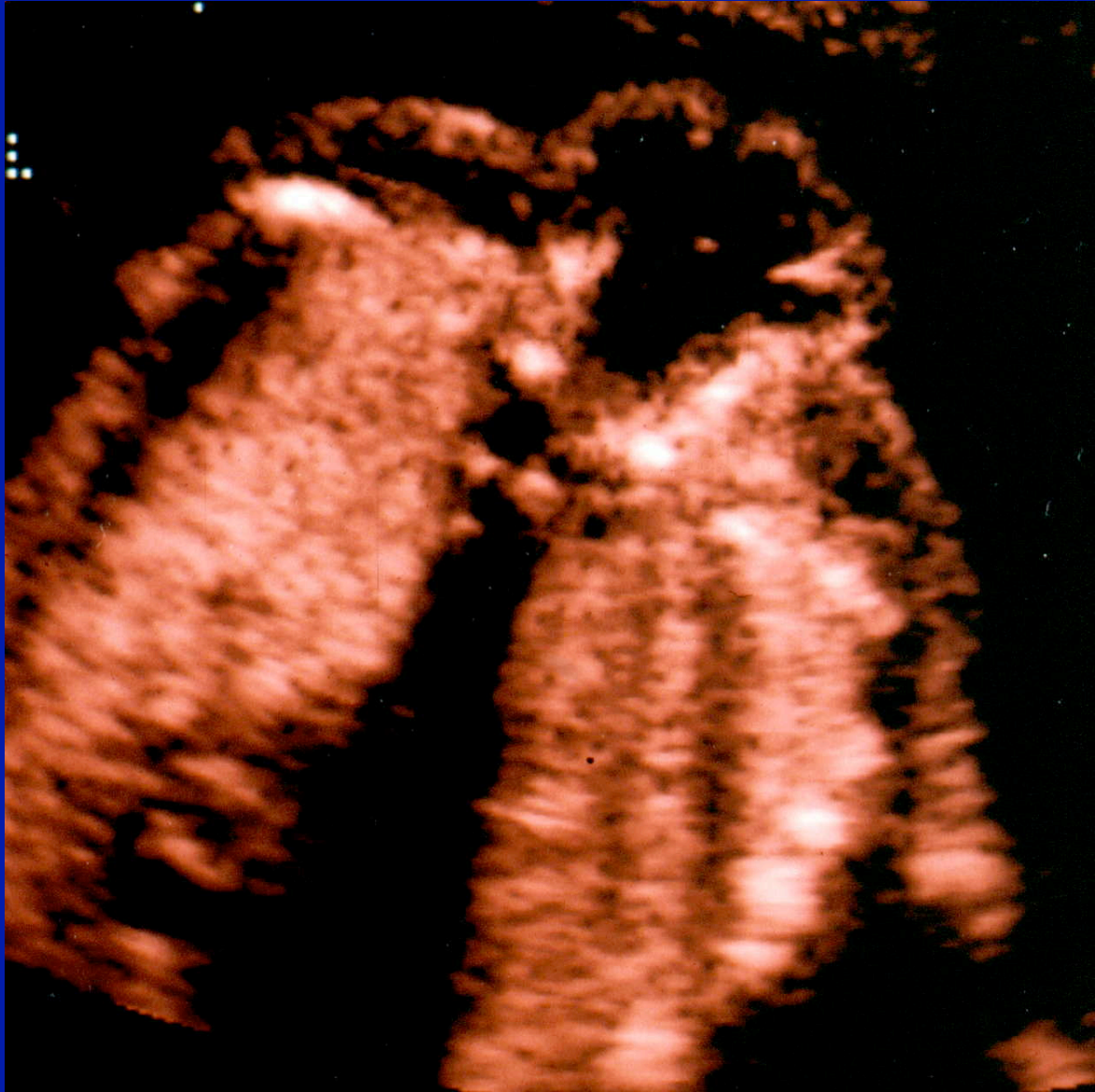
Neural Tube Defects



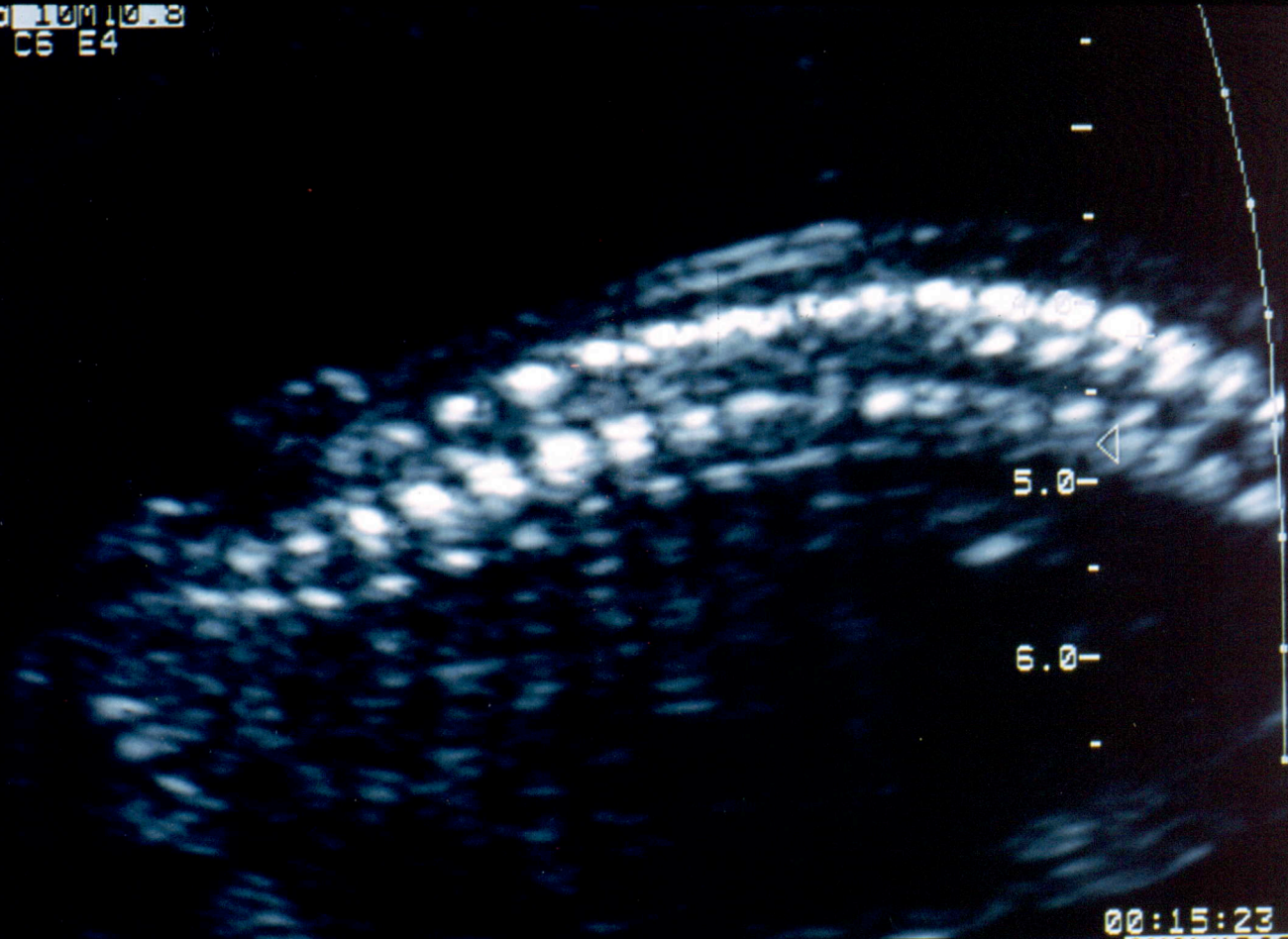






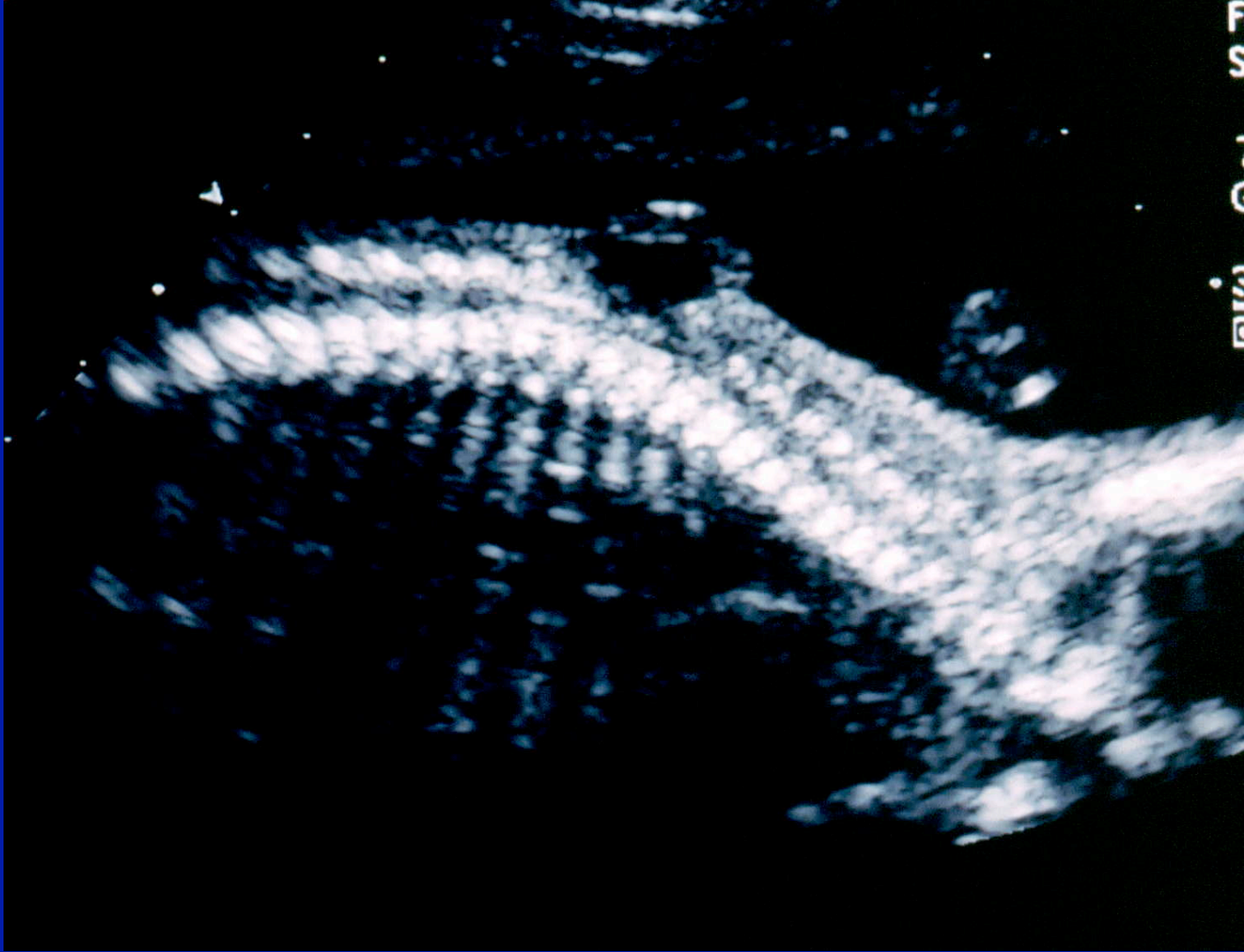


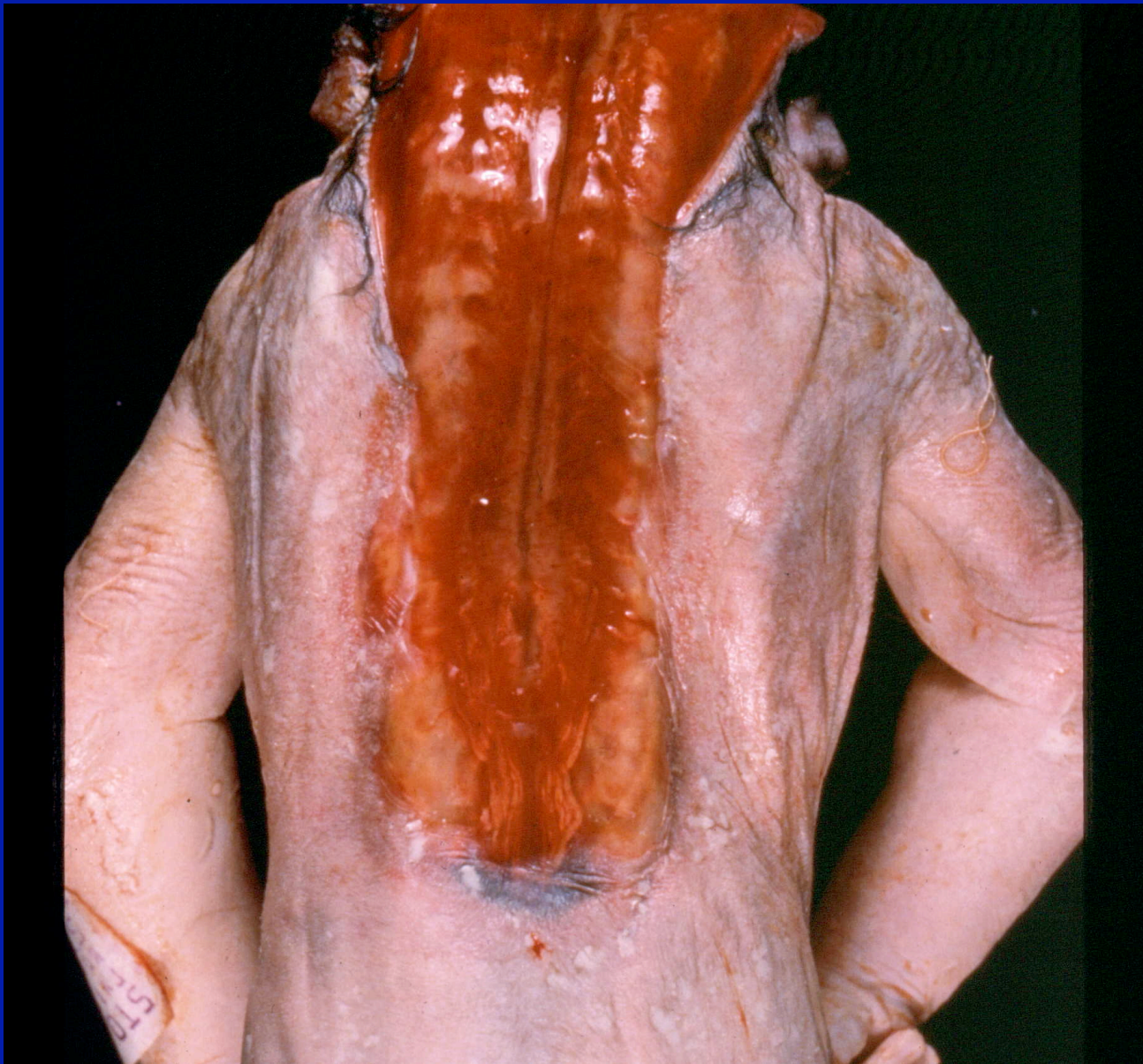
SPTAD 10010.8
MODE C6 E4
HDI

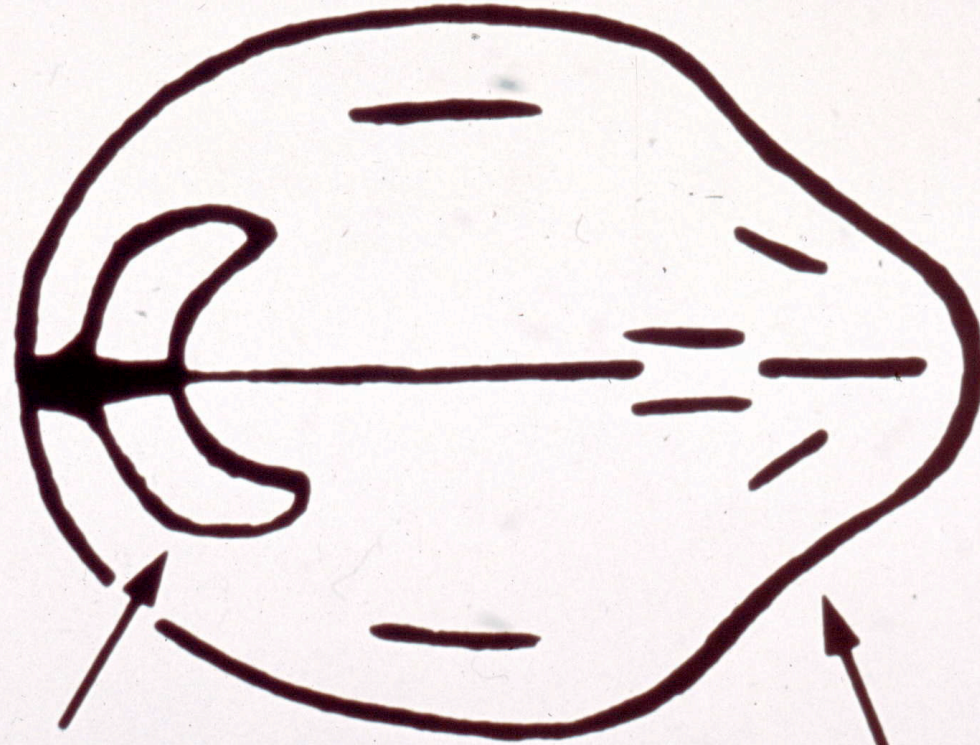


SET to mark endpoint.

00:15:23
ANALYSIS



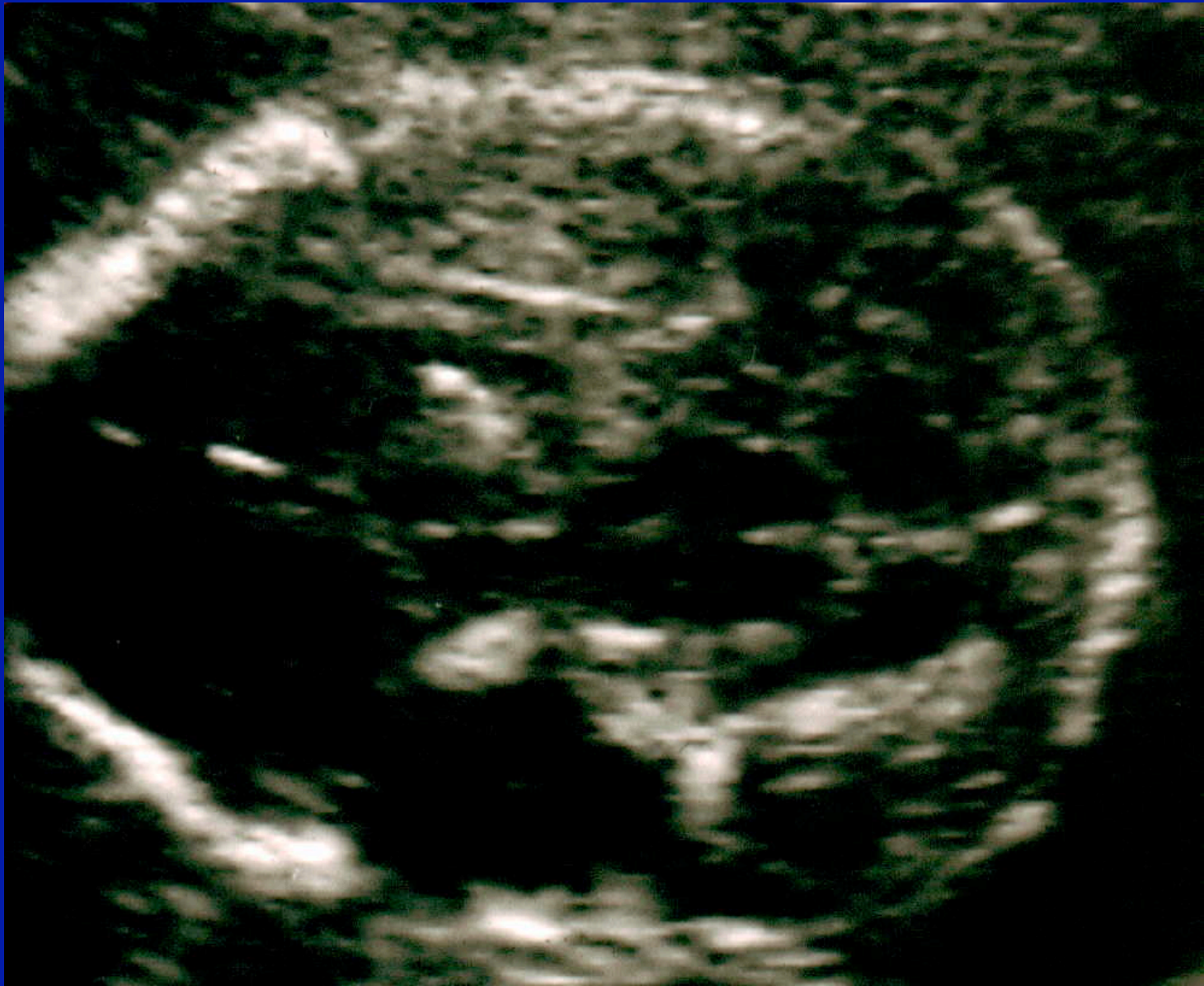




banana
sign

lemon
sign

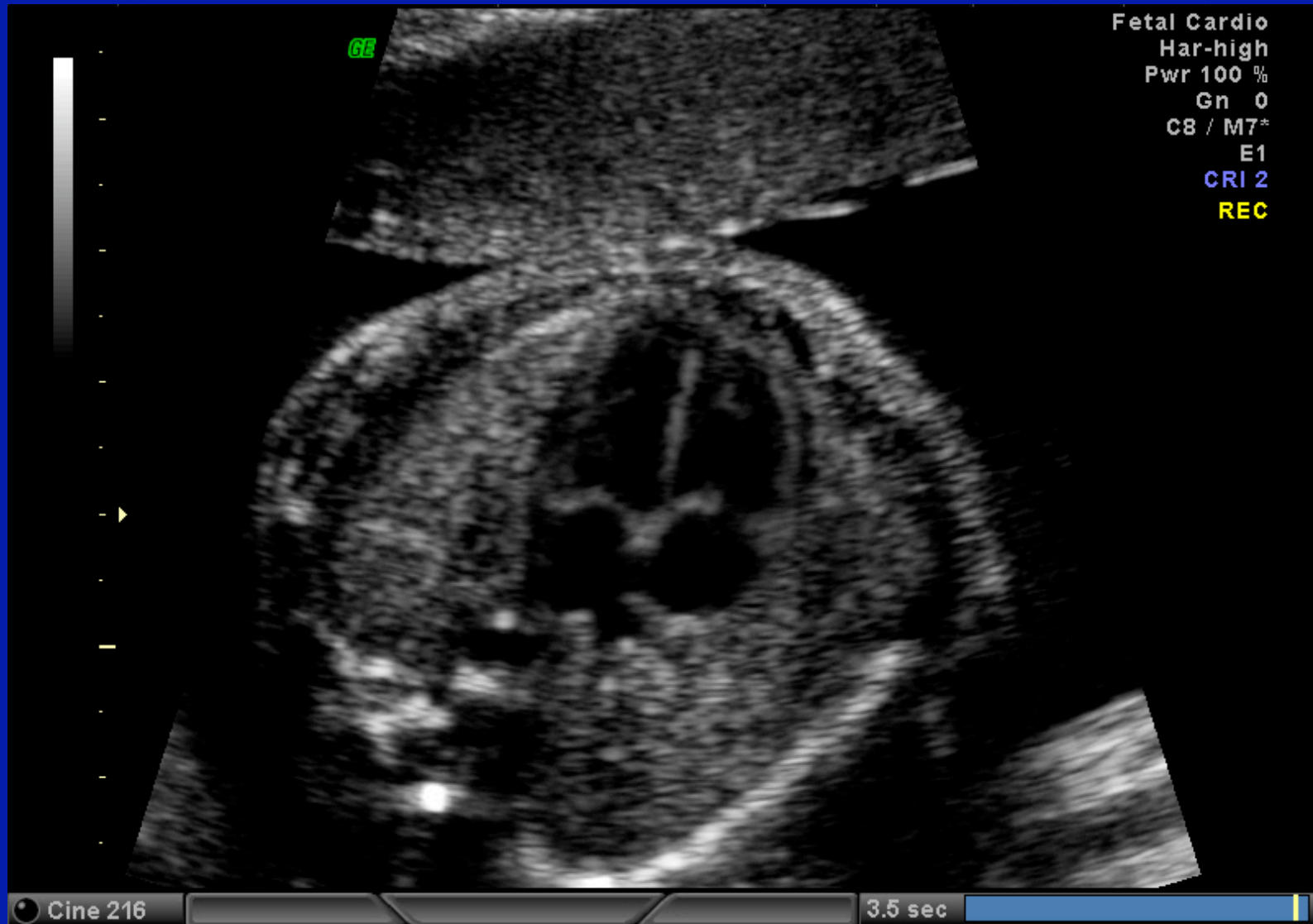


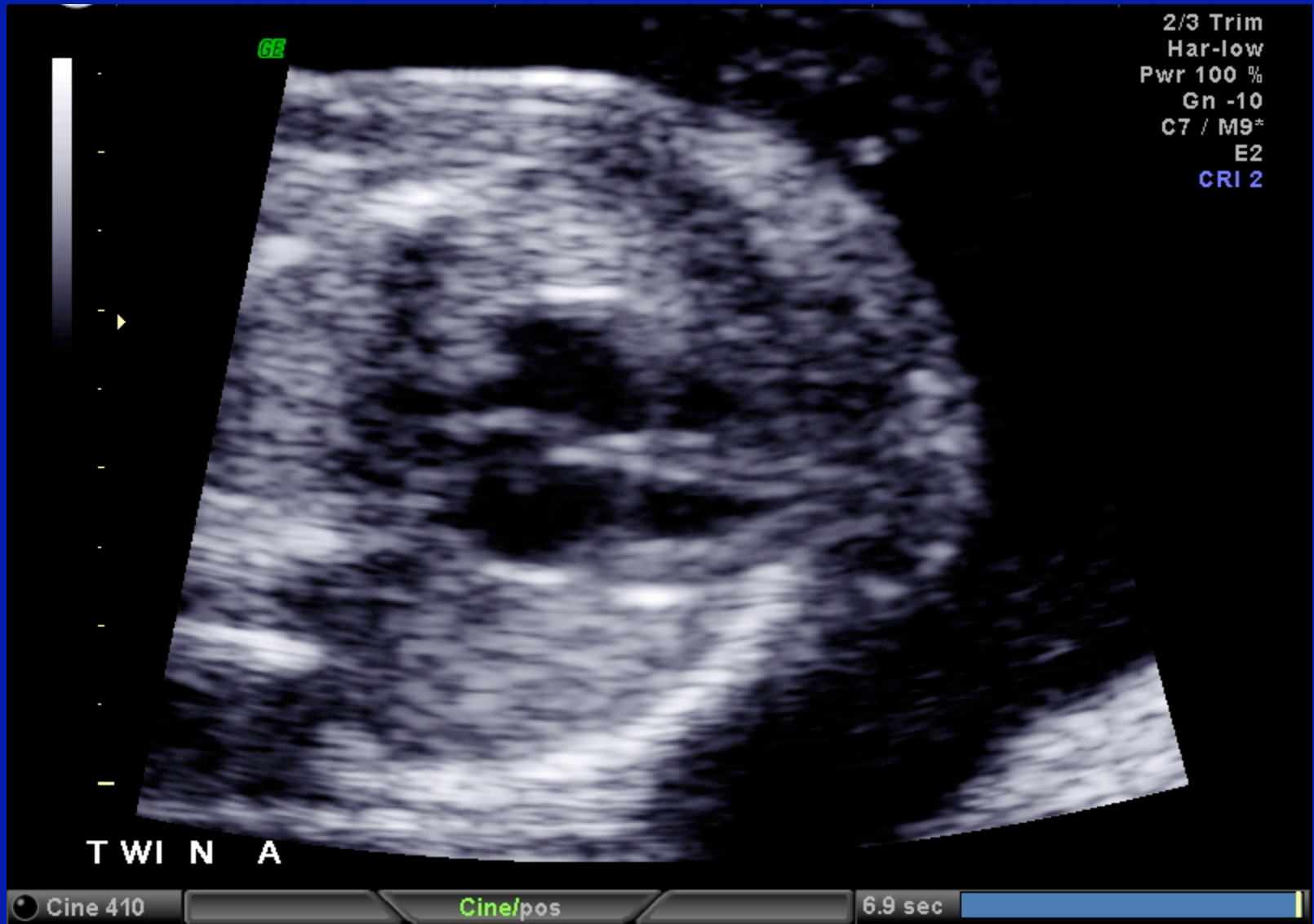


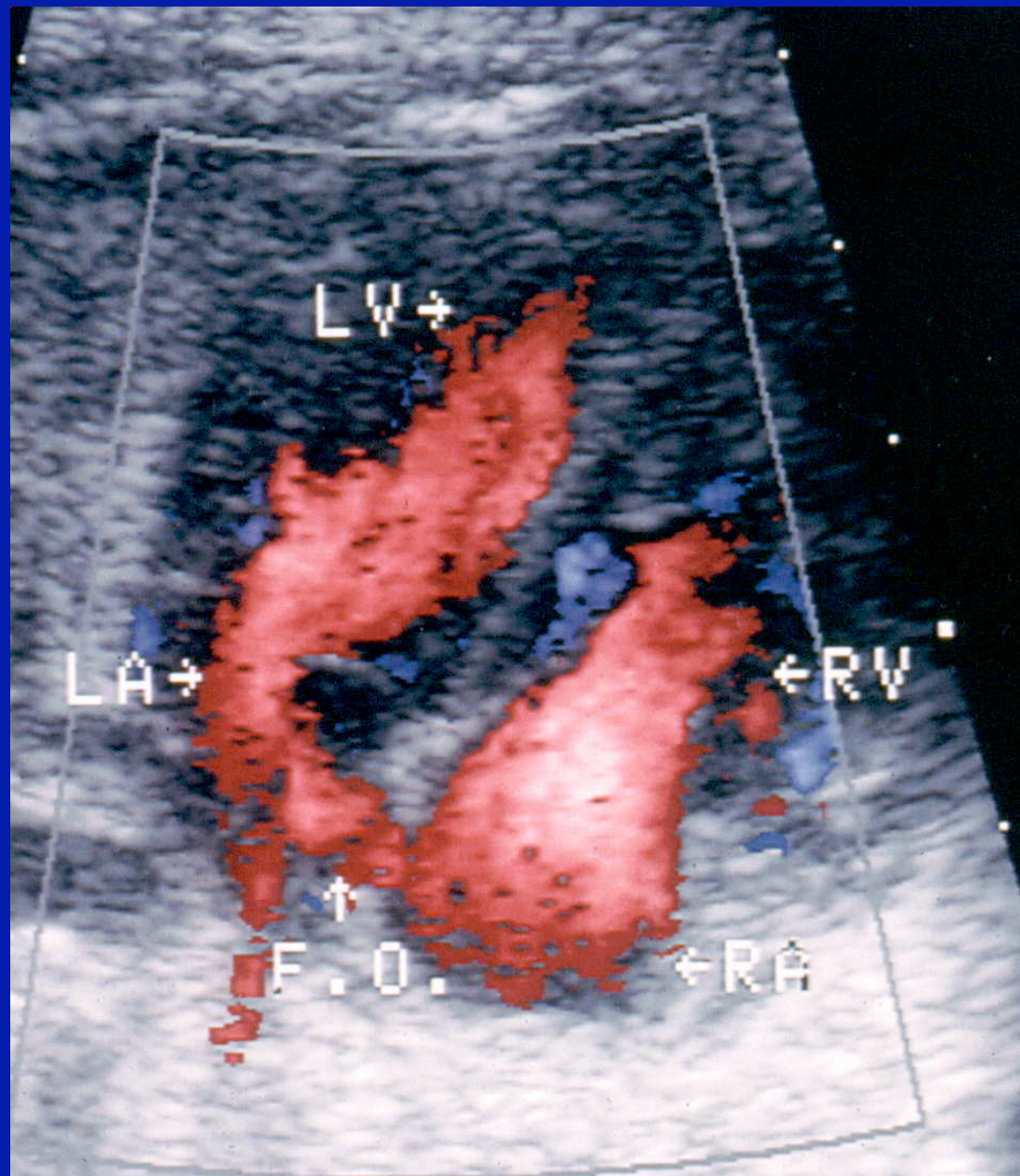
Normal Cardiac Anatomy

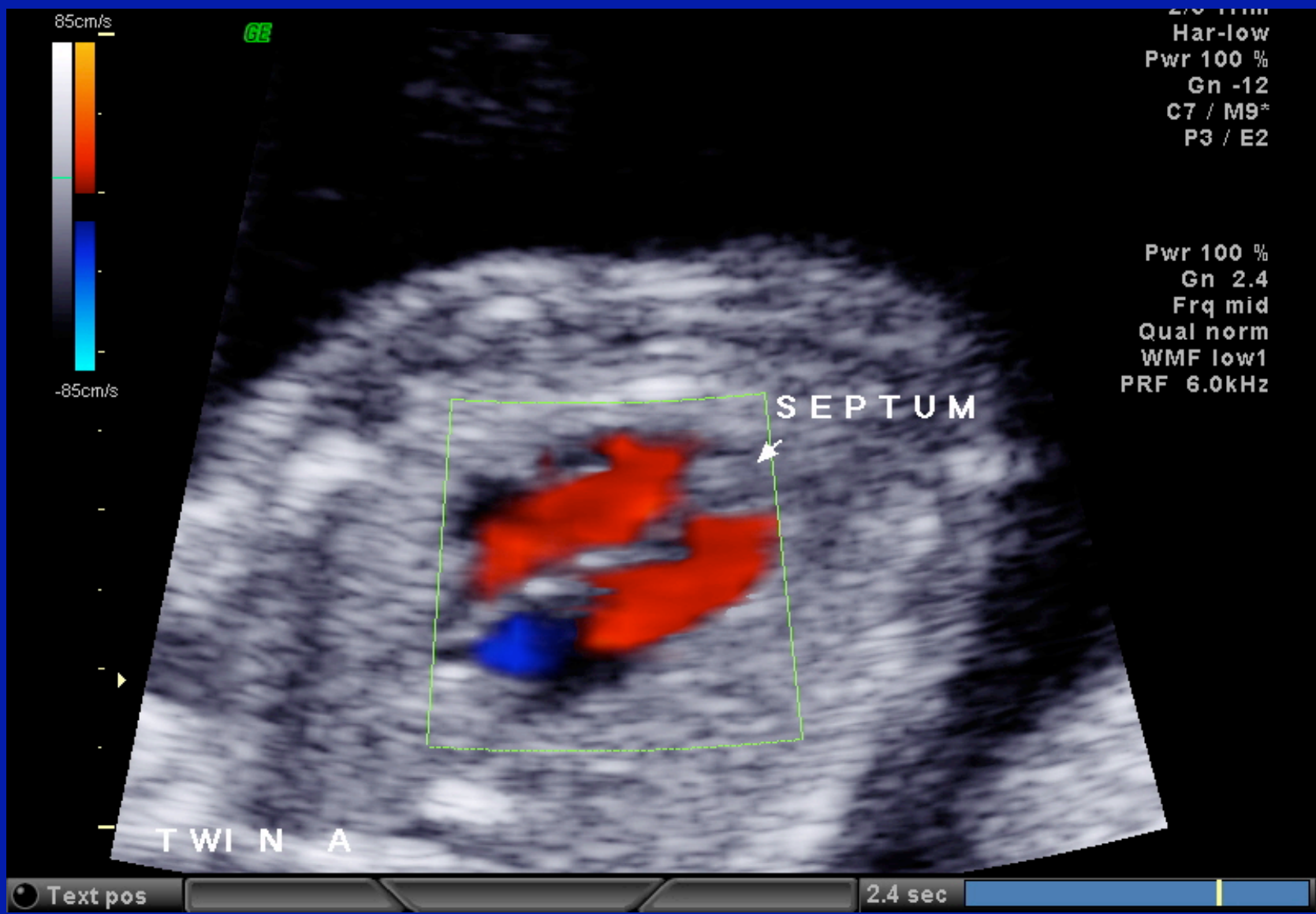




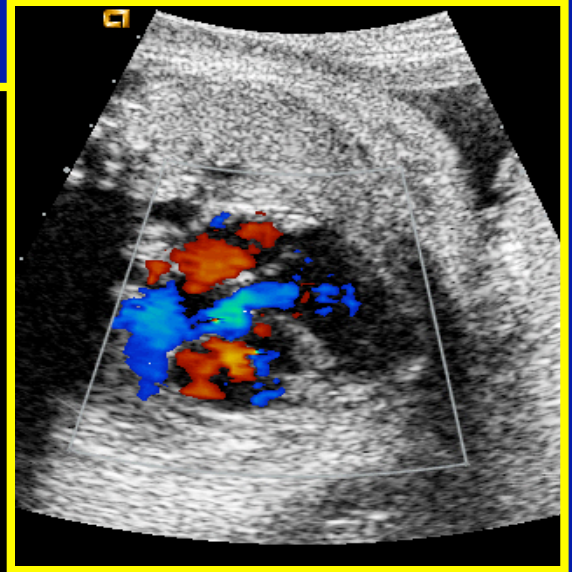
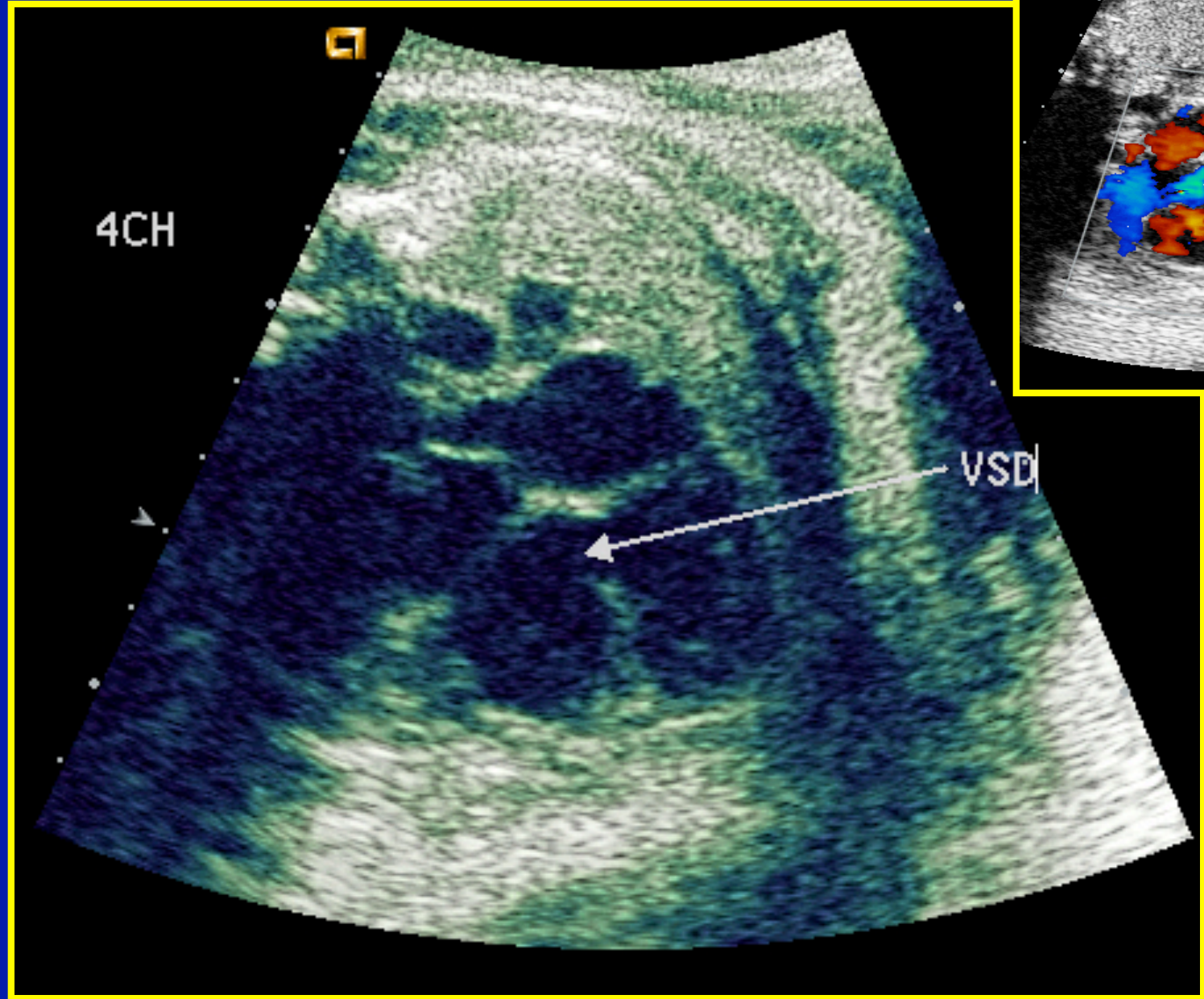


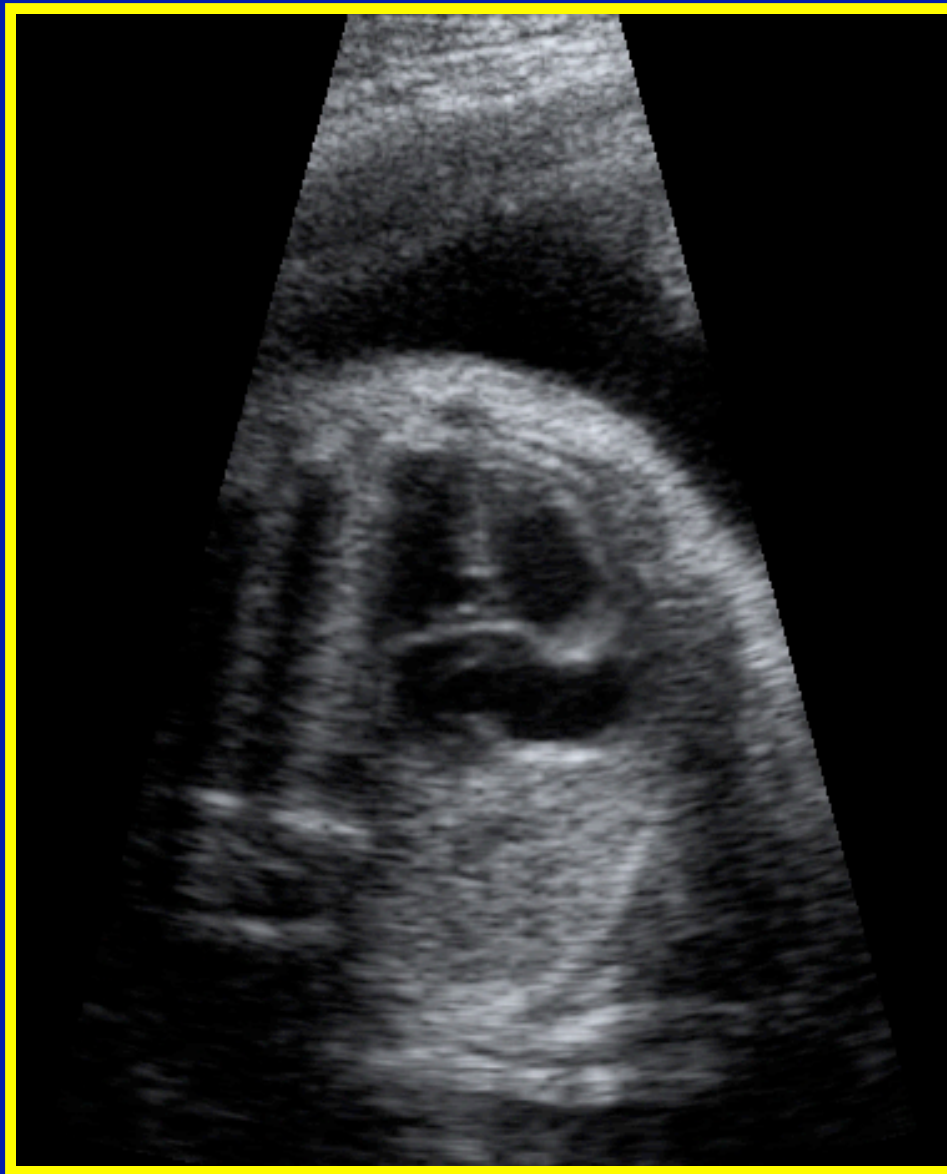




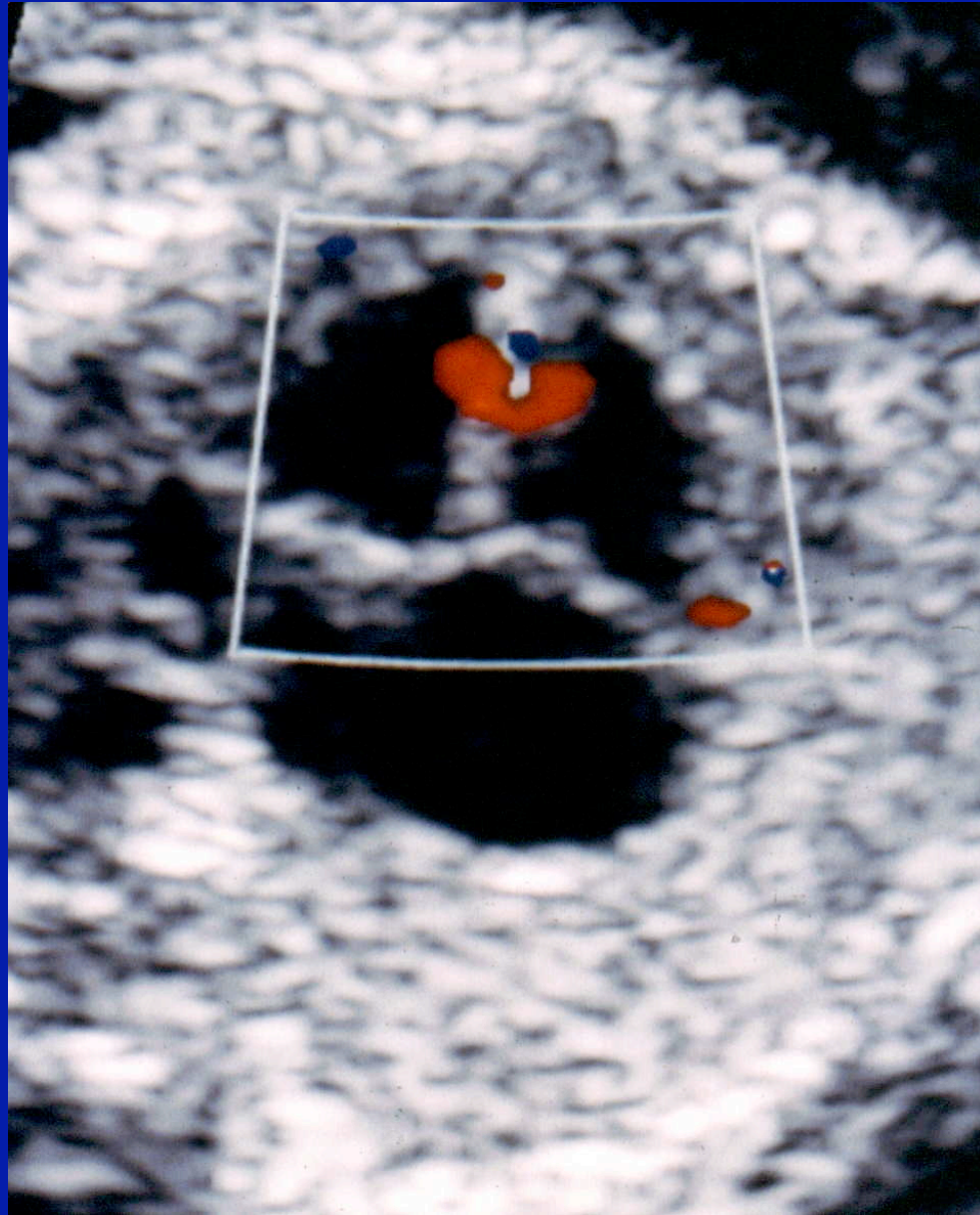


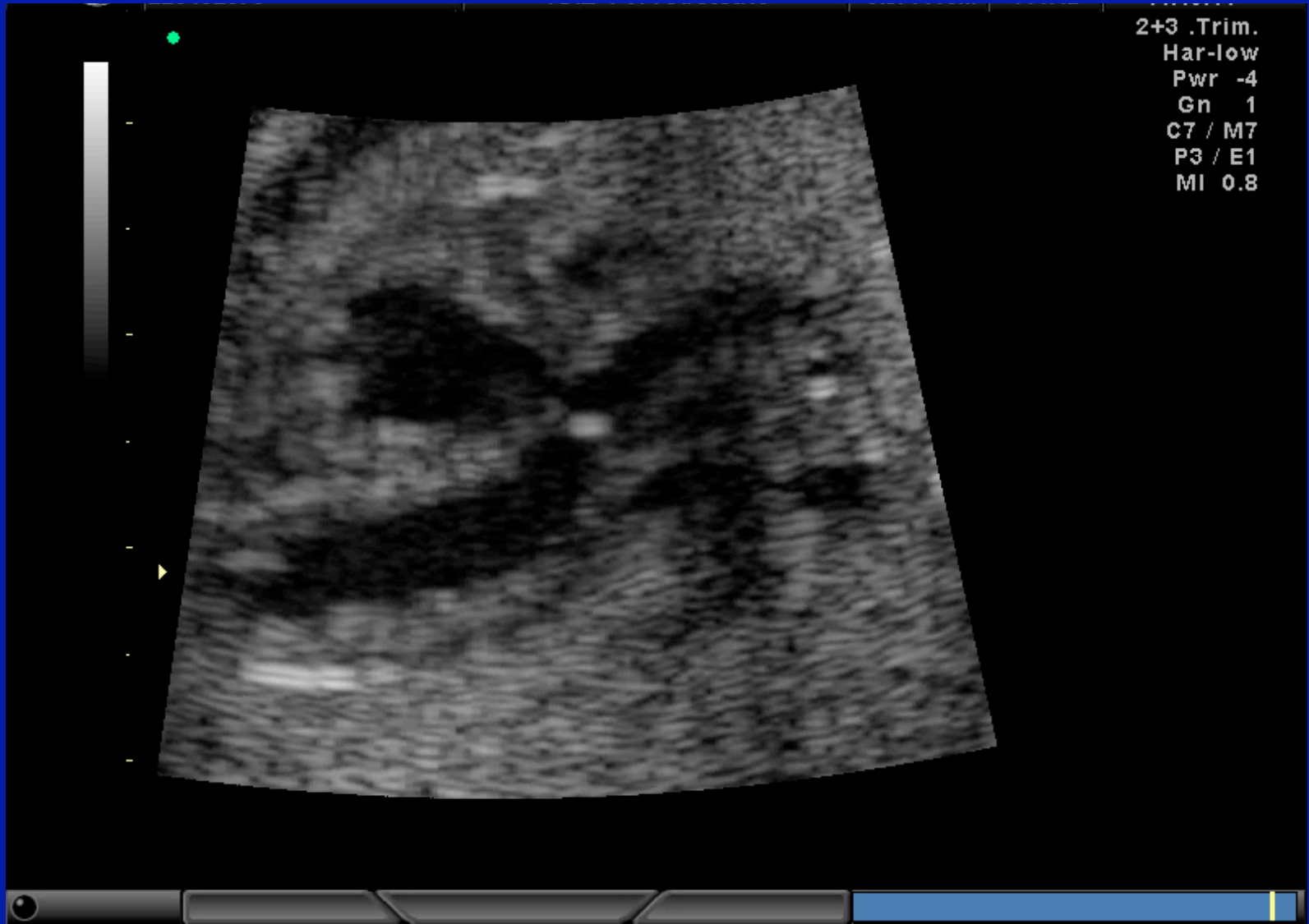
Septal Defects





31 weeks







SHERRILL, IISHA

MFM Norfolk, Virginia

03-26-2003

223132373

RAB 4-8P/Obstetric

3.9/ 7.1cm

114Hz

14:16:30

2+3 .Trim.

Har-low

Pwr -4

Gn 1

C7 / M7

P3 / E1

MI 0.8



71cm/s

GE



-71cm/s

Fet Heart
Har-low
Pwr 100 %
Gn 5
C8 / M9*
P2 / E2

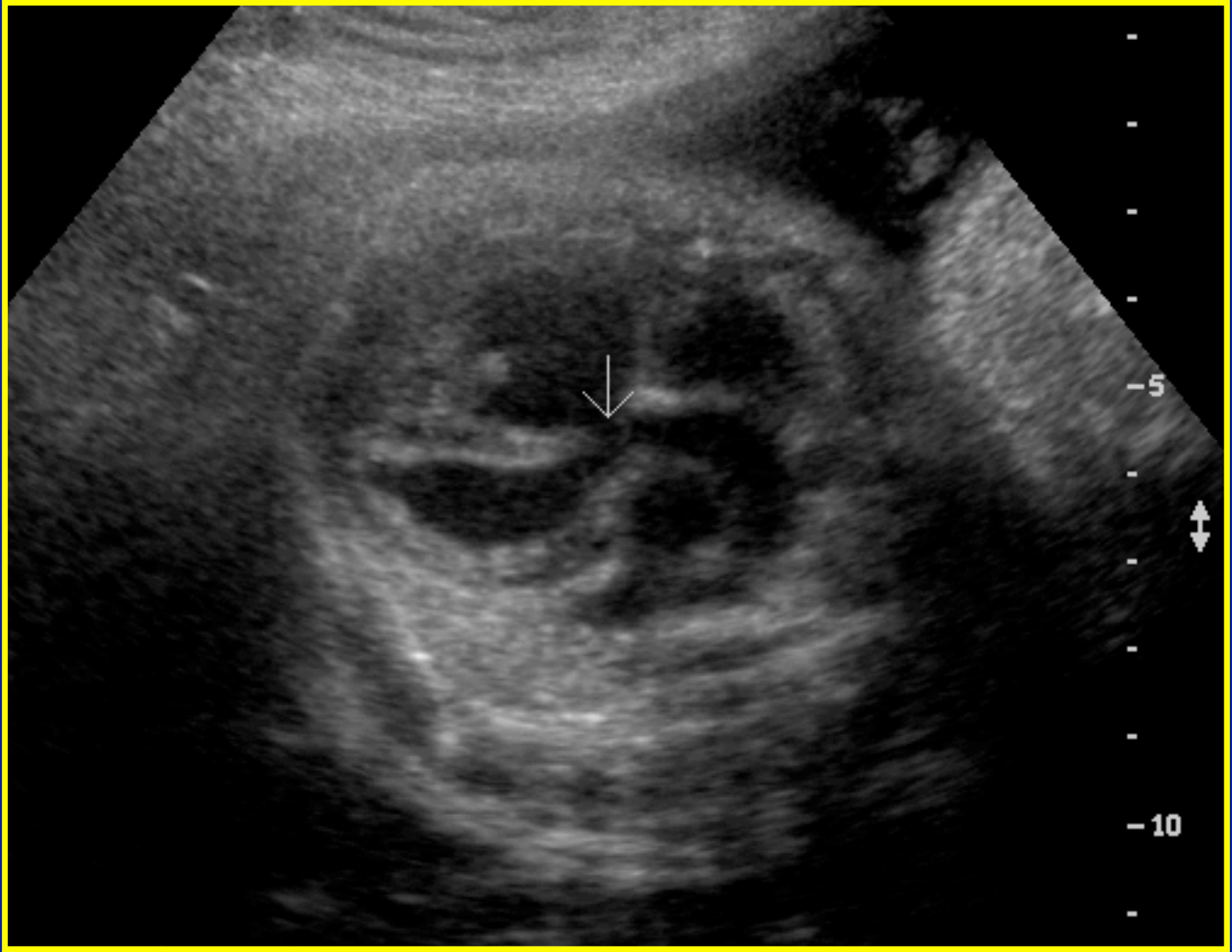
Pwr 100 %
Gn 0.6
Frq mid
Qual norm
WMF mid1
PRF 5.0kHz

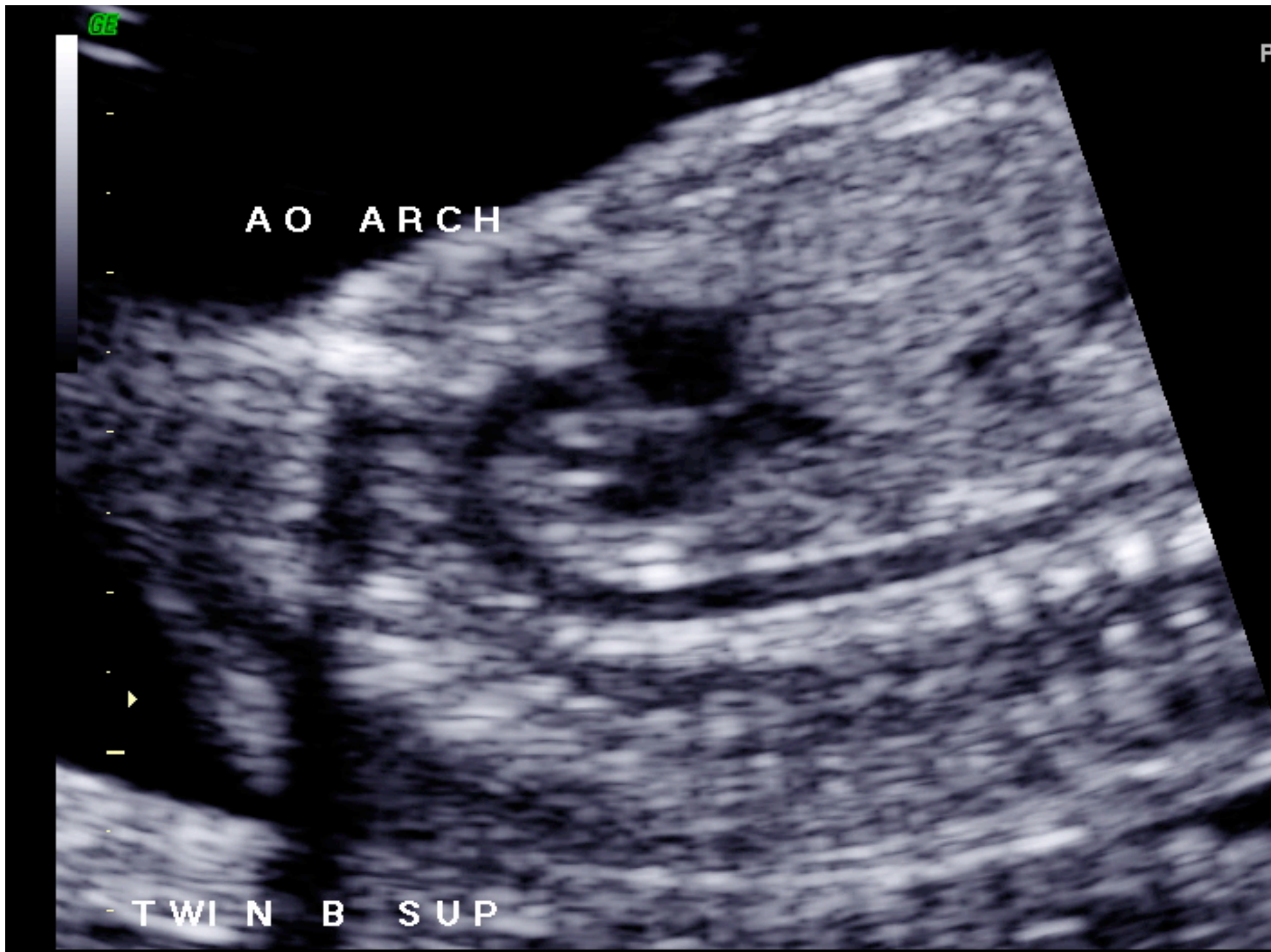
RVOT

LVOT

Text pos

6.5 sec







TAYLOR, JACQUELINE

EVMS/MATERNAL-FETAL

02-06-2004

482766872

RAB 4-8P/Obstetric

2.5/10.2cm

53Hz

11:16:42 AM

2+3 Trim.

Har-high

Pwr -3

Gn 2

C7 / M7*

P3 / E1

MI 0.9



REC





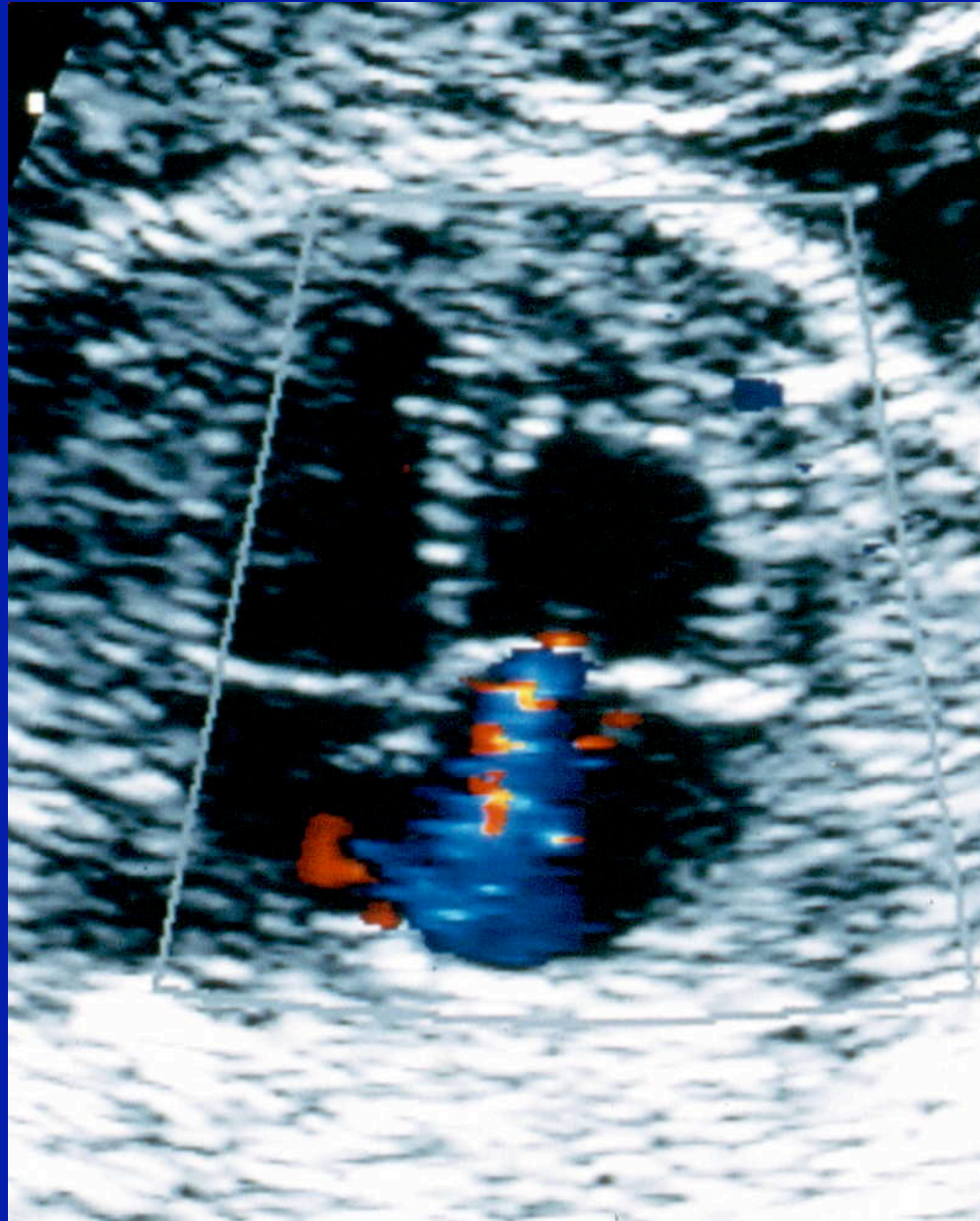
270
Ha
Pwr 1
G
C7

GE

DUCT ARCH

Text pos

25 sec



Tricuspid Insufficiency

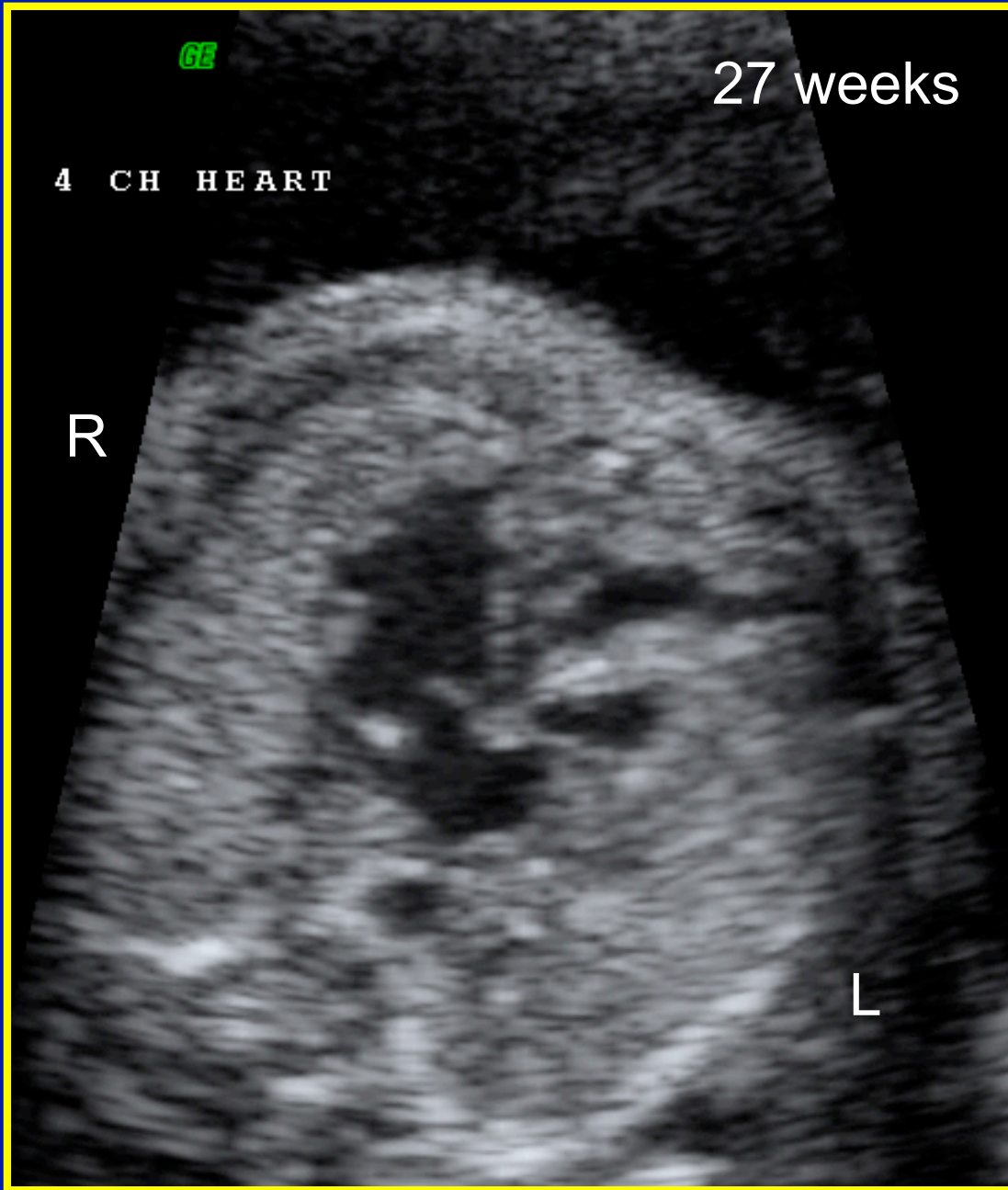
GE

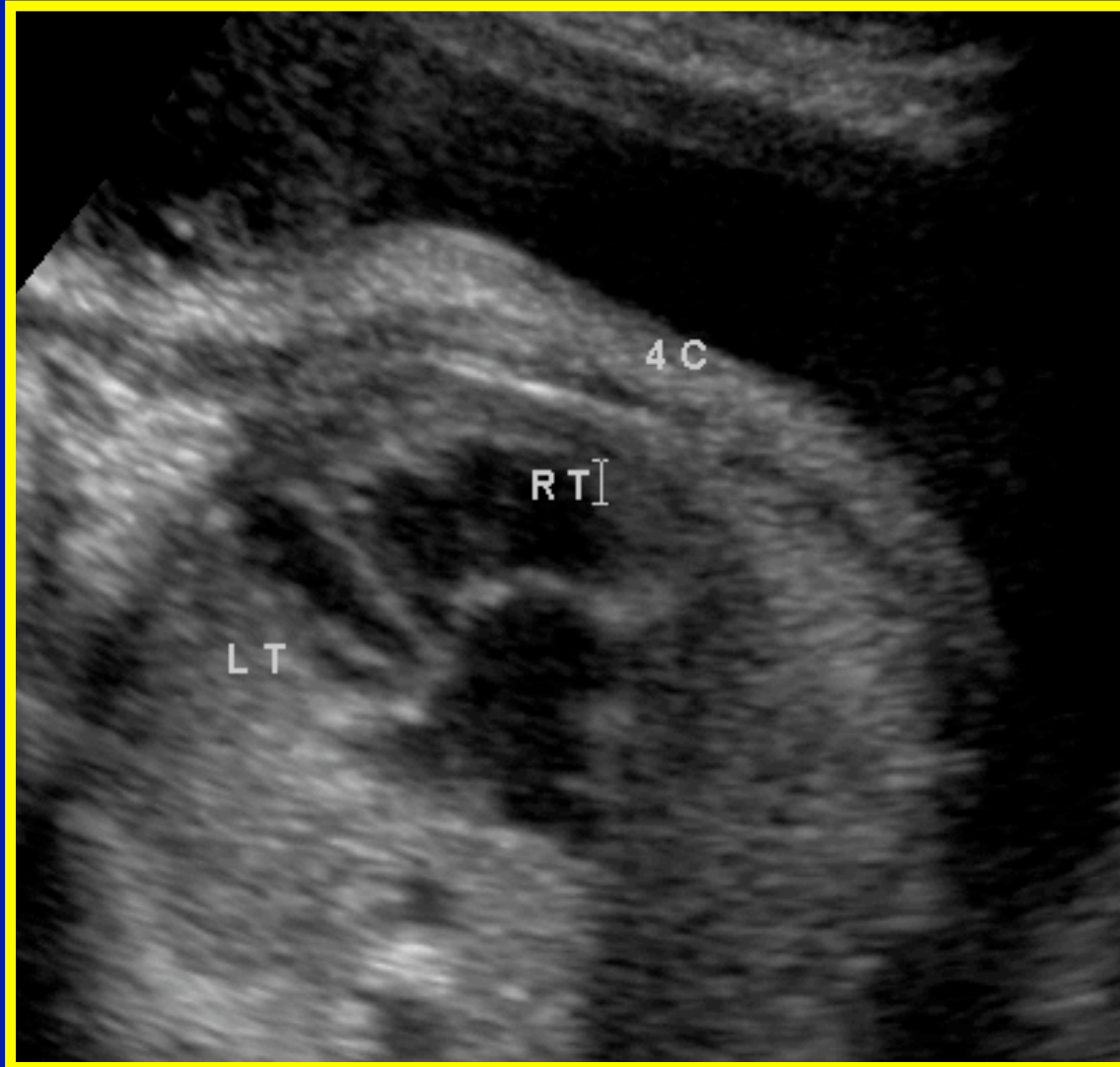
27 weeks

4 CH HEART

R

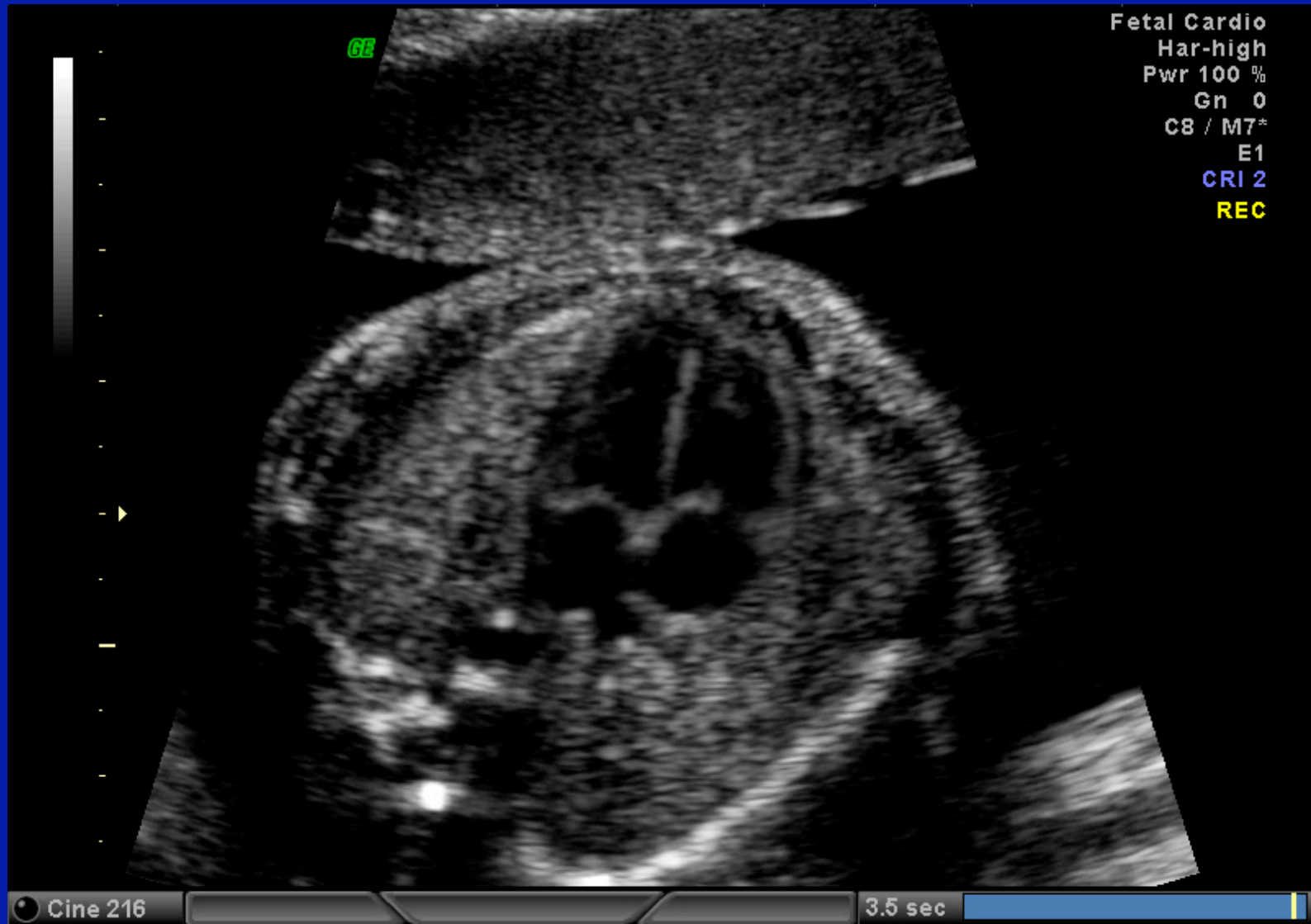
L



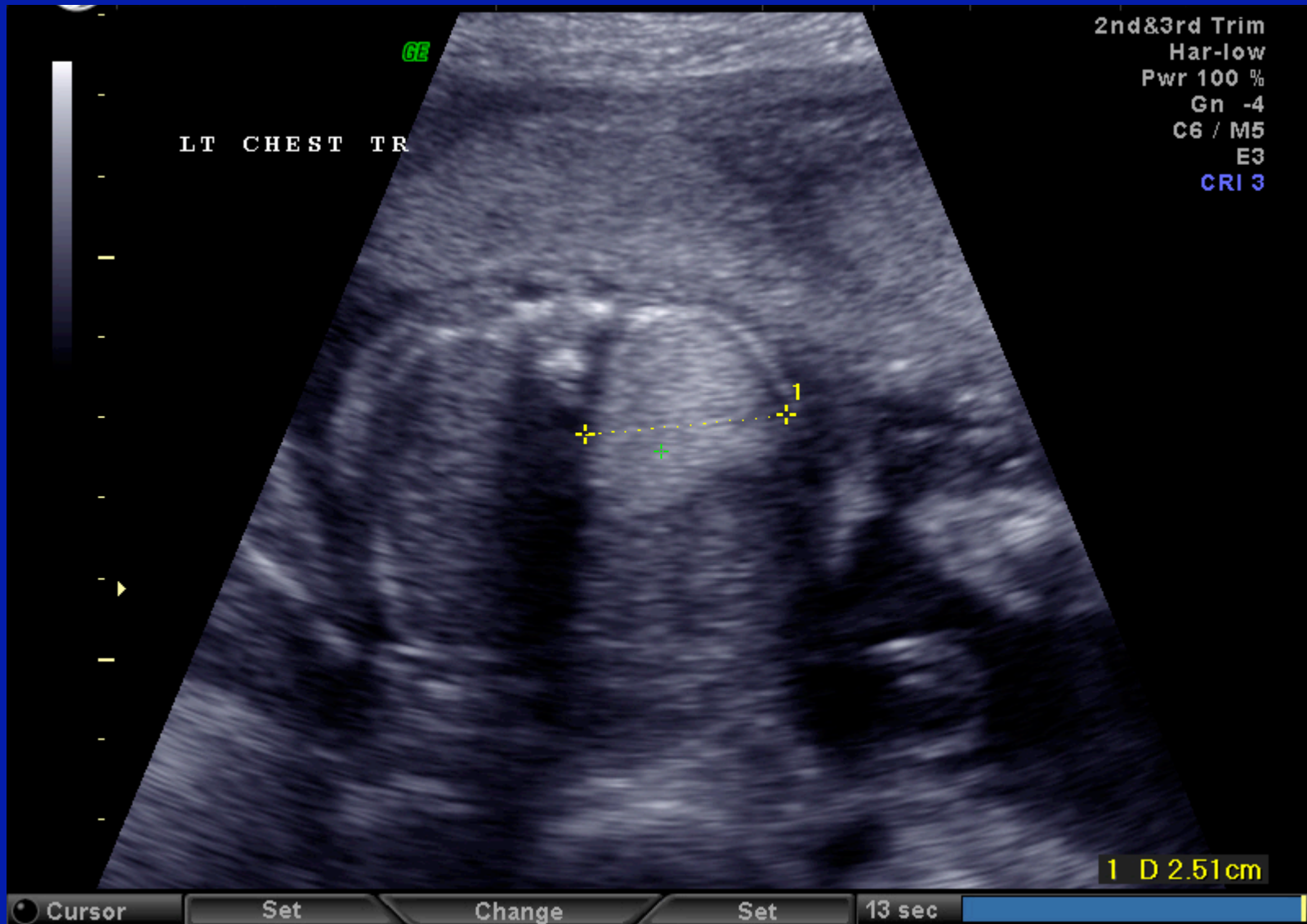


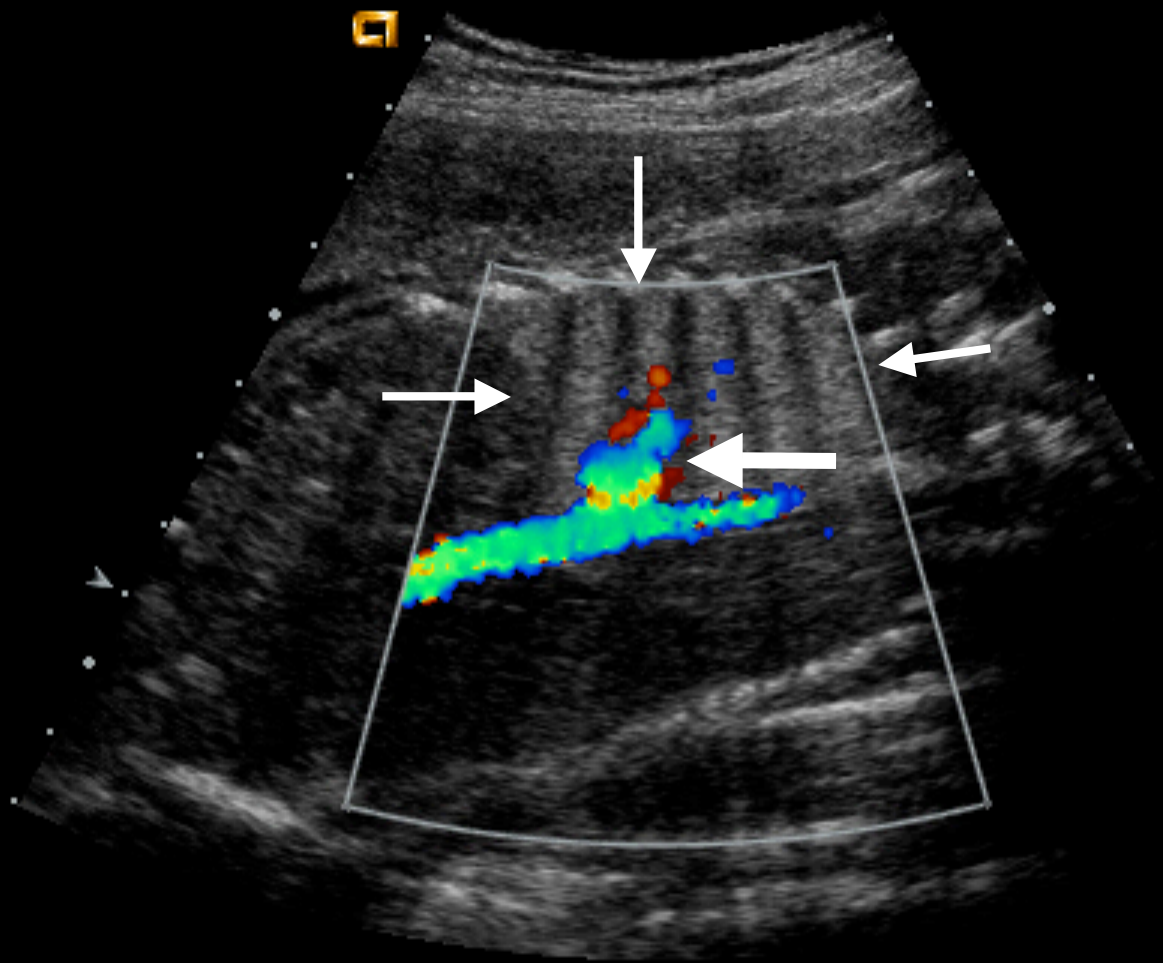
30 weeks

The Lungs



Bronchopulmonary Sequestration

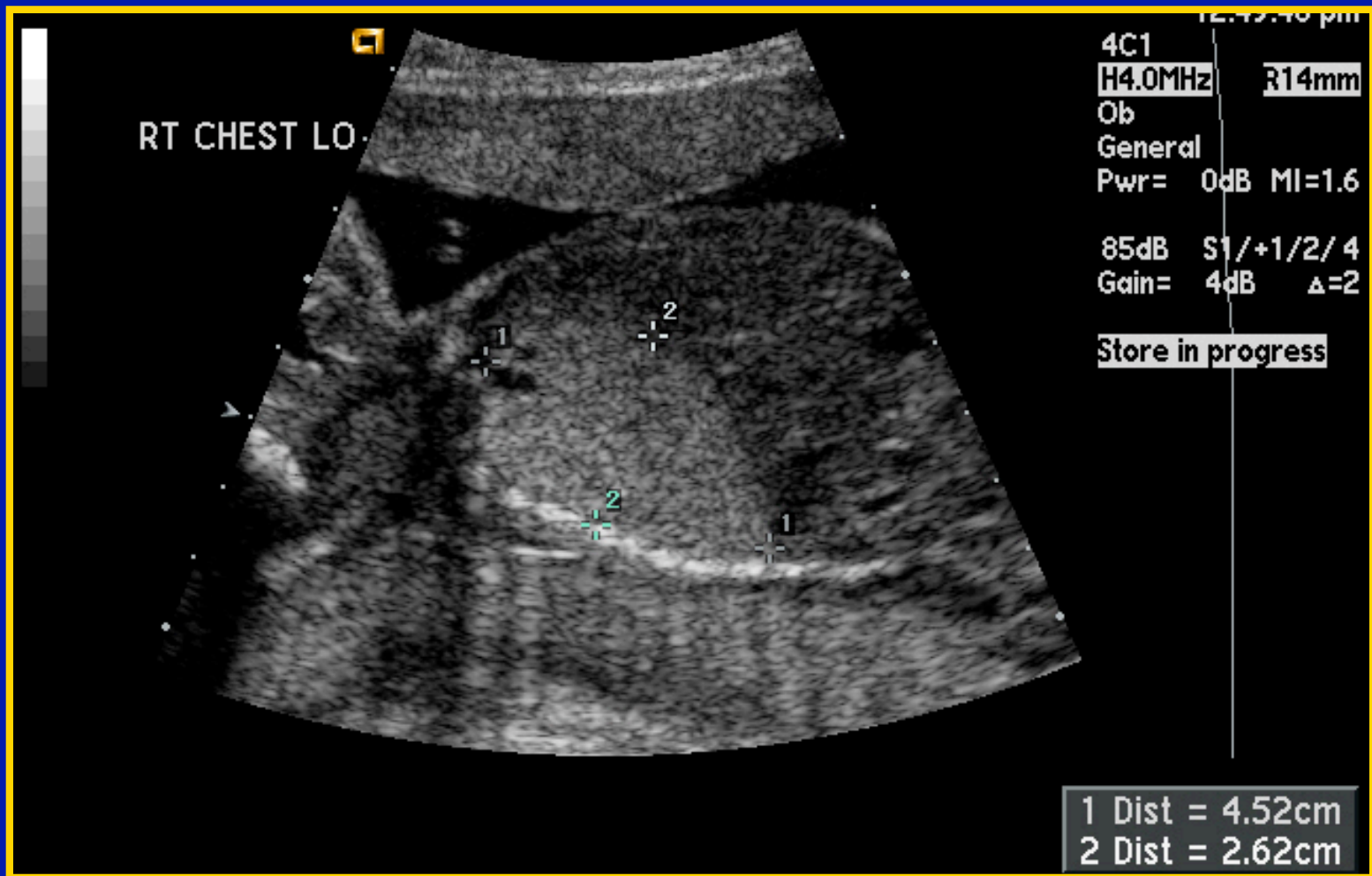




6C2
6.0MHz R6mm
Ob
General
Pwr= 0dB
Mlcd=1.4 TIS=1.6
S1/ 0/ 2/V:2
3/1 CD:2.5MHz
CD Gain = 24

Store in progress

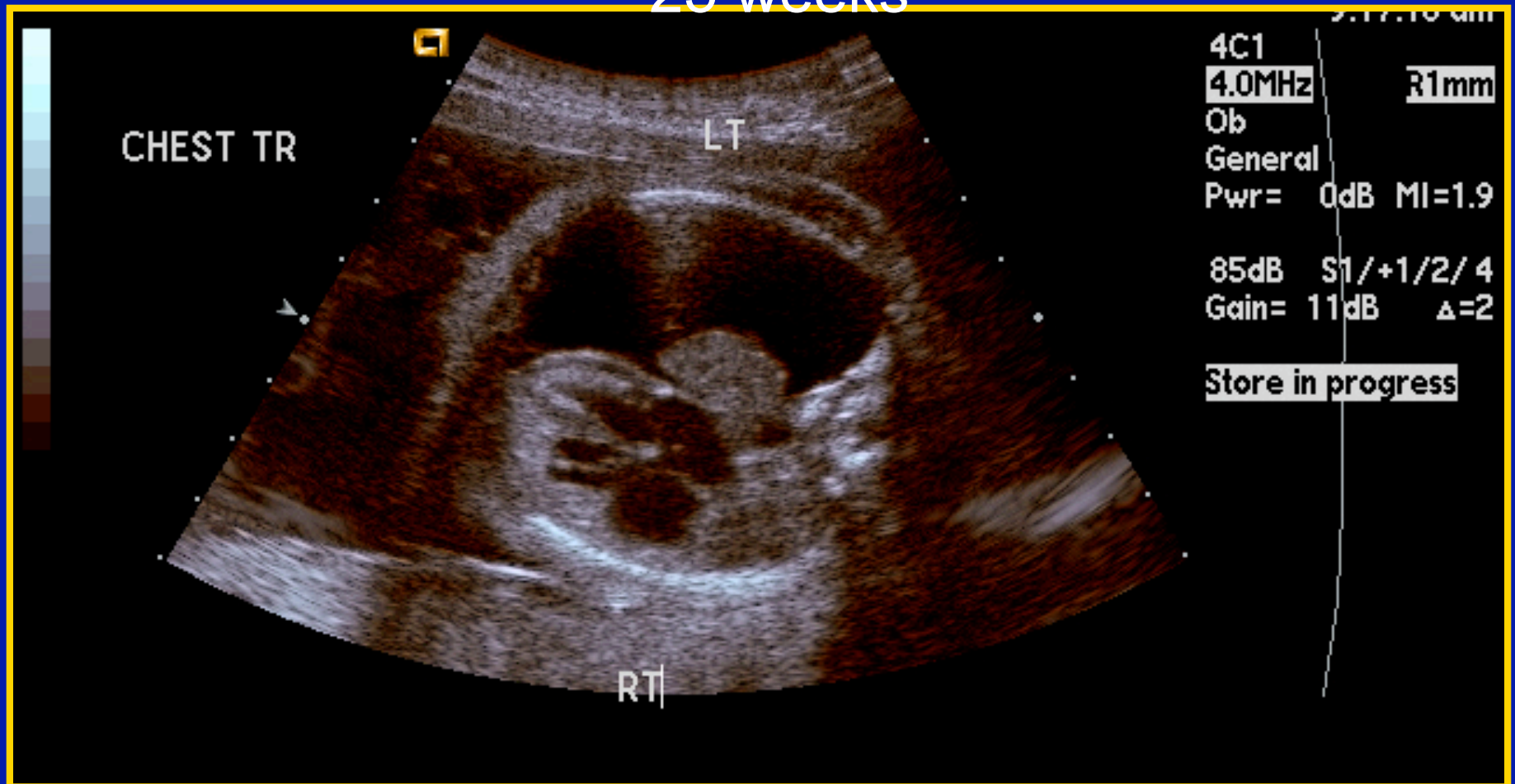
CCAM



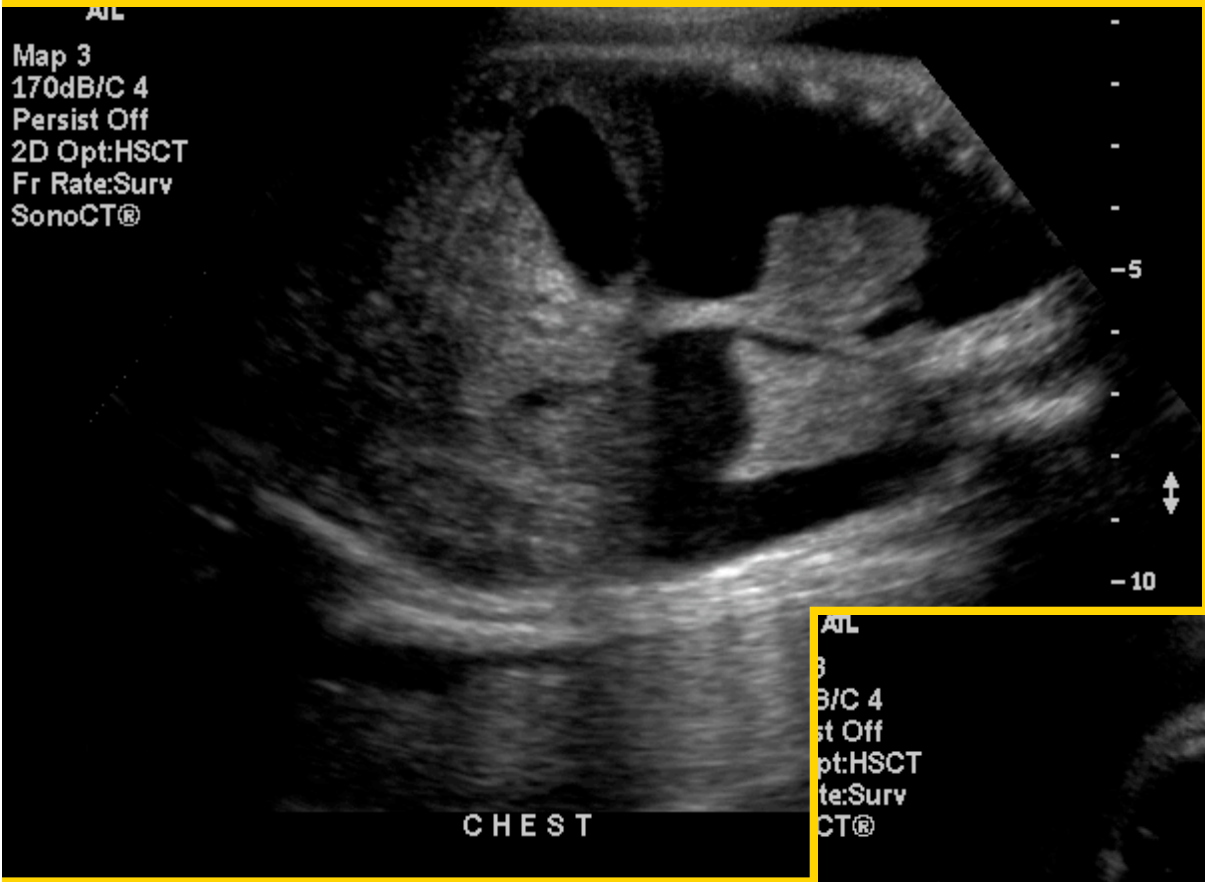


Fetal Hydrothorax

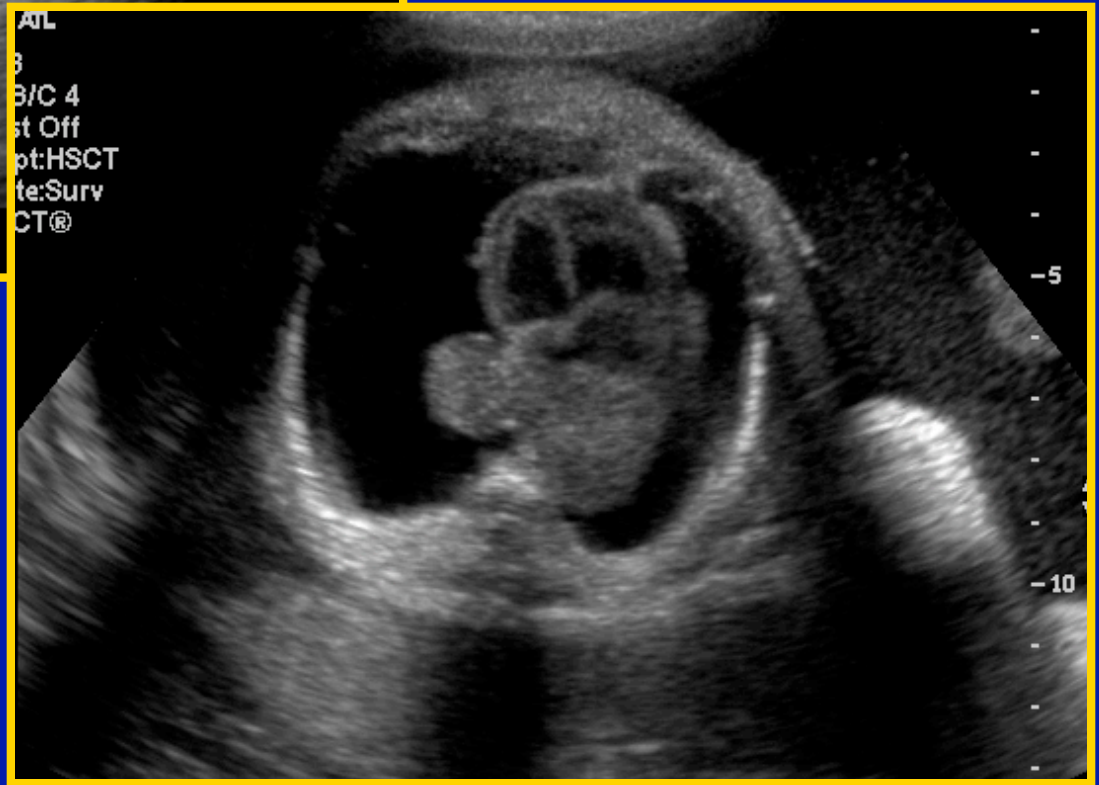
25 weeks



Congenital Chylothorax

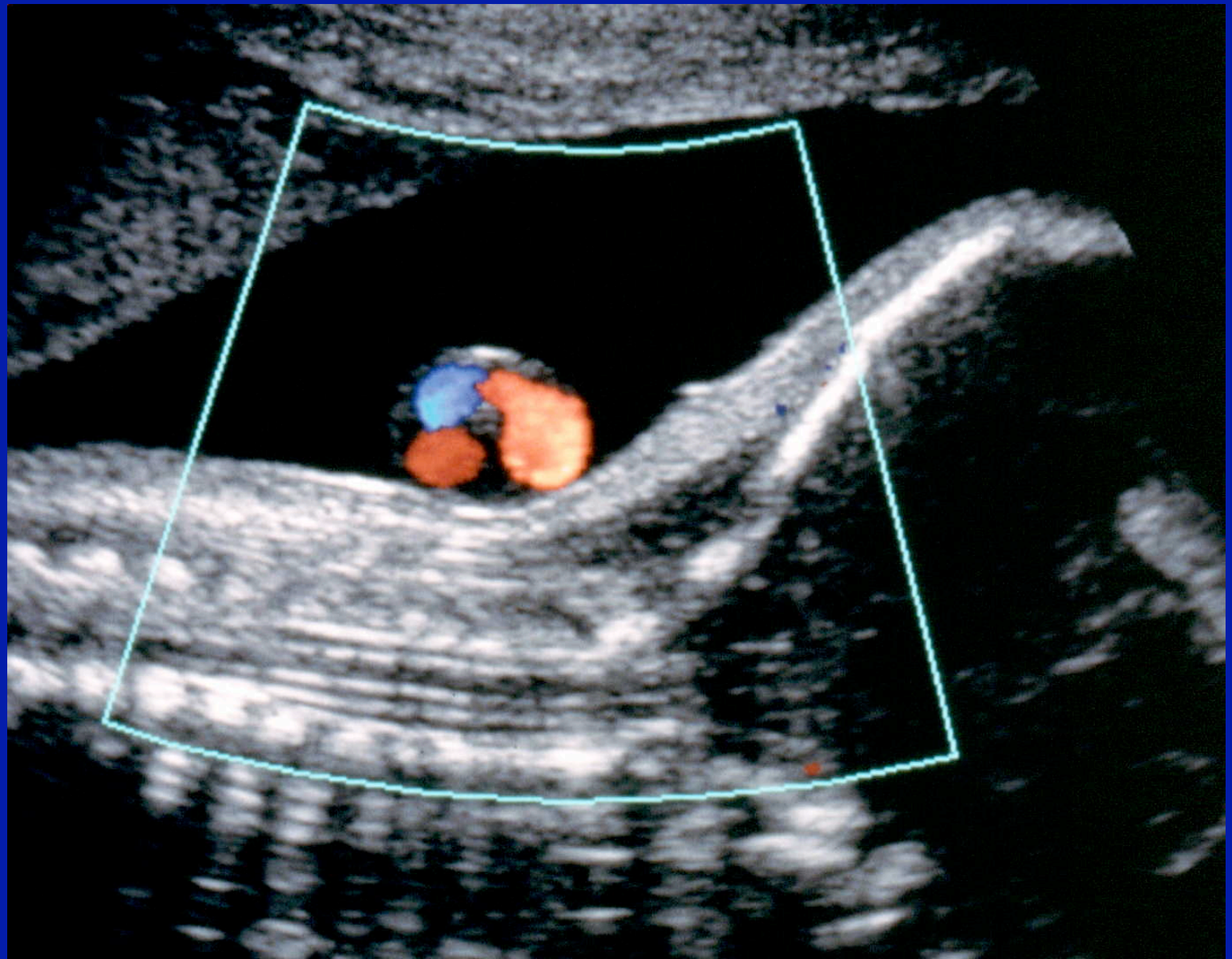


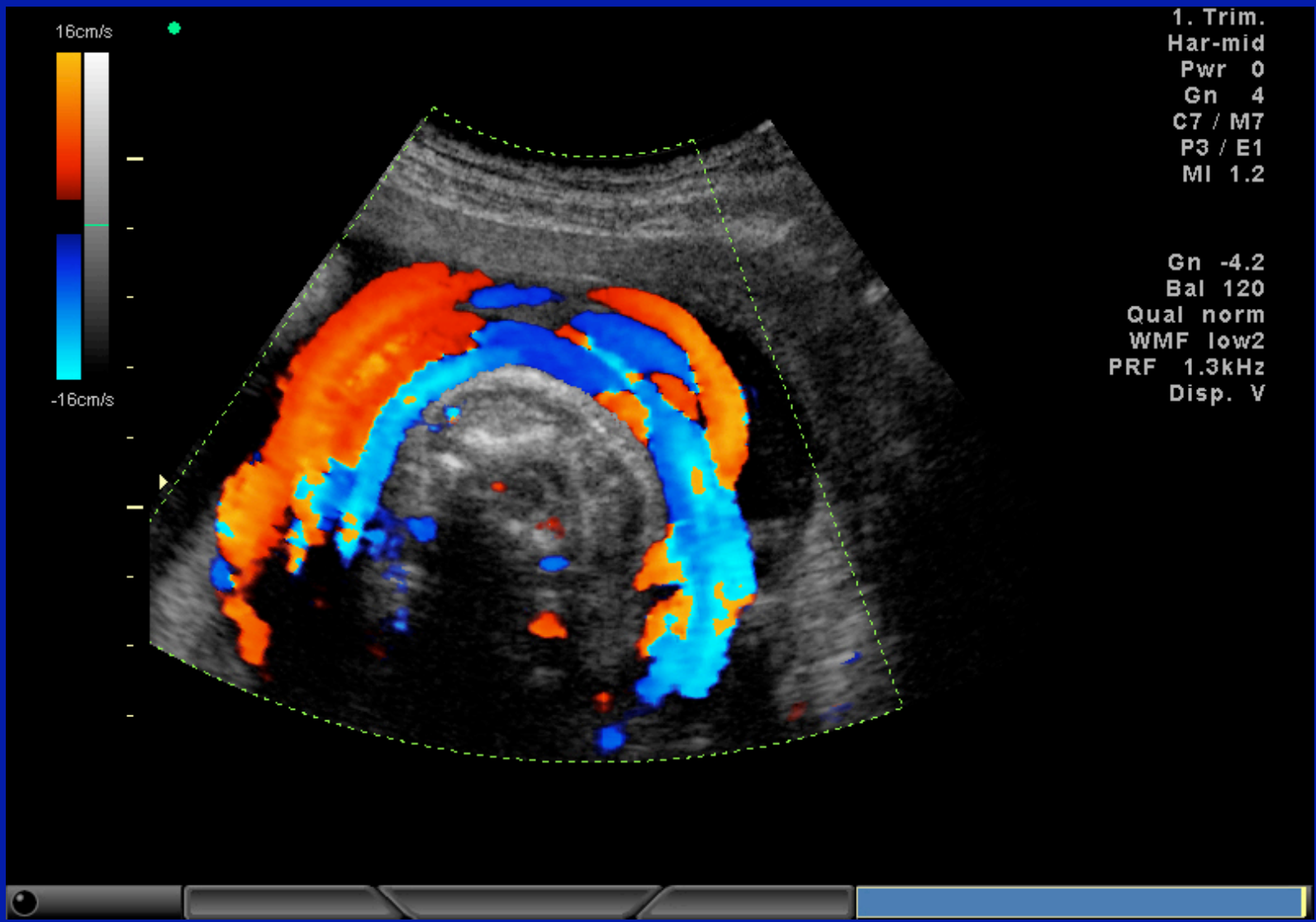
30 weeks



Cord Problems

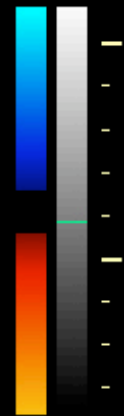




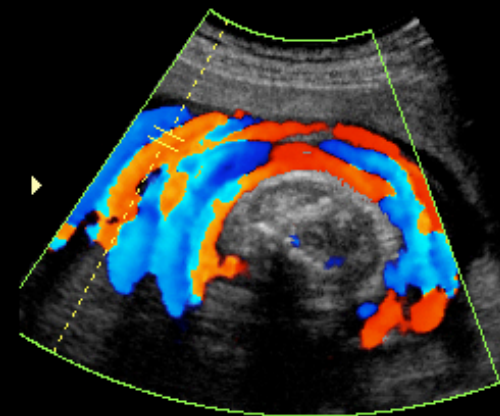


Gn -2
WMF 100 Hz
SV Angle 0
size 2.5mm
Frq low
PRF 3.3kHz

16cm/s



-16cm/s

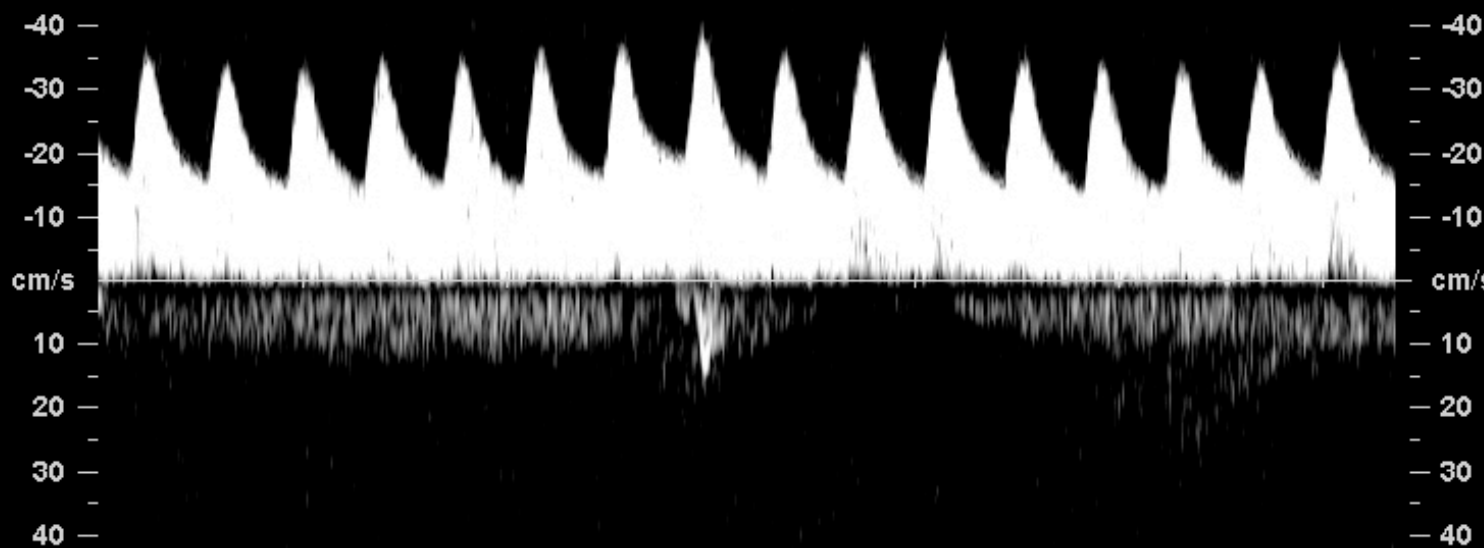


1. Trim.
Har-mid
Pwr -8
Gn 4
C7 / M7
P3 / E1
MI 0.4
TIS 0.4

Gn -4.2
Bal 120
Qual norm
WMF low2
PRF 1.3kHz
REC

-40
-30
-20
-10
cm/s
10
20
30
40

-40
-30
-20
-10
cm/s
10
20
30
40

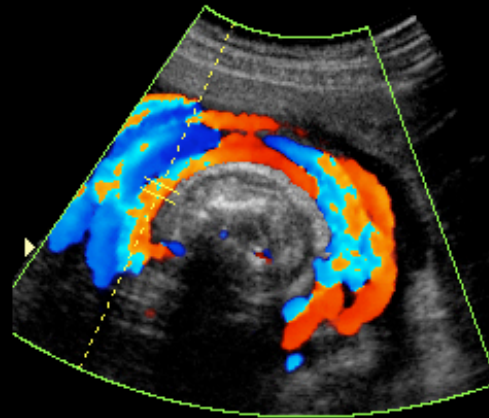


Gn -2
WMF 100 Hz
SV Angle 0
size 2.5mm
Frq low
PRF 5.5kHz

16cm/s

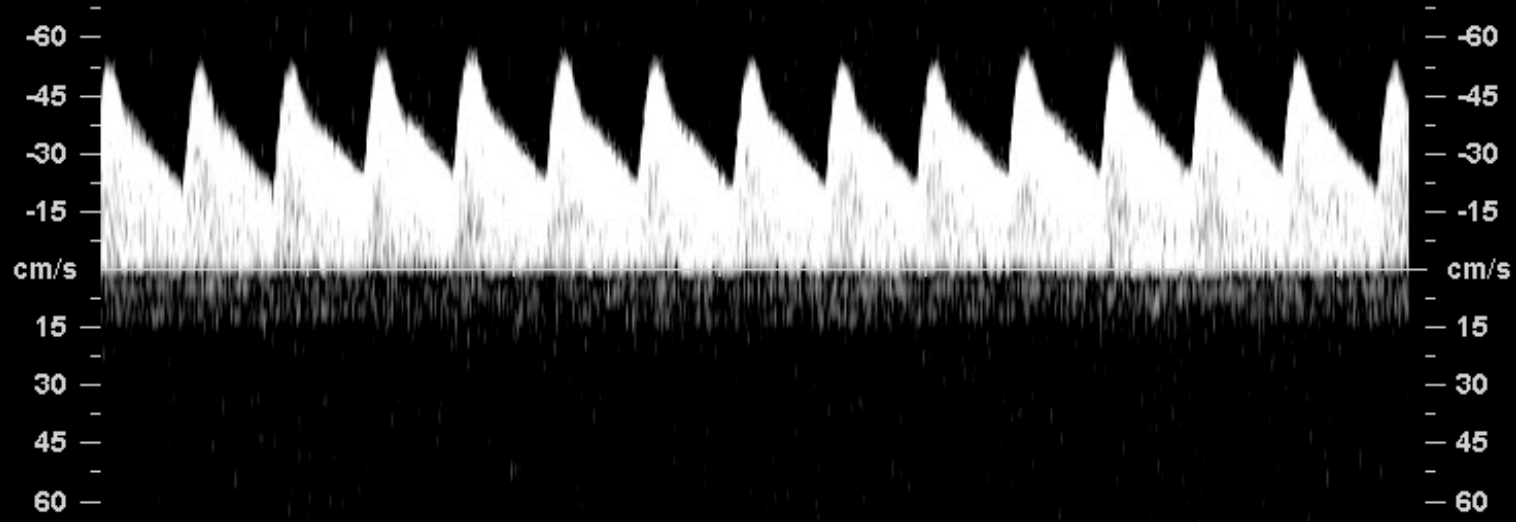


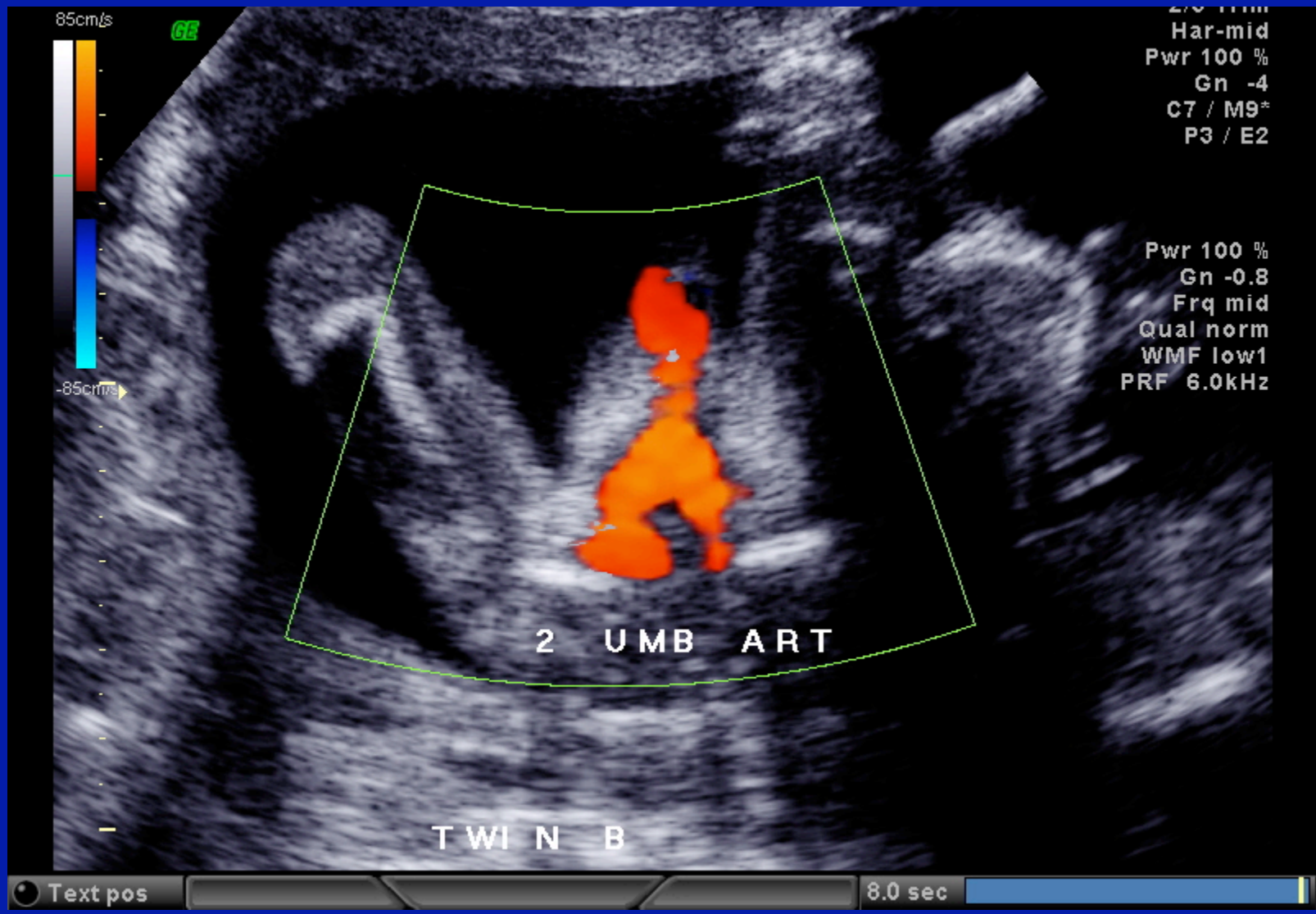
-16cm/s

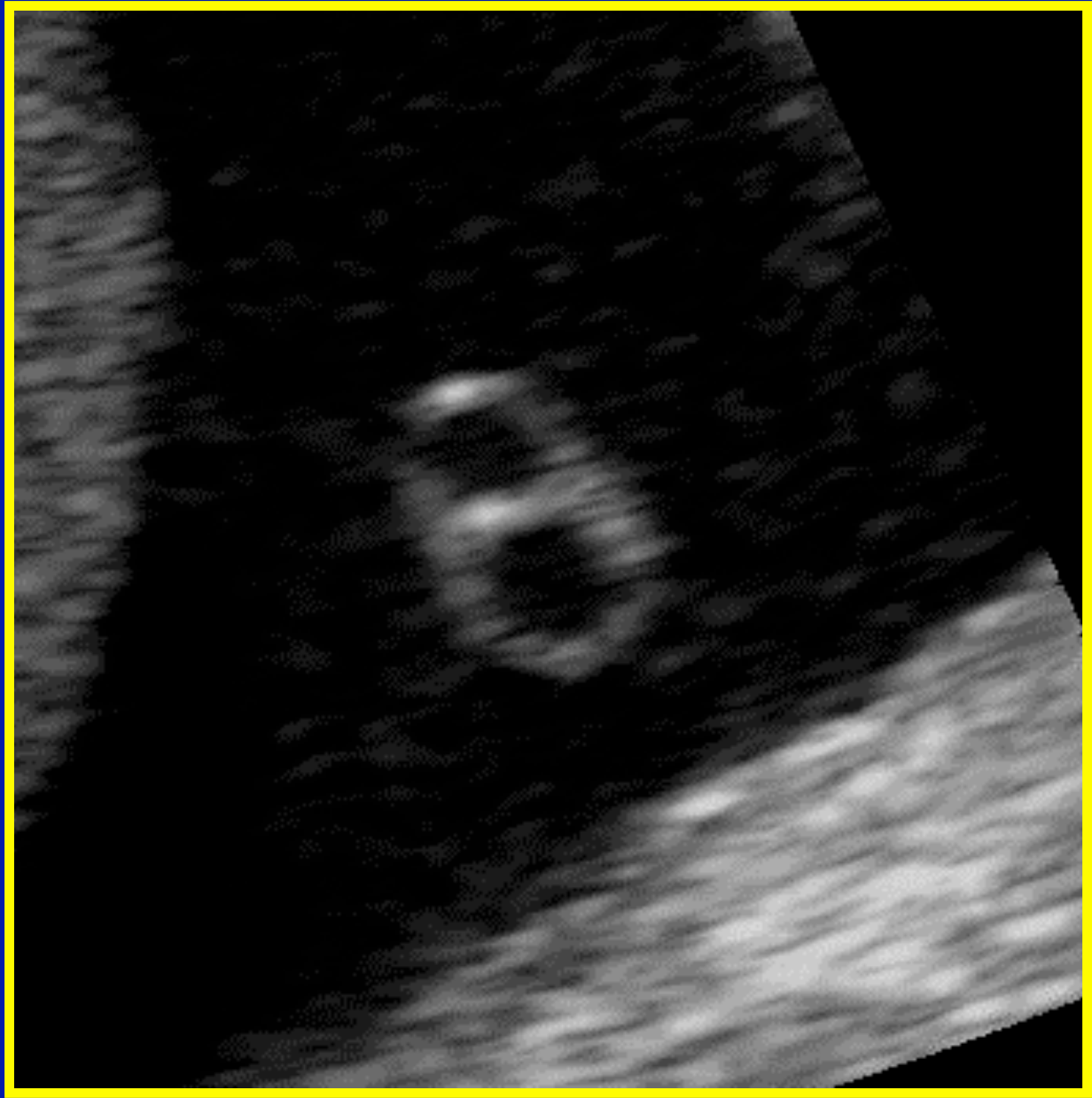


1. Trim.
Har-mid
Pwr -10
Gn 4
C7 / M7
P3 / E1
MI 0.3
TIS 0.5

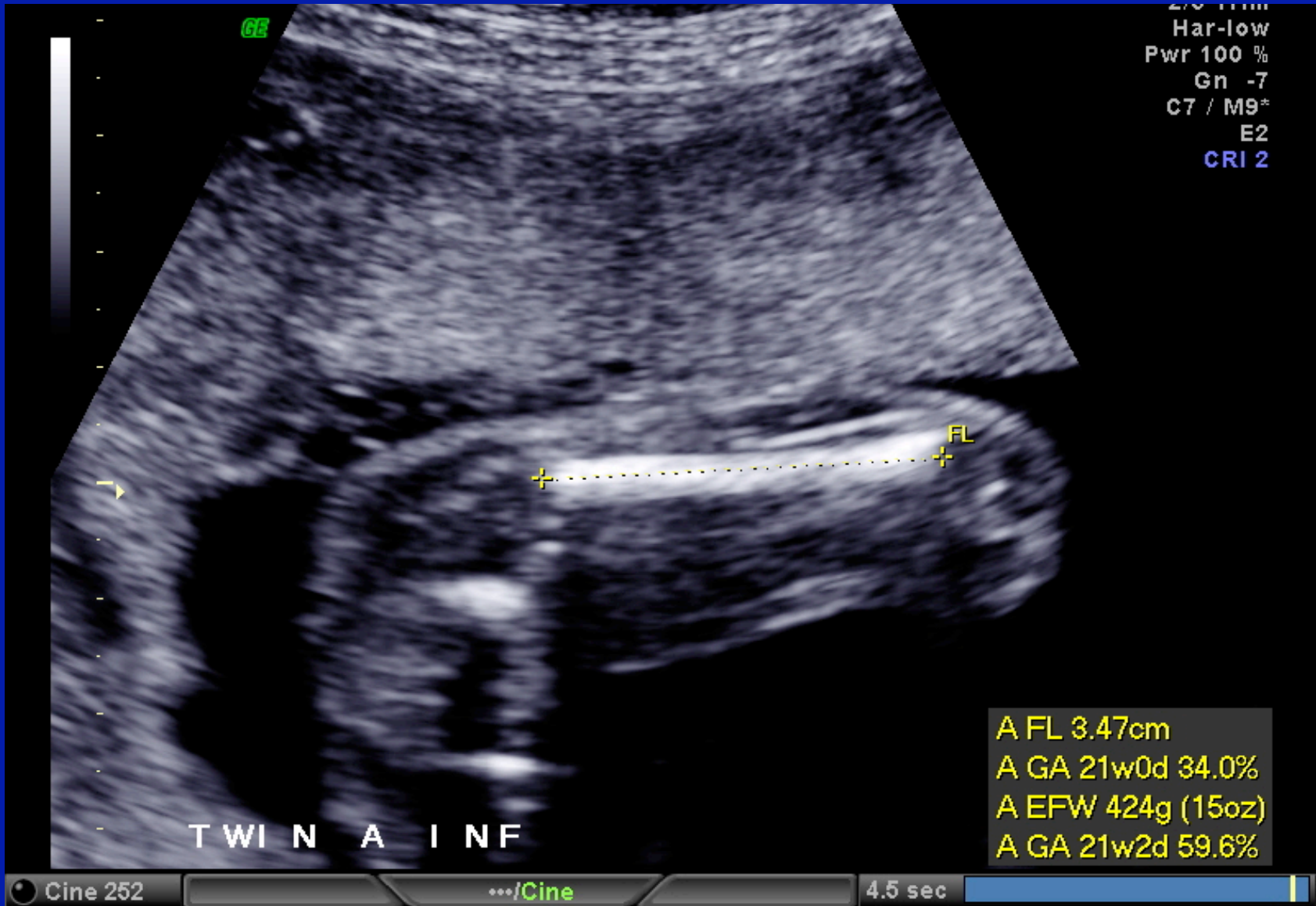
Gn -4.2
Bal 120
Qual norm
WMF low2
PRF 1.3kHz
REC



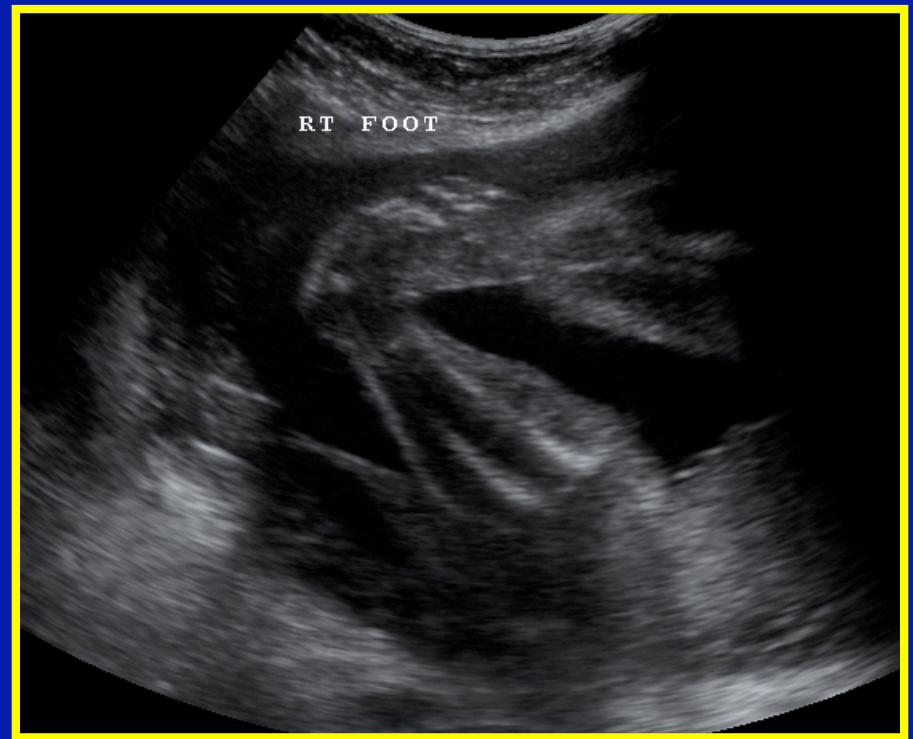
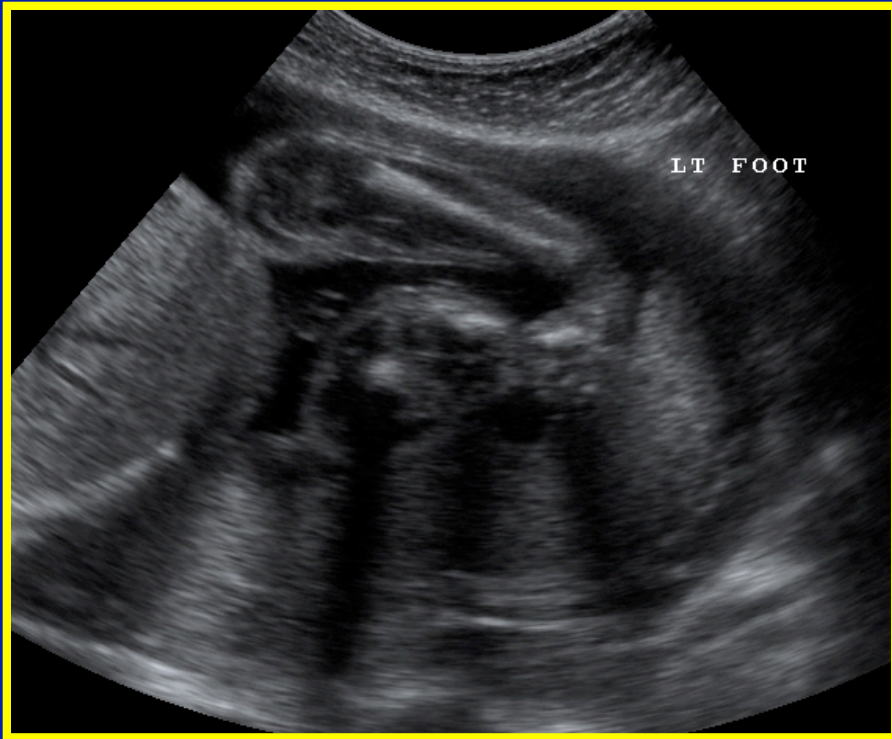




Limbs



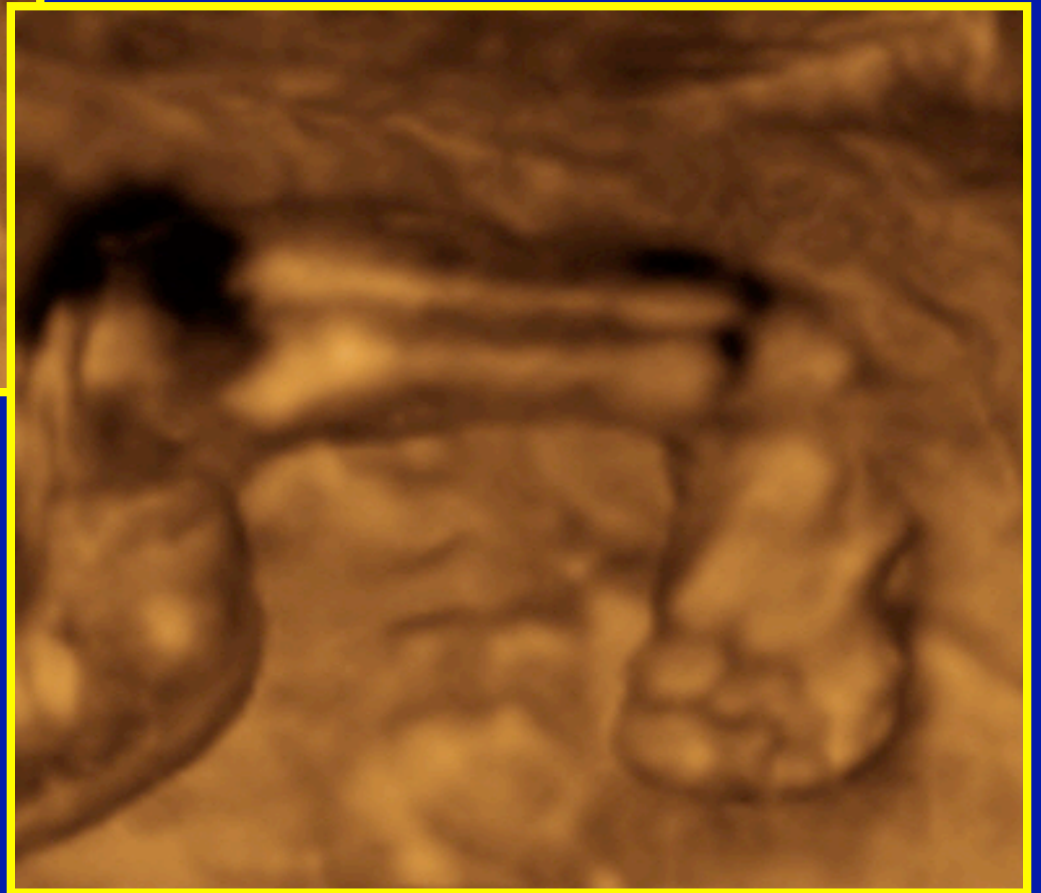


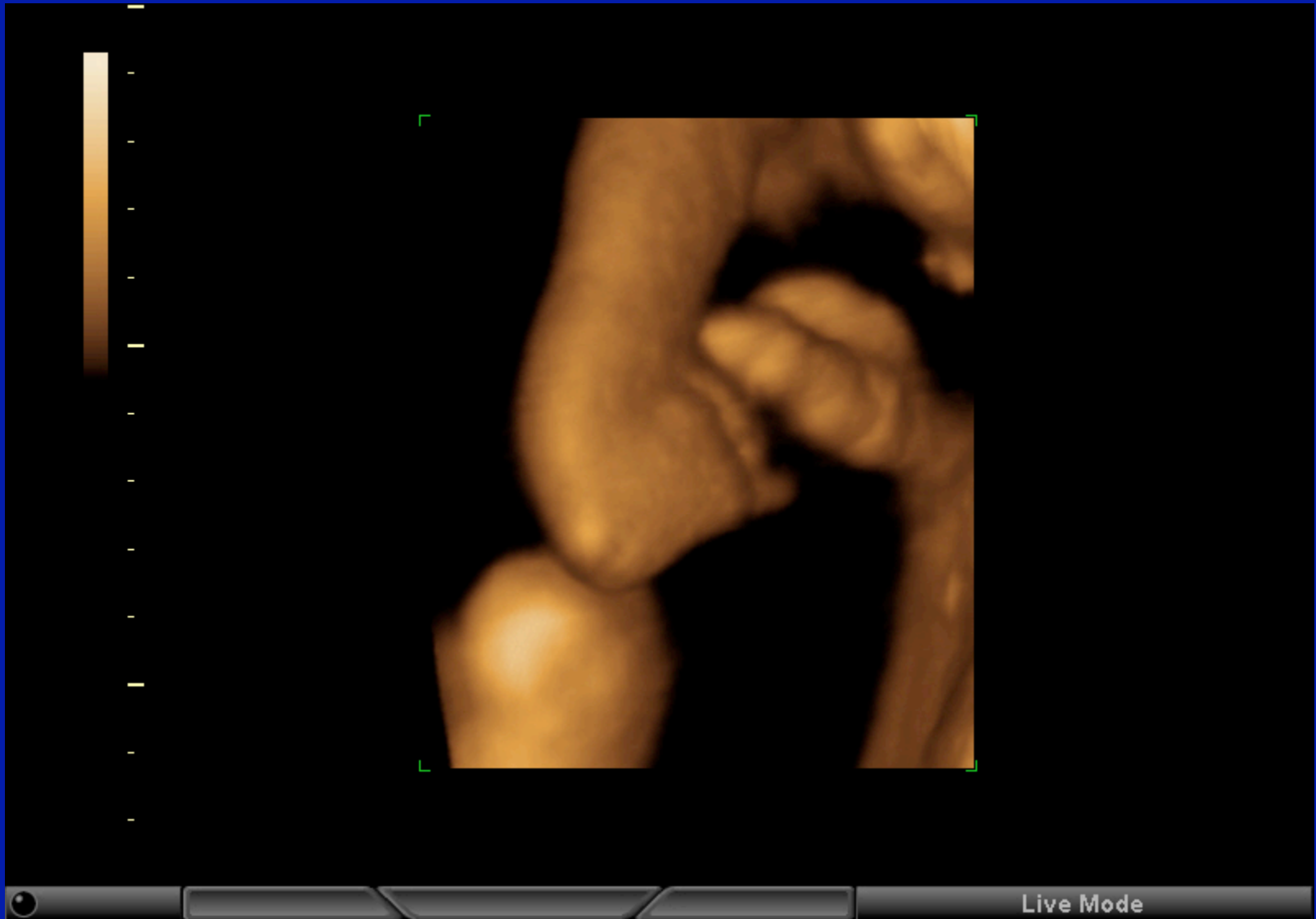


24 weeks



Left foot







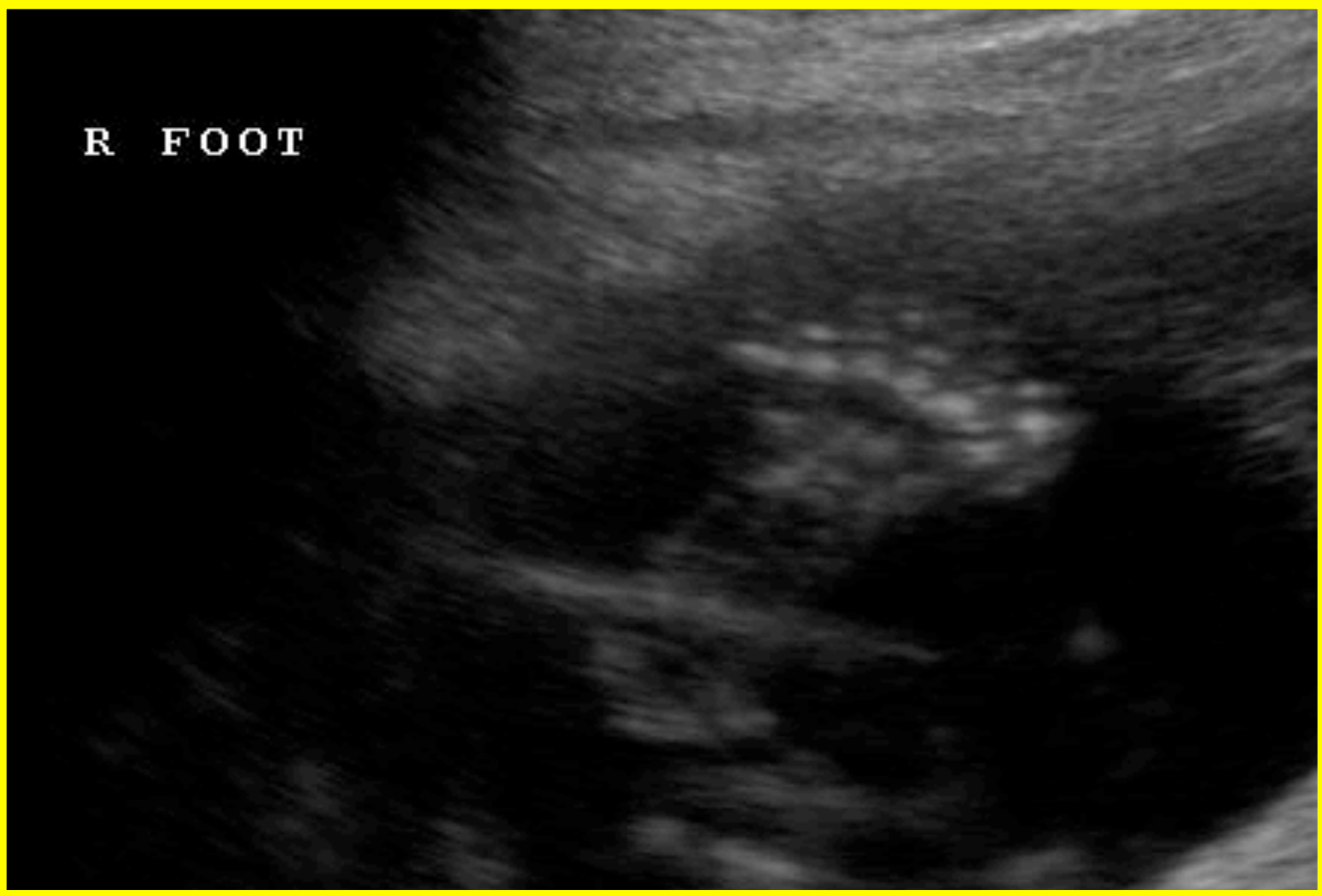
Embryoscopy – 11 weeks







R FOOT



R FOOT

1

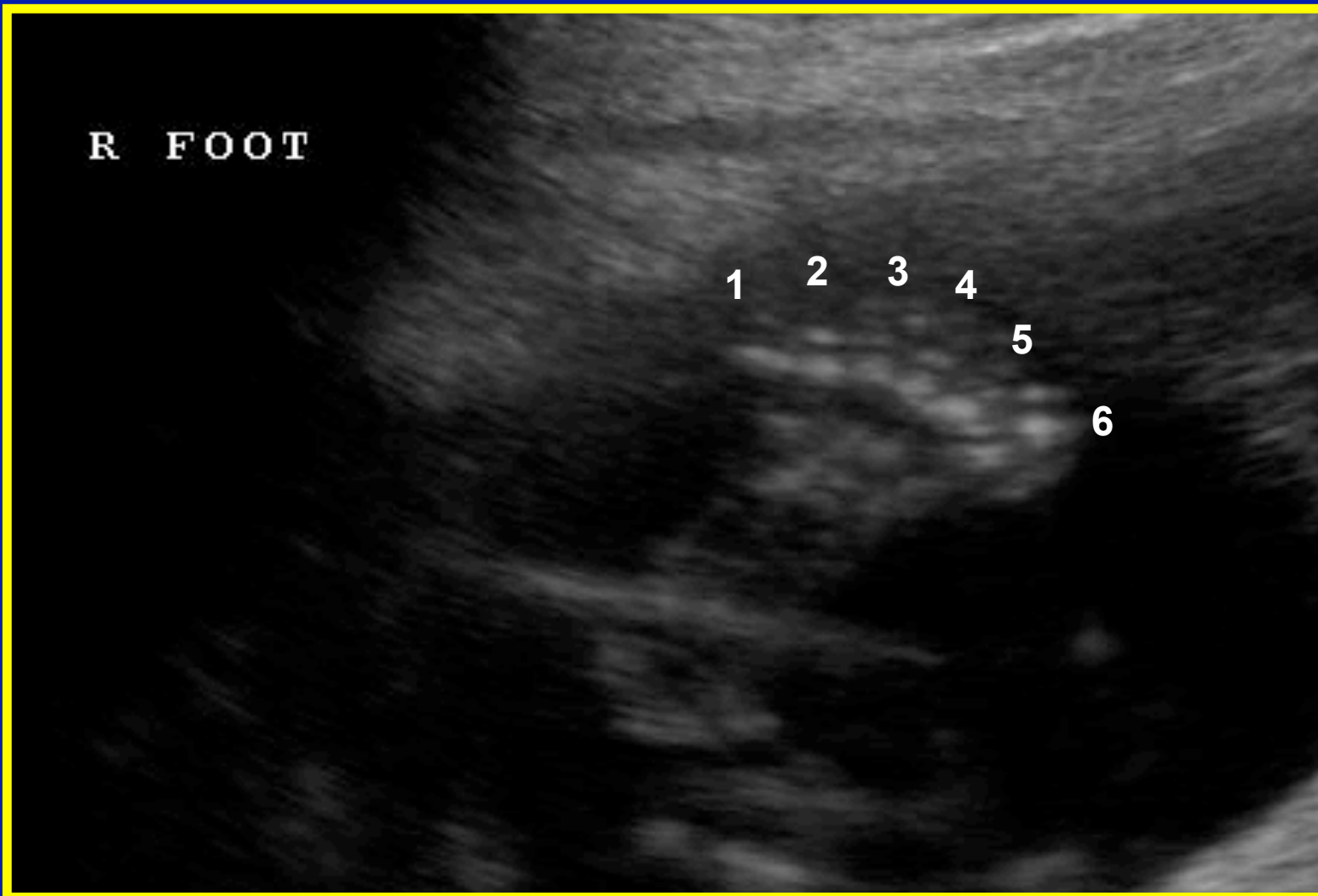
2

3

4

5

6





Trisomy 18



Ectrodactyly



Arthrogryposis

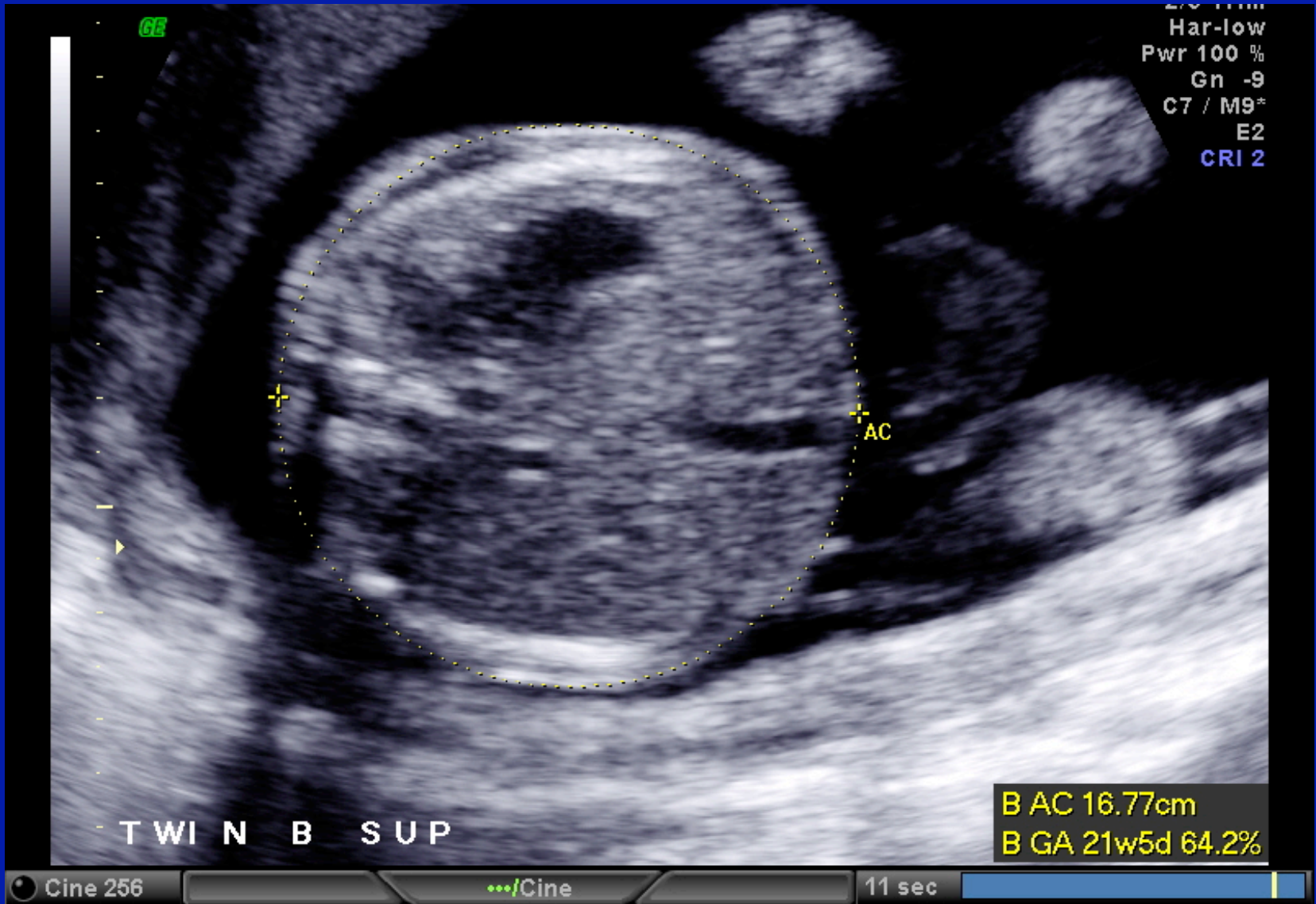
GI



2+3 Trim.
Har-high
Pwr 0
Gn 0
C7 / M7
P3 / E1
MI 1.2

bowel

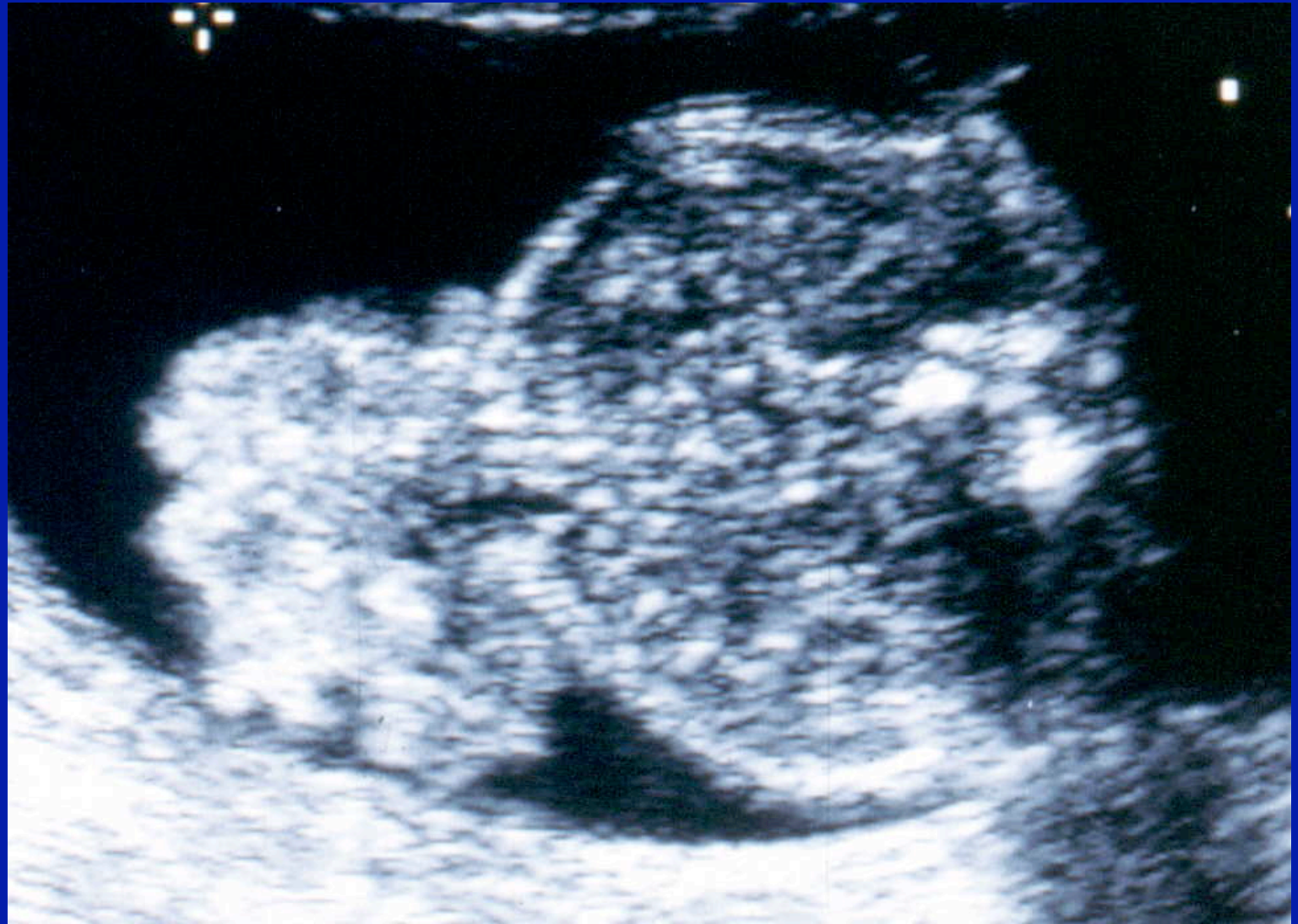
REC





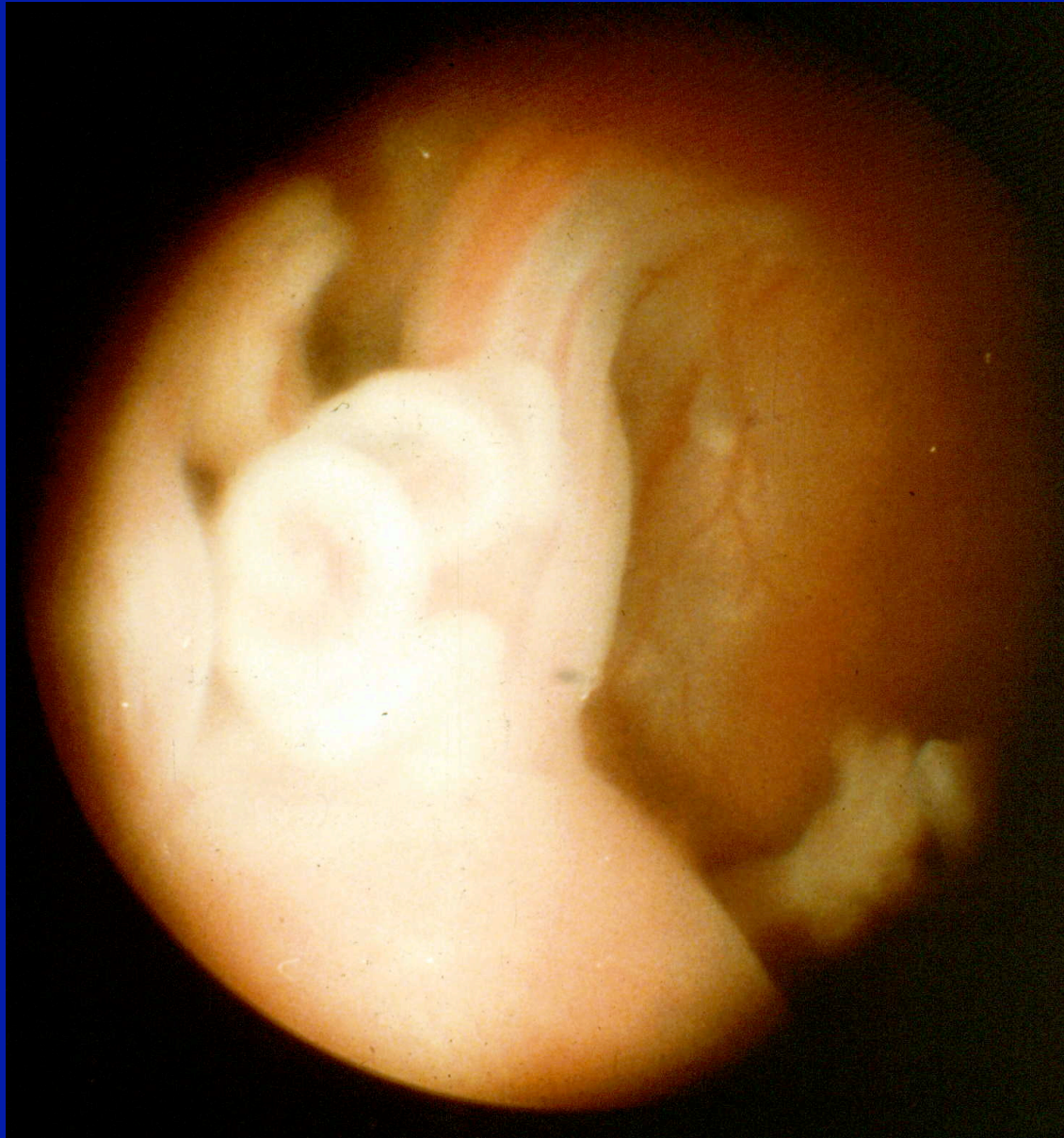
33 weeks



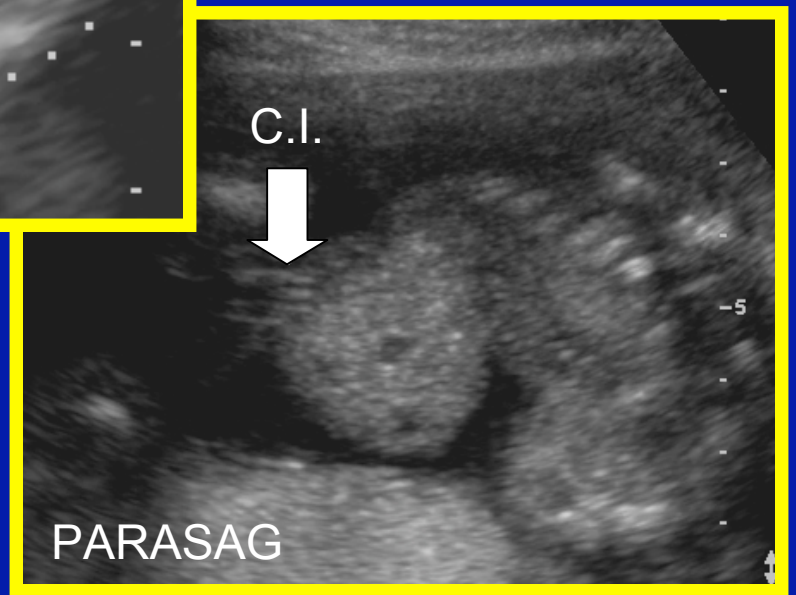
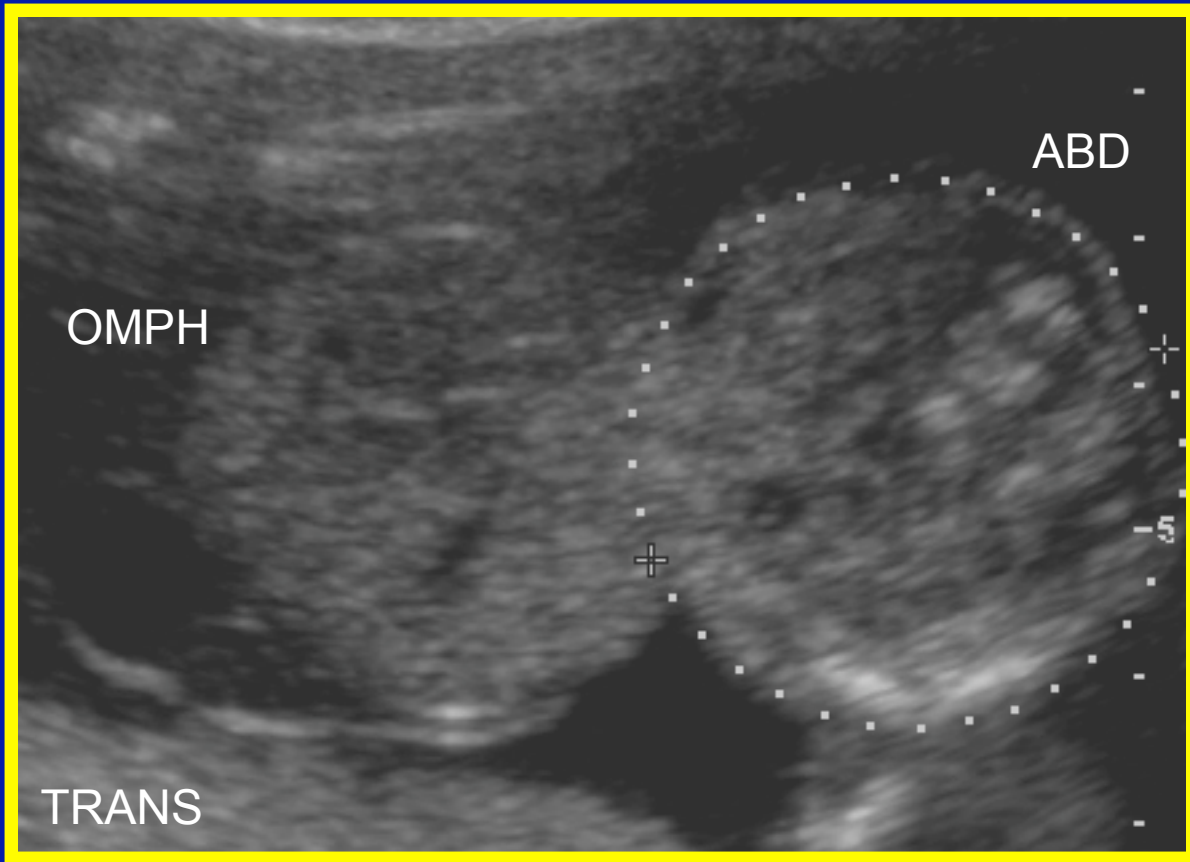




Physiologic abdominal hernia



Embryoscopy – Physiologic Hernia

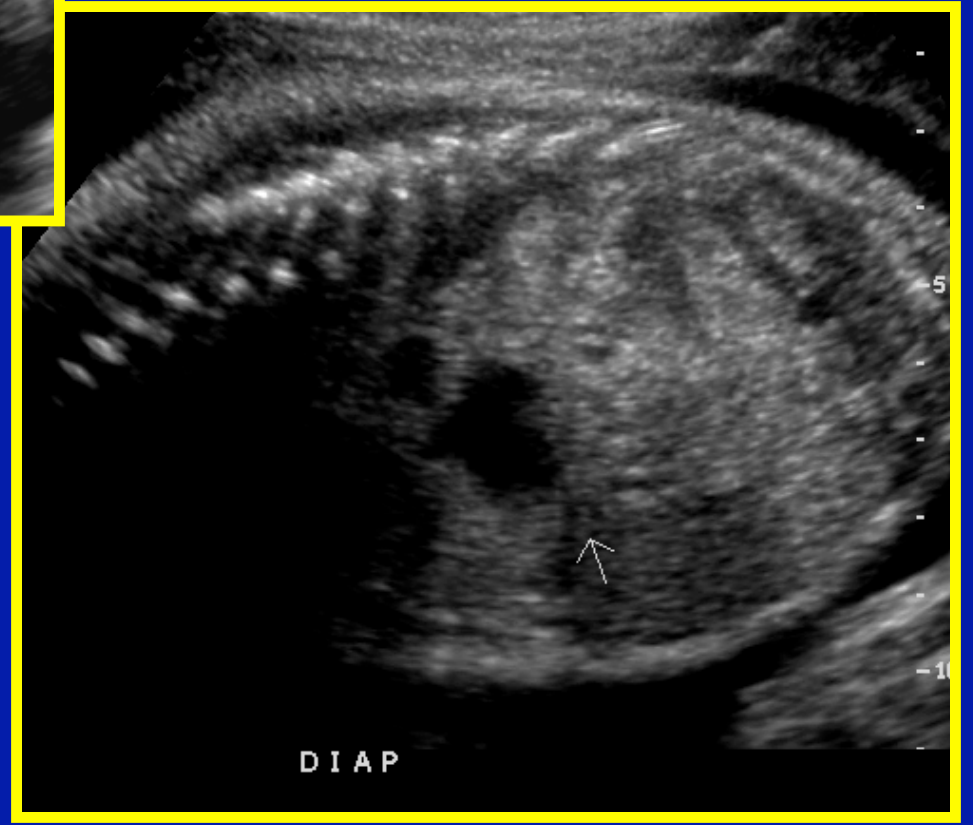
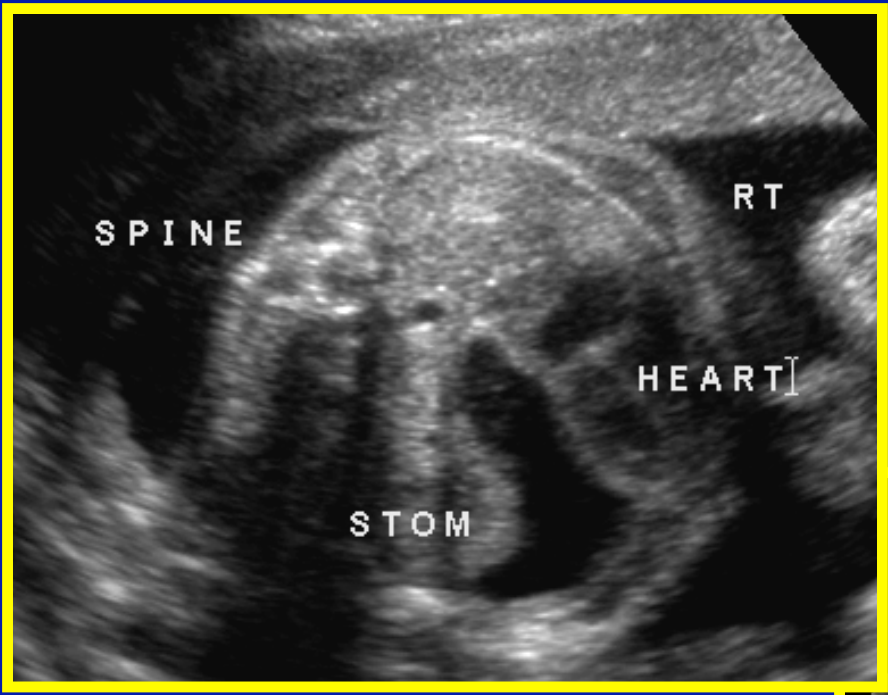


18 weeks



--- 3D/4D ---
Default
Th35/Qual high2
B52°/V65°
Mix44/56
S.sm./L.gr
M38/96
3D Static

--- 2D ---
Routine
Har-low
Pwr 100 %
Gn -9
C8 / M7
P3 / E1



FIDJ
5000

NODA, KEIKO RK
Columbia Presbyterian

4960897
C5-2 OB/Gen

23 May 05
11:47:16 am

Tib0.2 MI 1.0
Fr #125 11.6cm

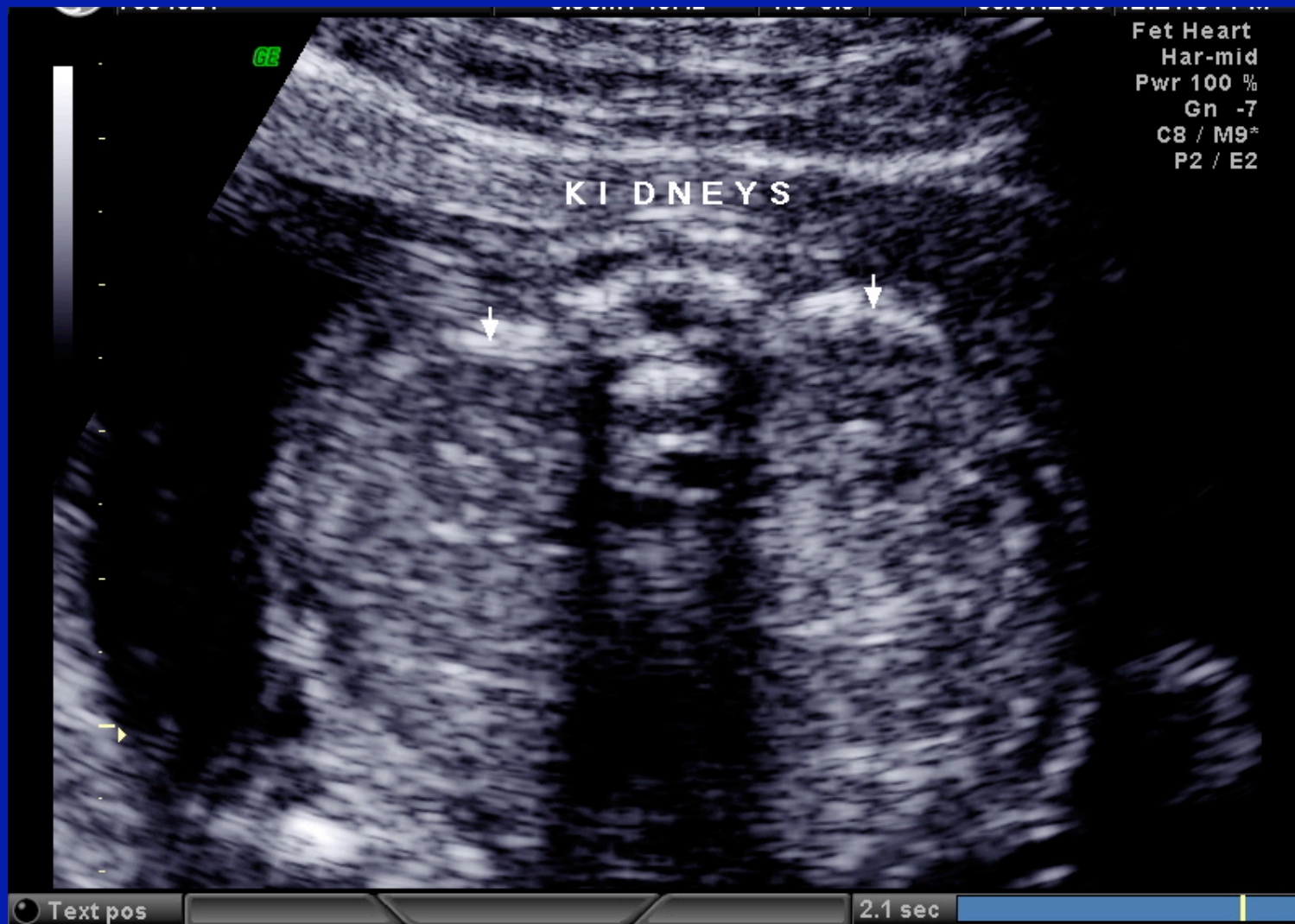
ATL

C 2
150dB/C 3
Persist Med
2D Opt:HRes
Fr Rate:Max



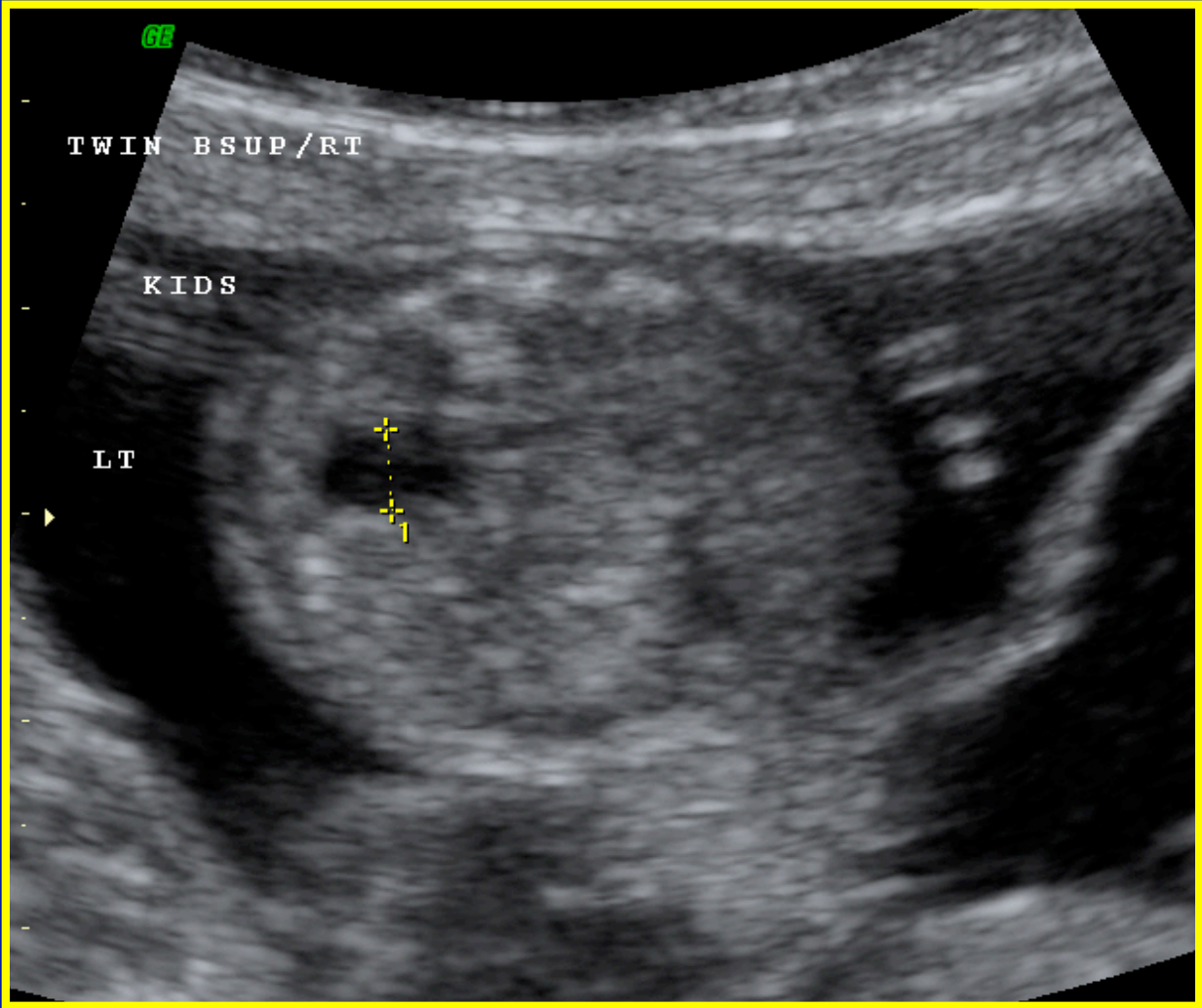
+ 1.52cm
x 1.62cm

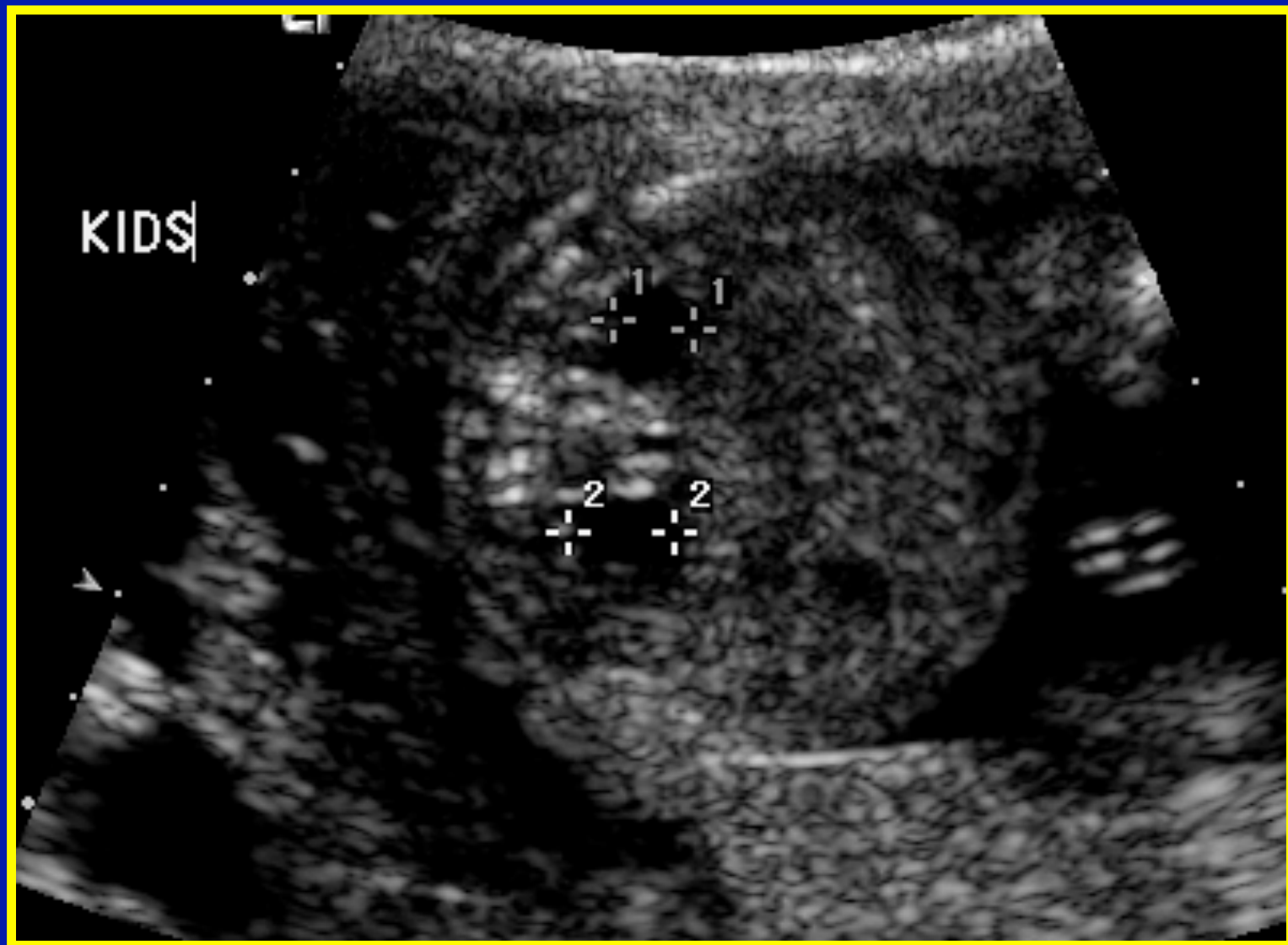
GU

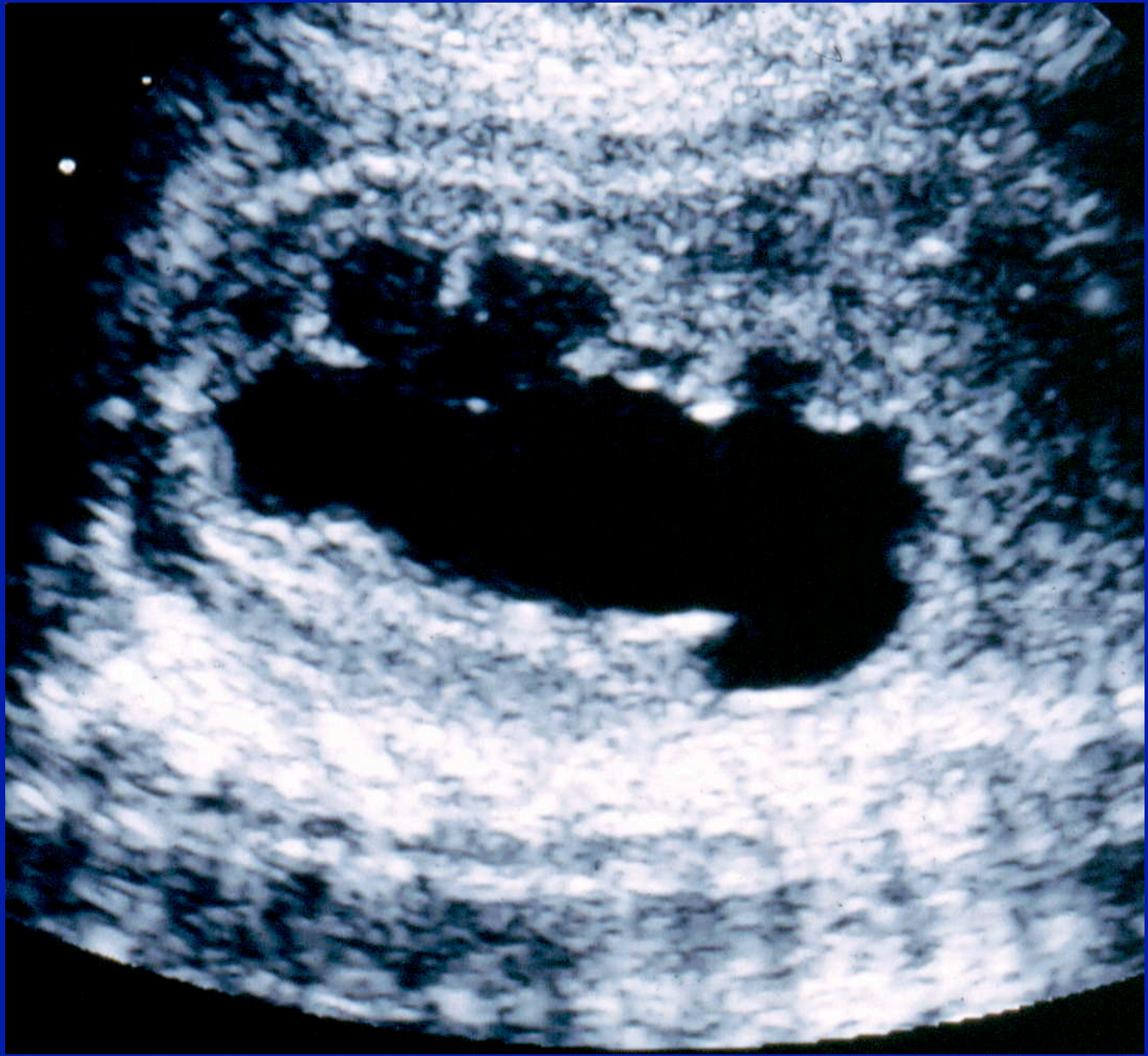


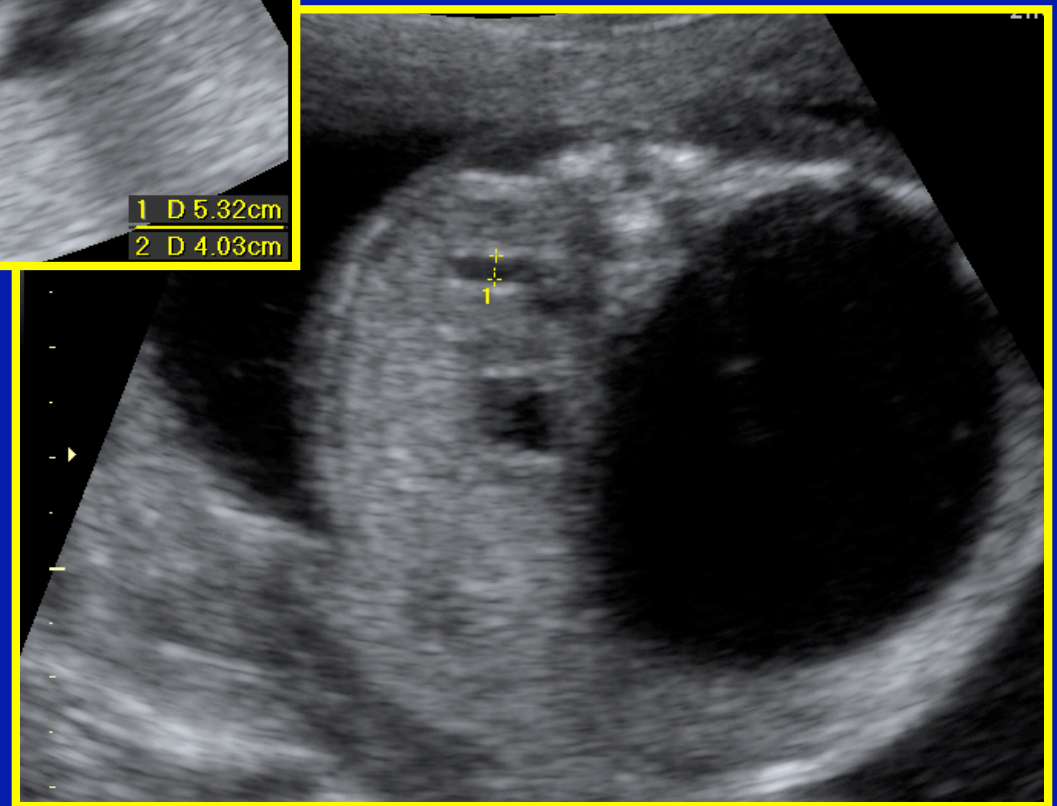
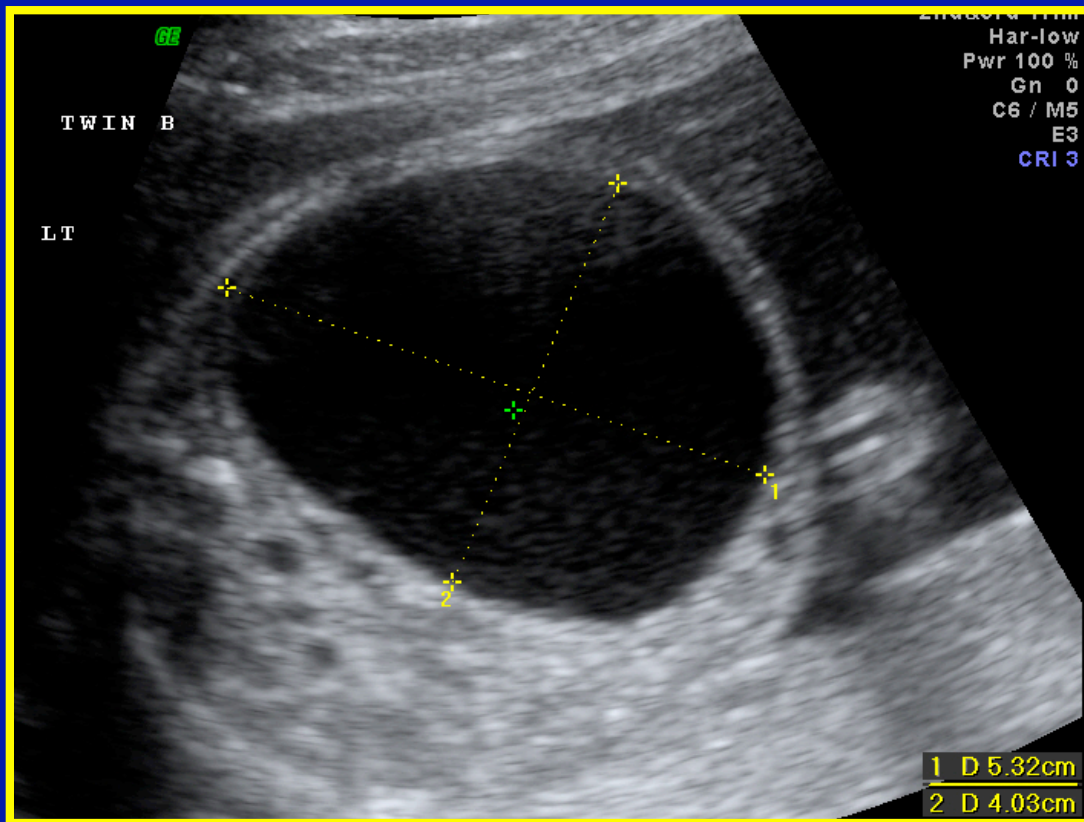


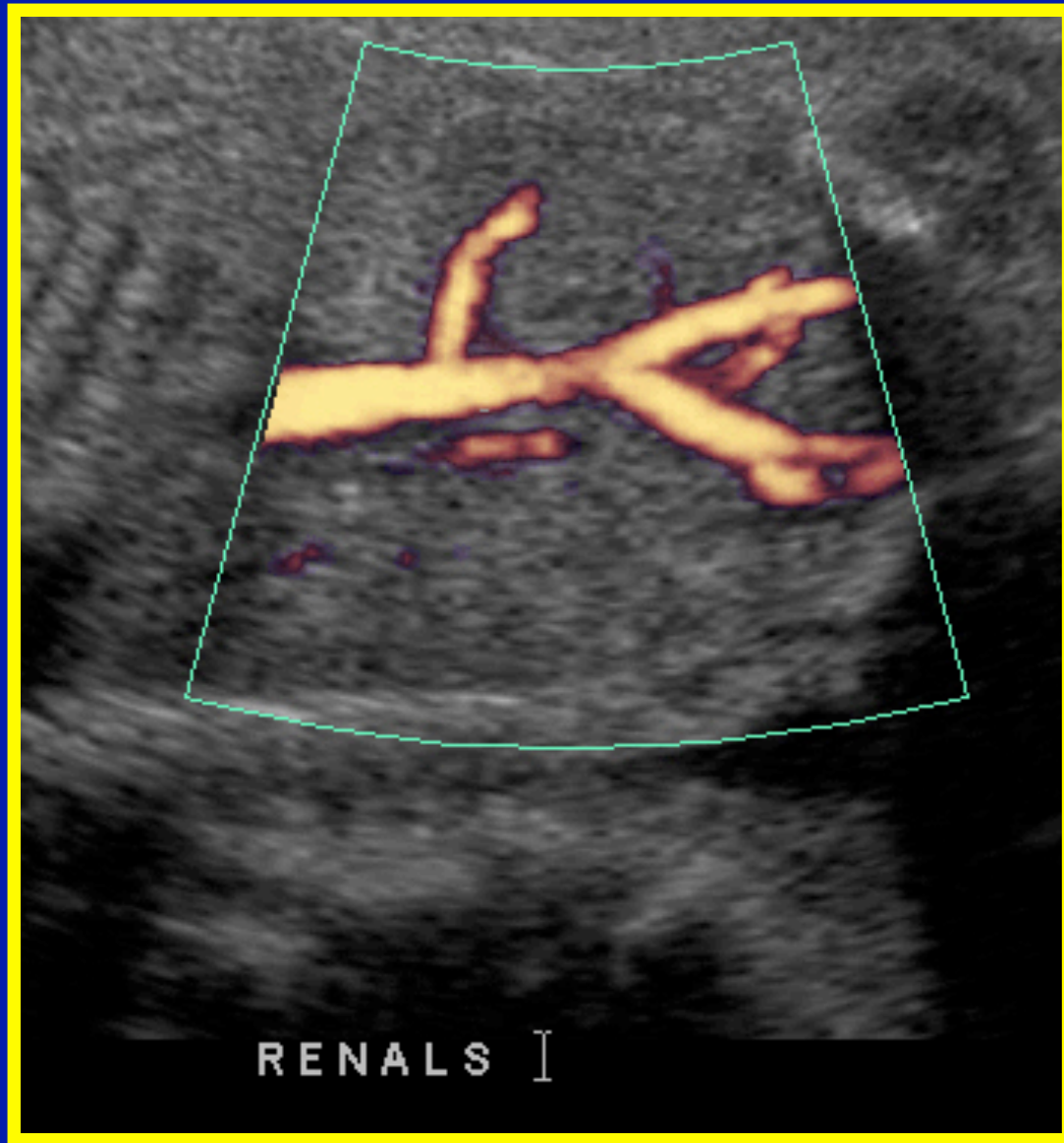
2+3 Trim.
Har-high
Pwr -2
Gn 0
C7 / M7
P3 / E1
MI 1.0



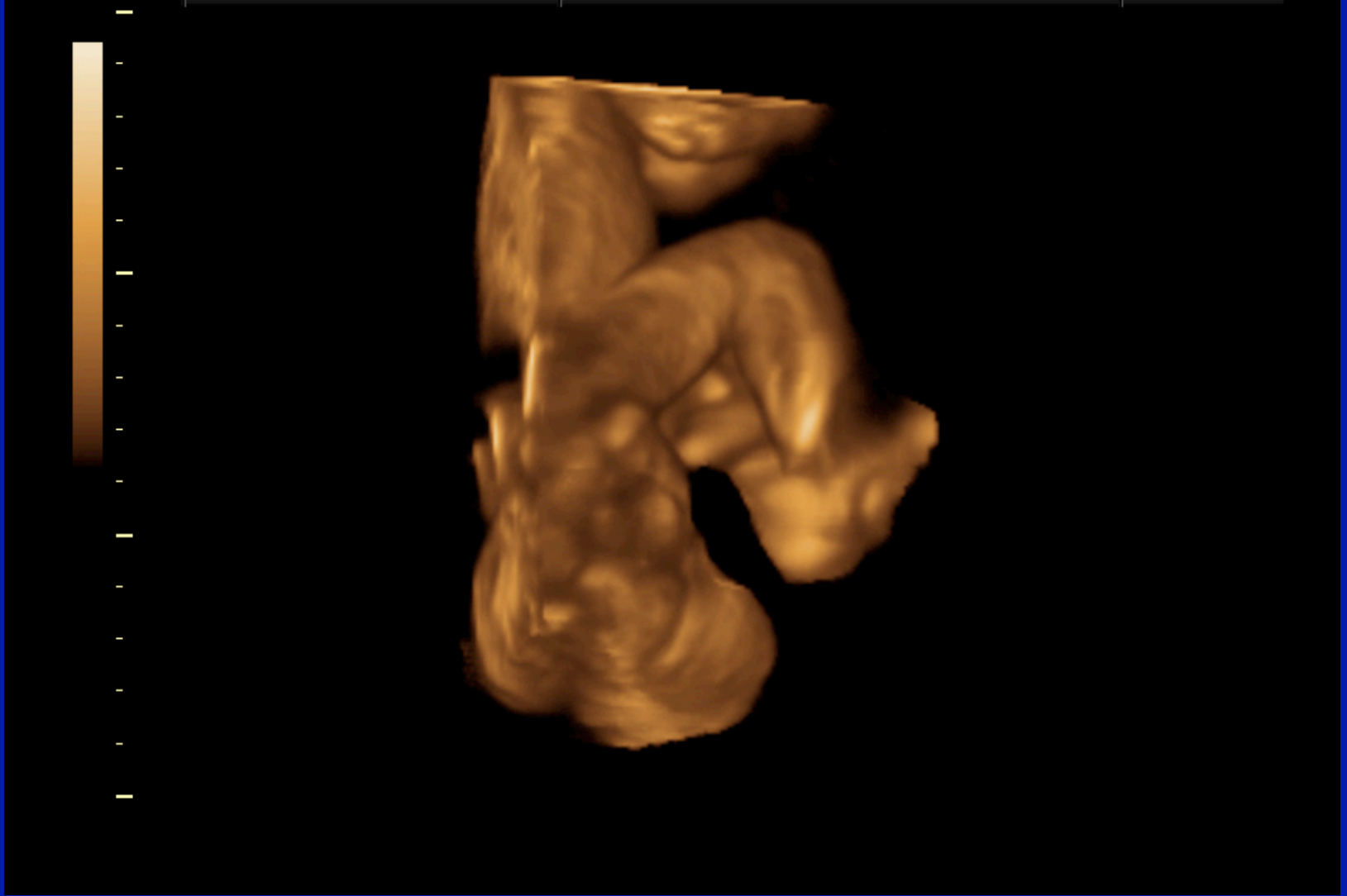






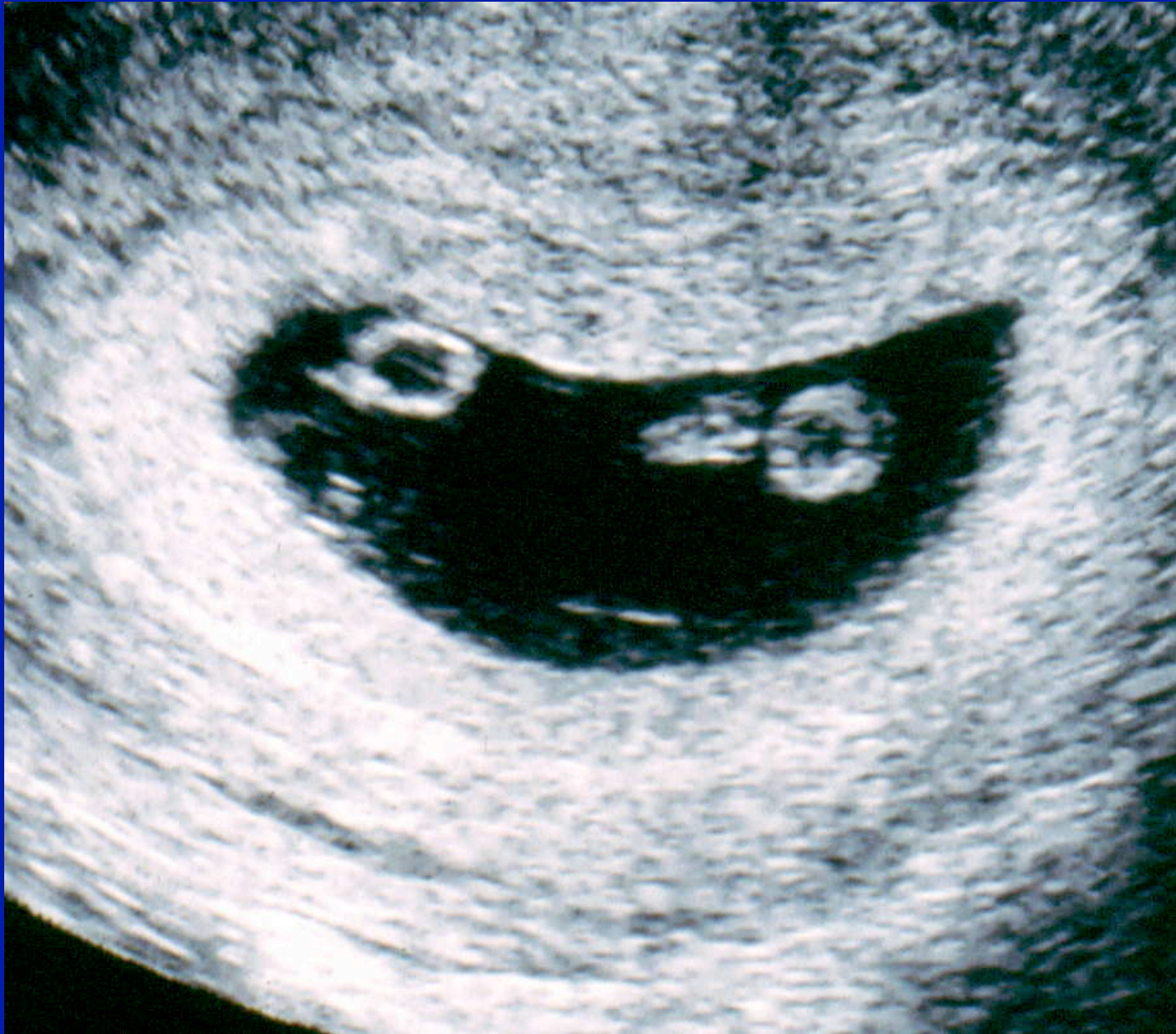


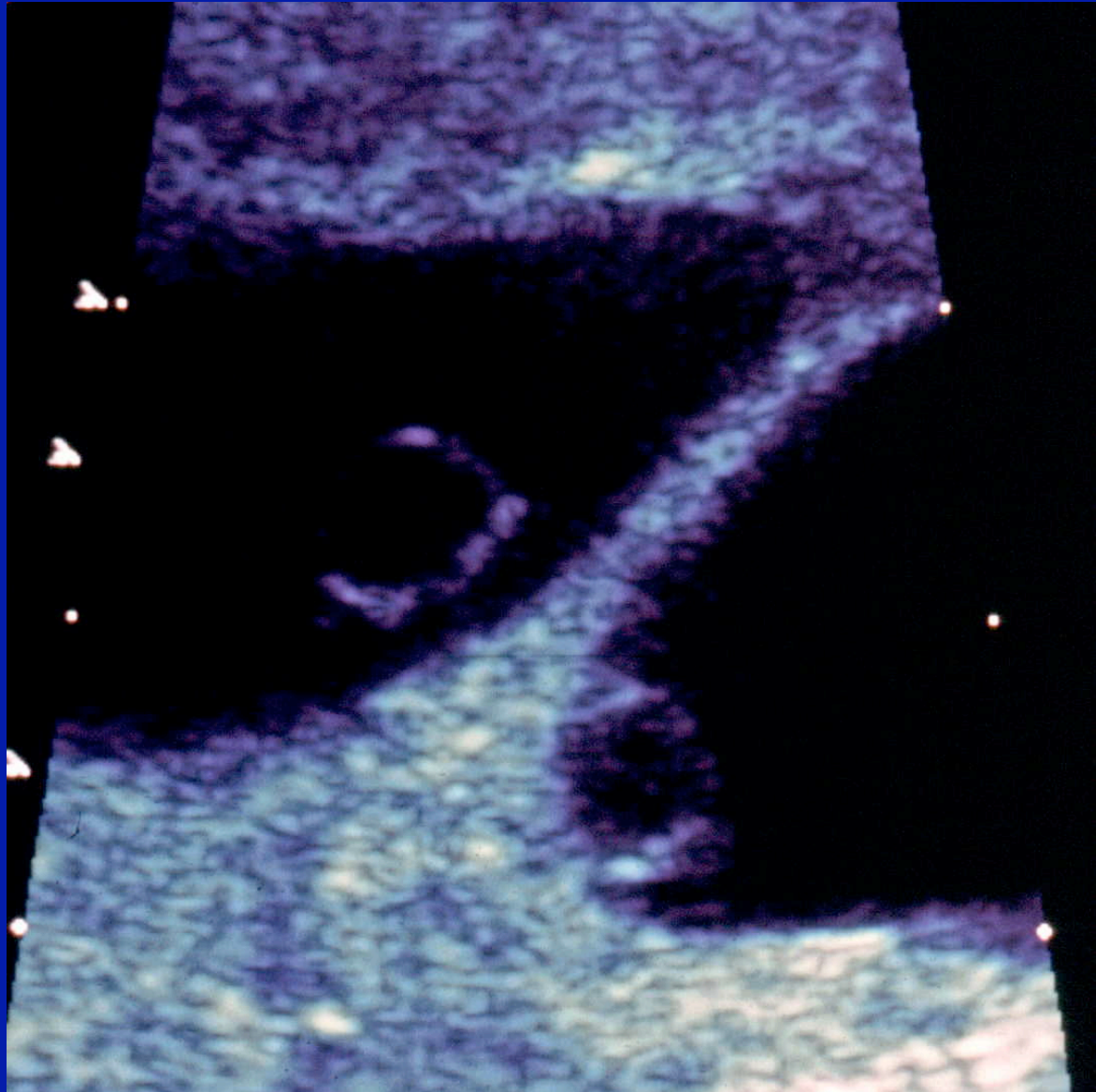
26 weeks

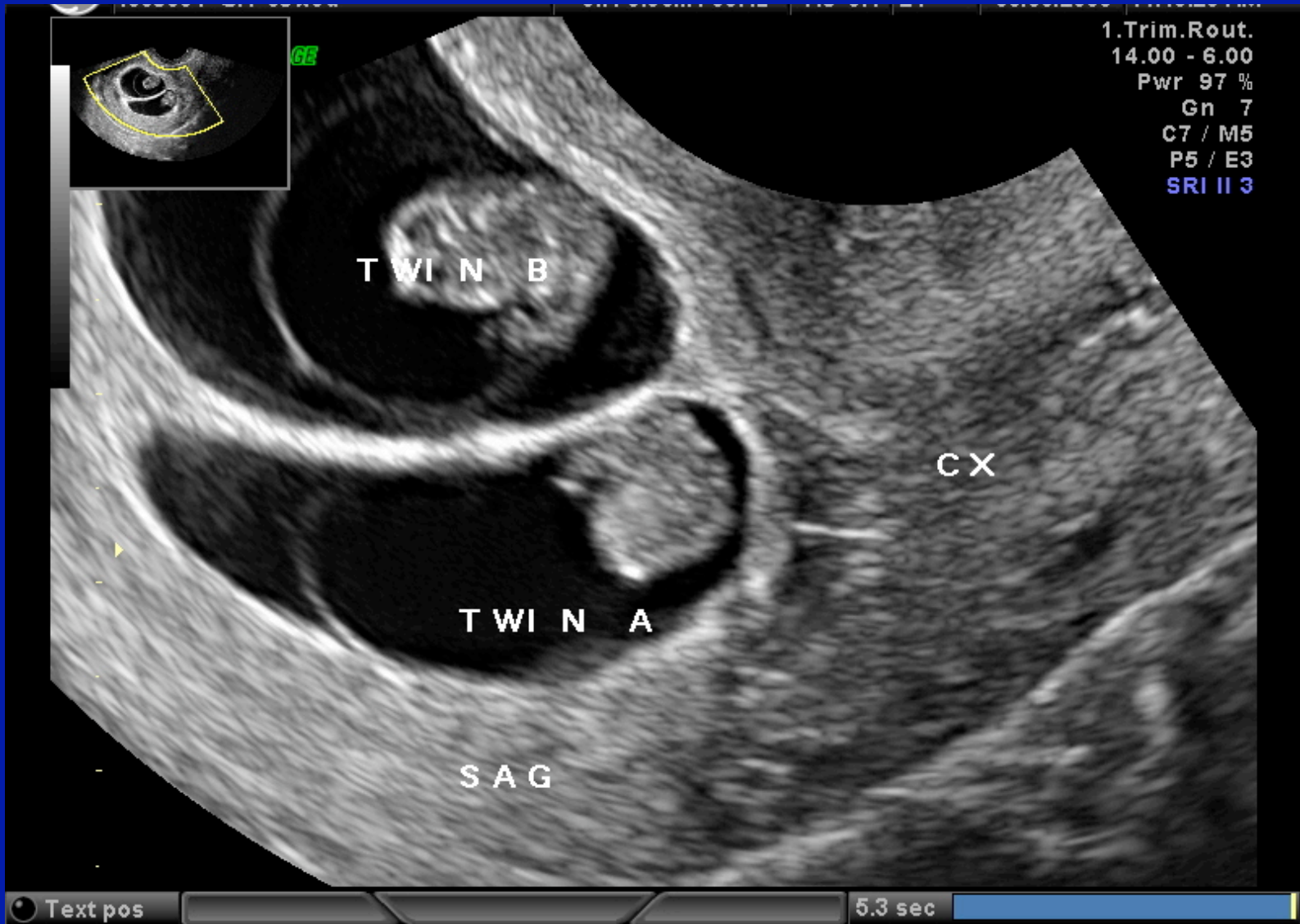




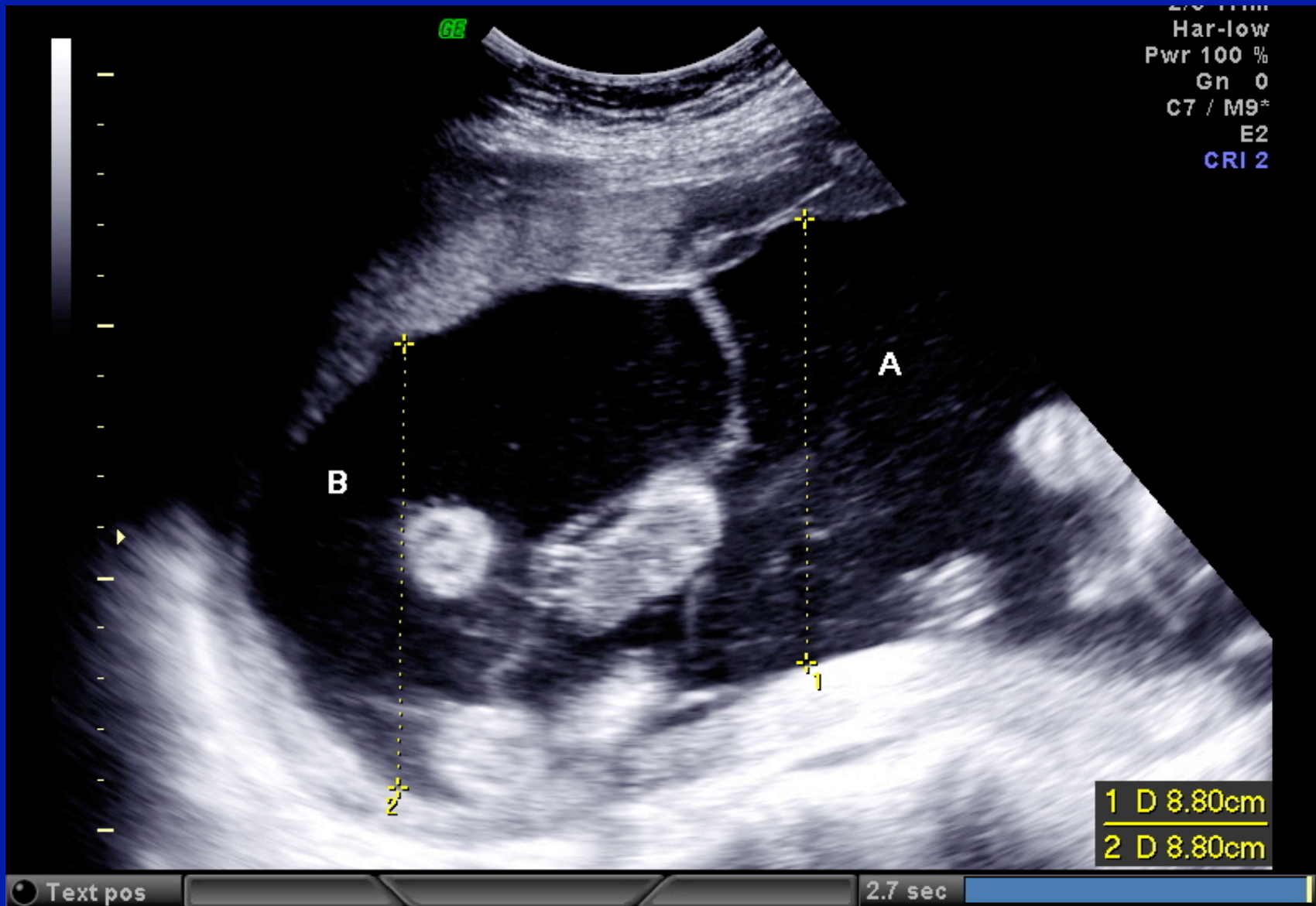
Multiple Gestation











1.50/Qual HighZ
B80°/V70°
Mix60/40
3D Static



AA

BB

Freeze

Zygoty and Chorionicity

The a priori risk of Down syndrome in a twin pregnancy is based on zygoty.

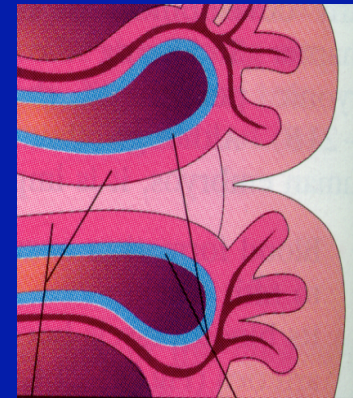
However, zygoty can only be determined by genetic analysis of both fetuses.

Chorionicity, determined non-invasively by ultrasound, can be used to determine the likelihood of zygoty.

Dizygotic Pregnancy

Twins resulting from 2 ova fertilized
by 2 sperm.

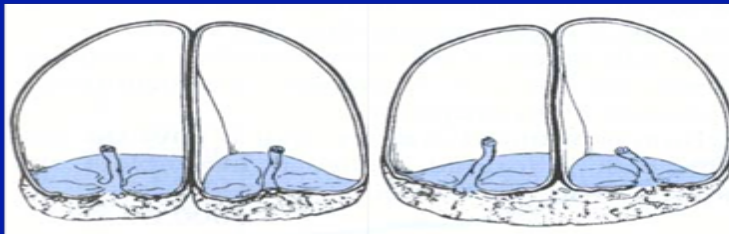
These are ALWAYS dichorionic



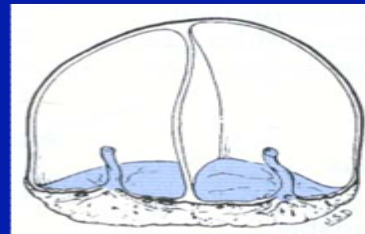
Monozygotic Pregnancy

One ovum fertilized by one sperm
that subsequently splits

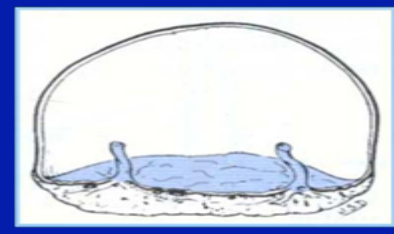
<4 days
DC/DA
20-30%



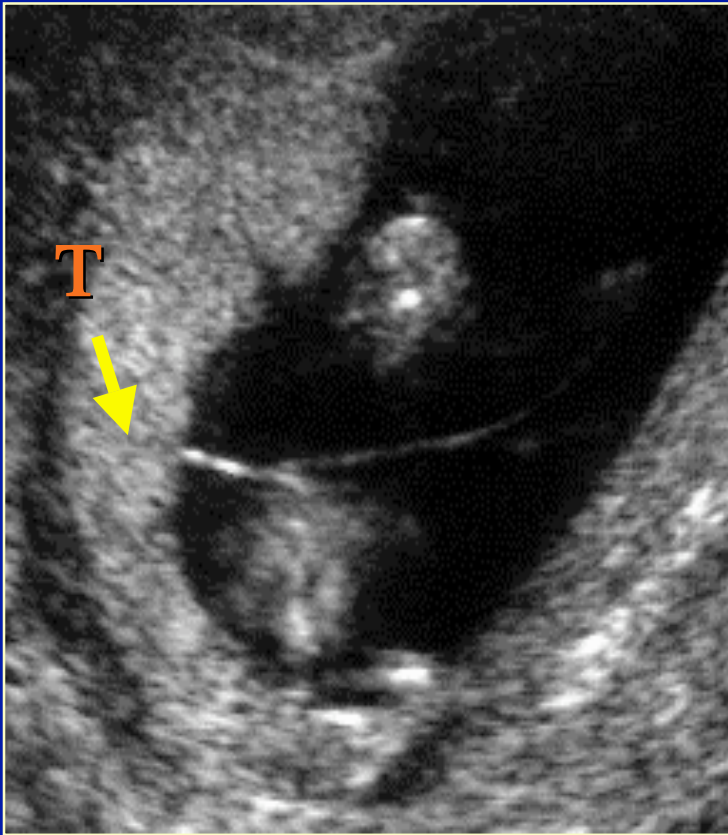
4-7 days
MC/DA
70%



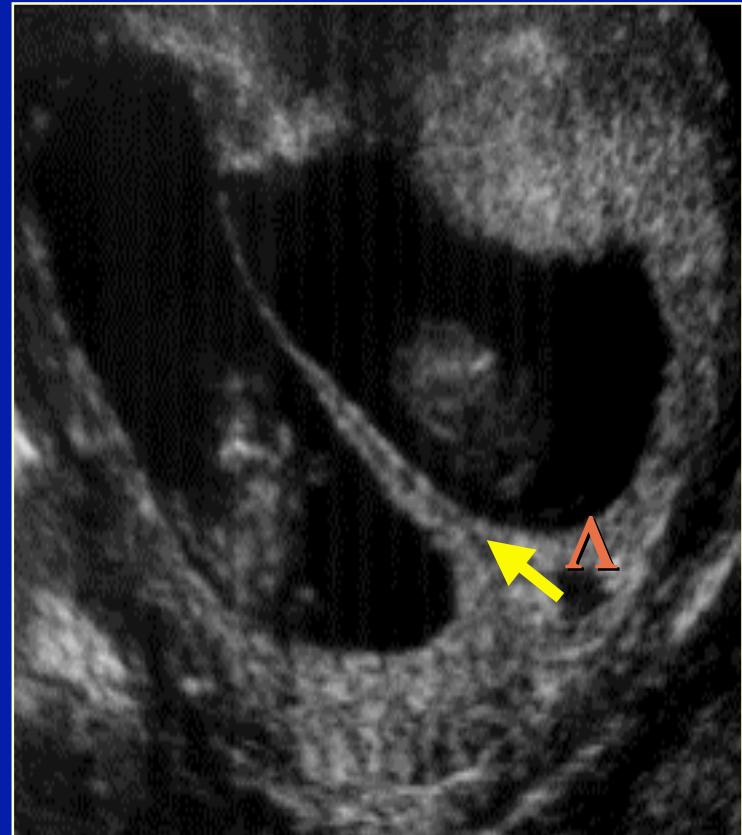
7-15 days
MC/MA
2-4%



Diagnosis of Chorionicity

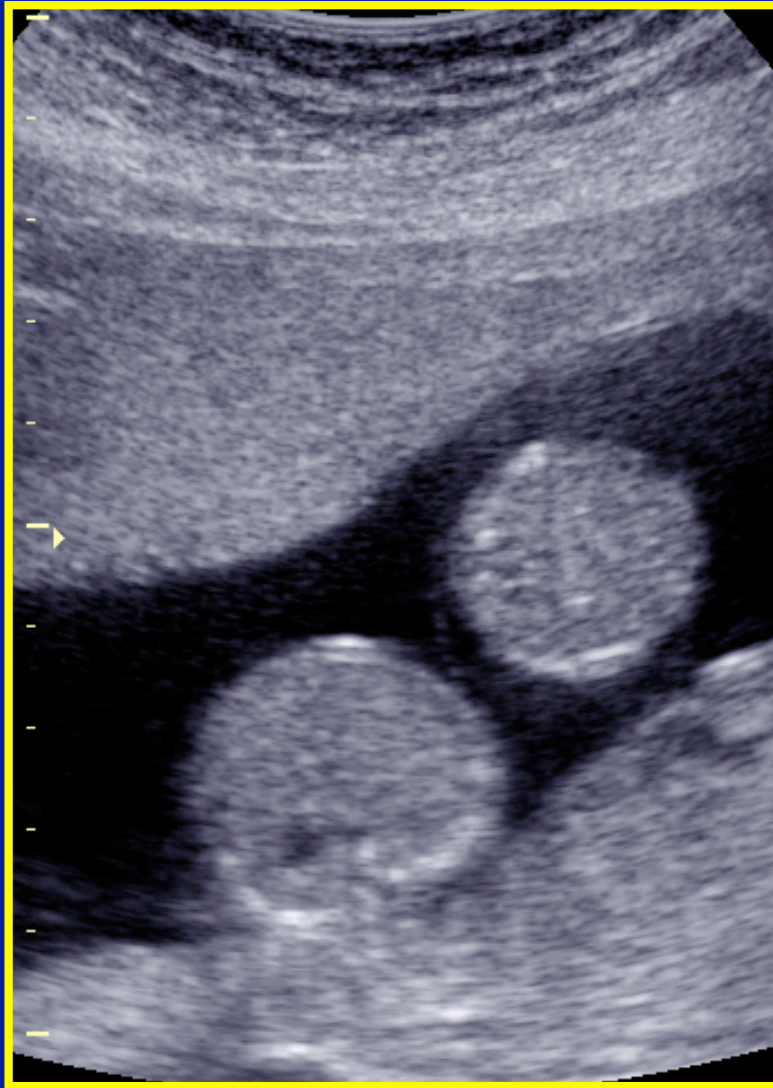


Monochorionic
Always monozygotic
70-80% MZ twins

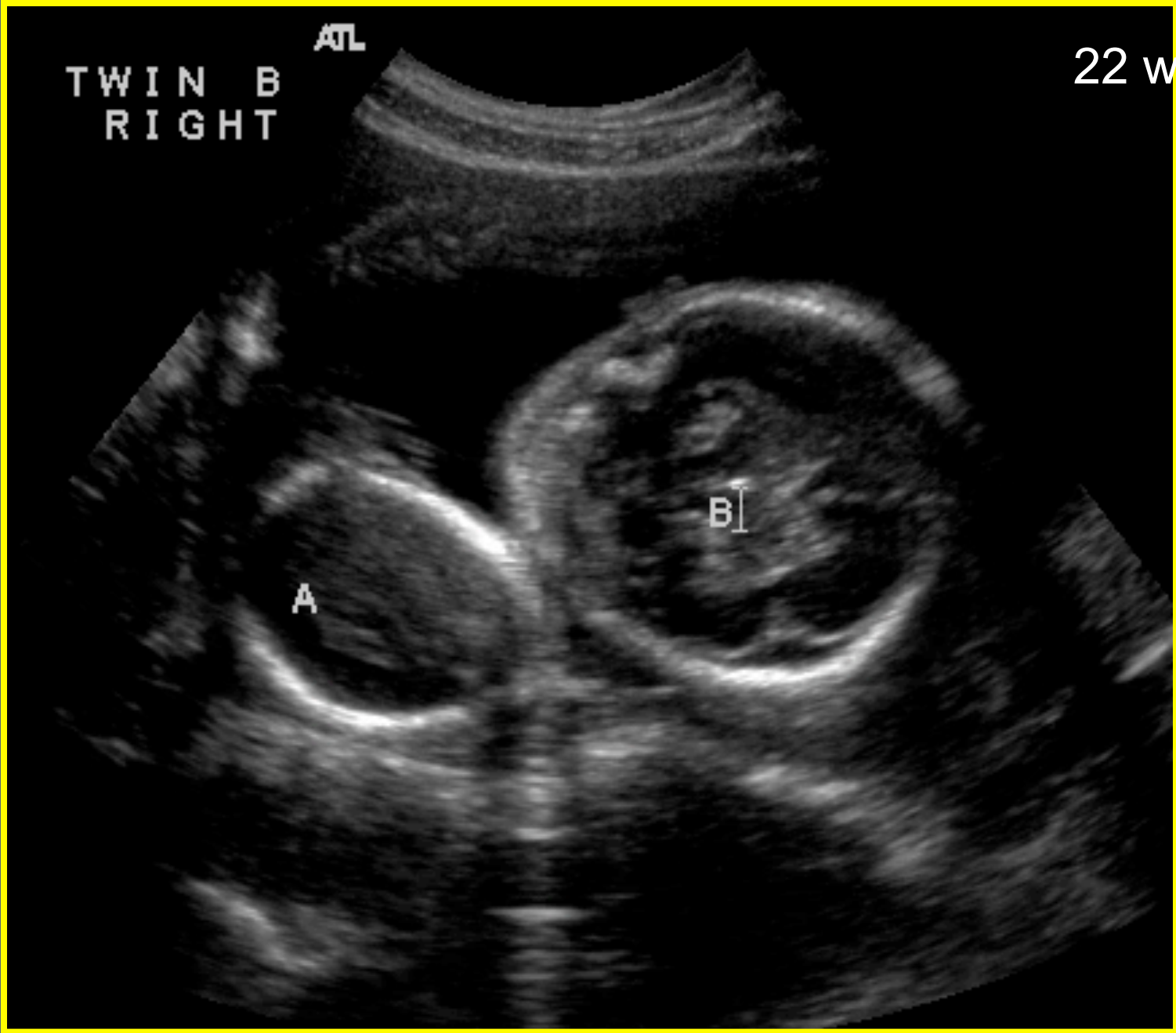


Dichorionic
All DZ twins
20-30% MZ twins

TTTS

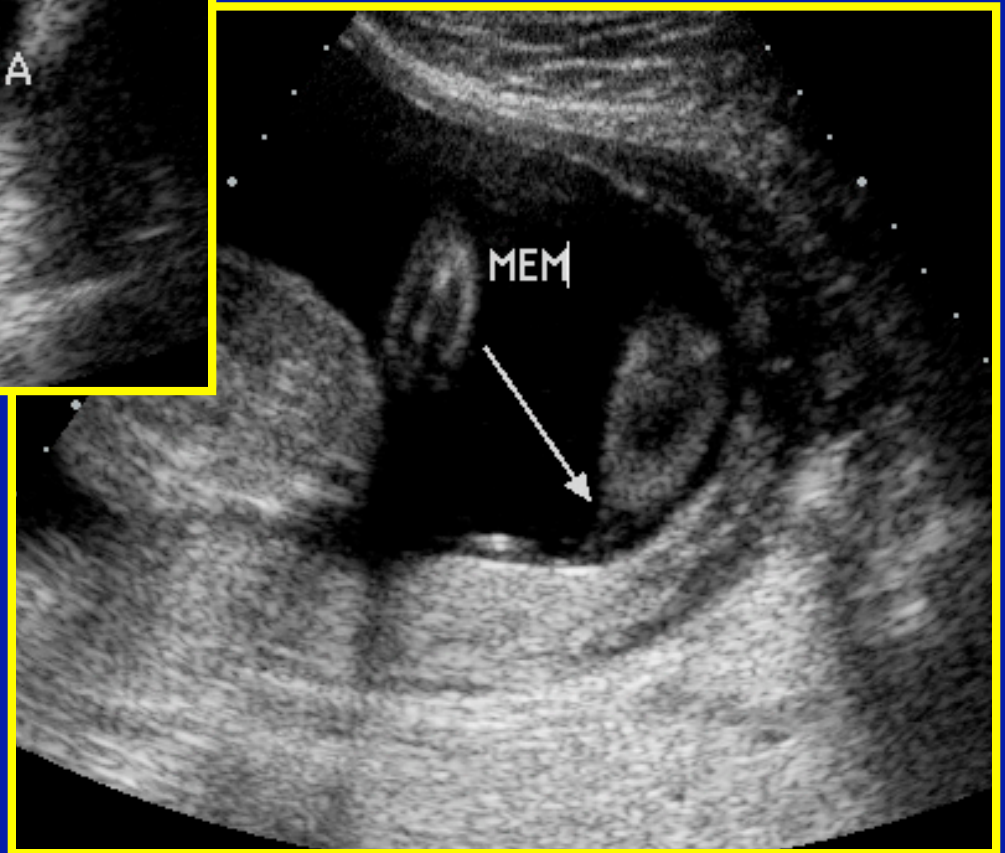


15 weeks

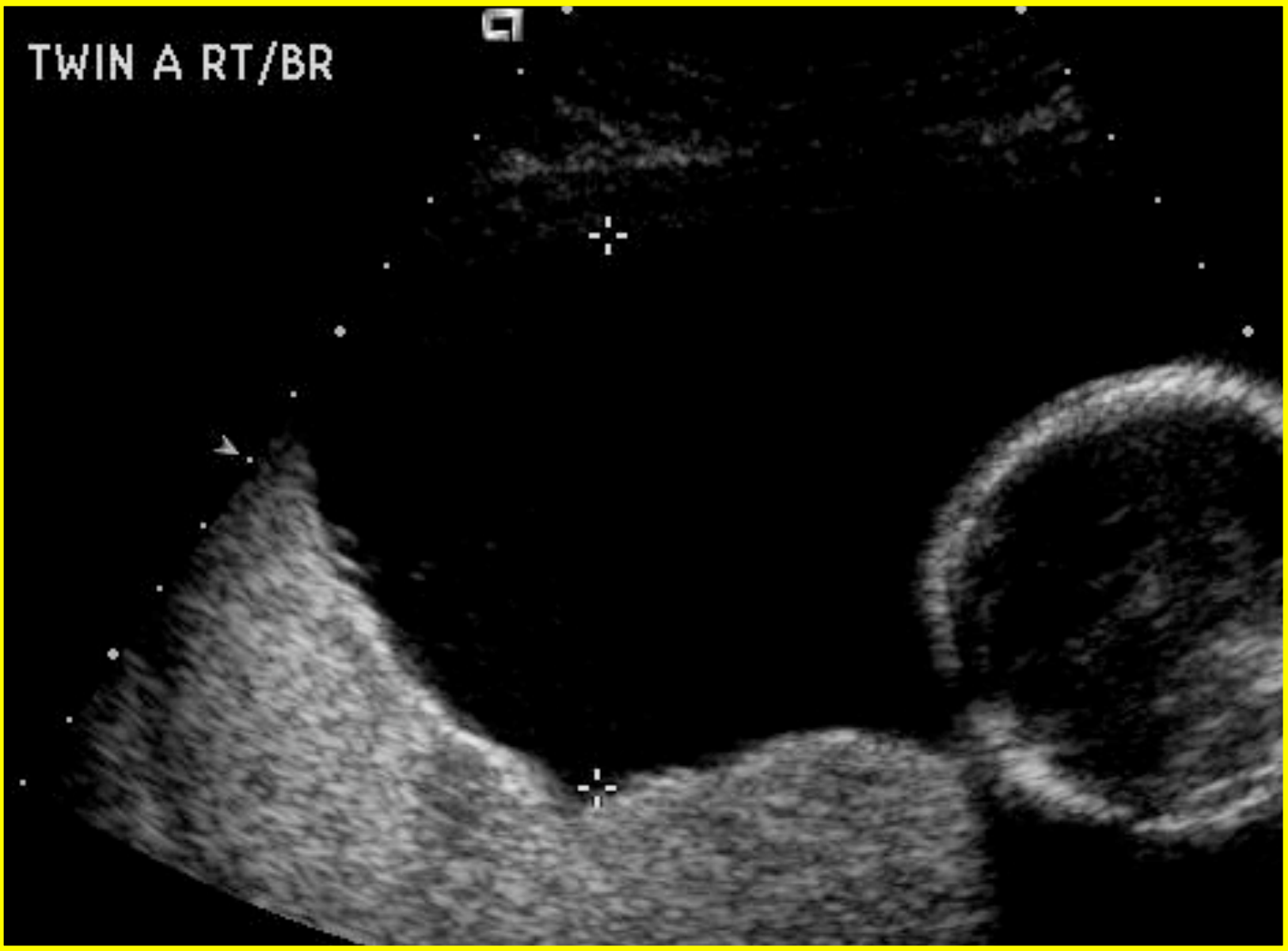




22 weeks

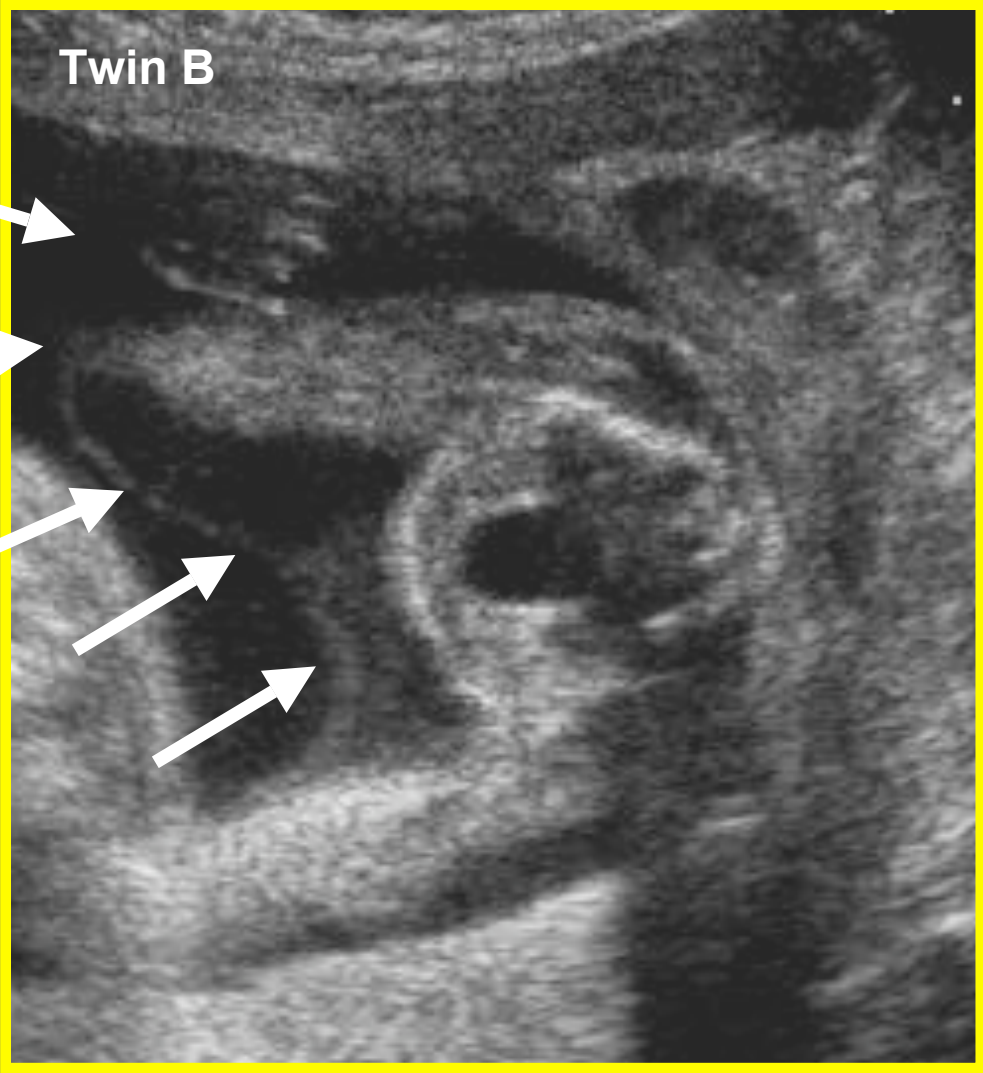


TWIN A RT/BR

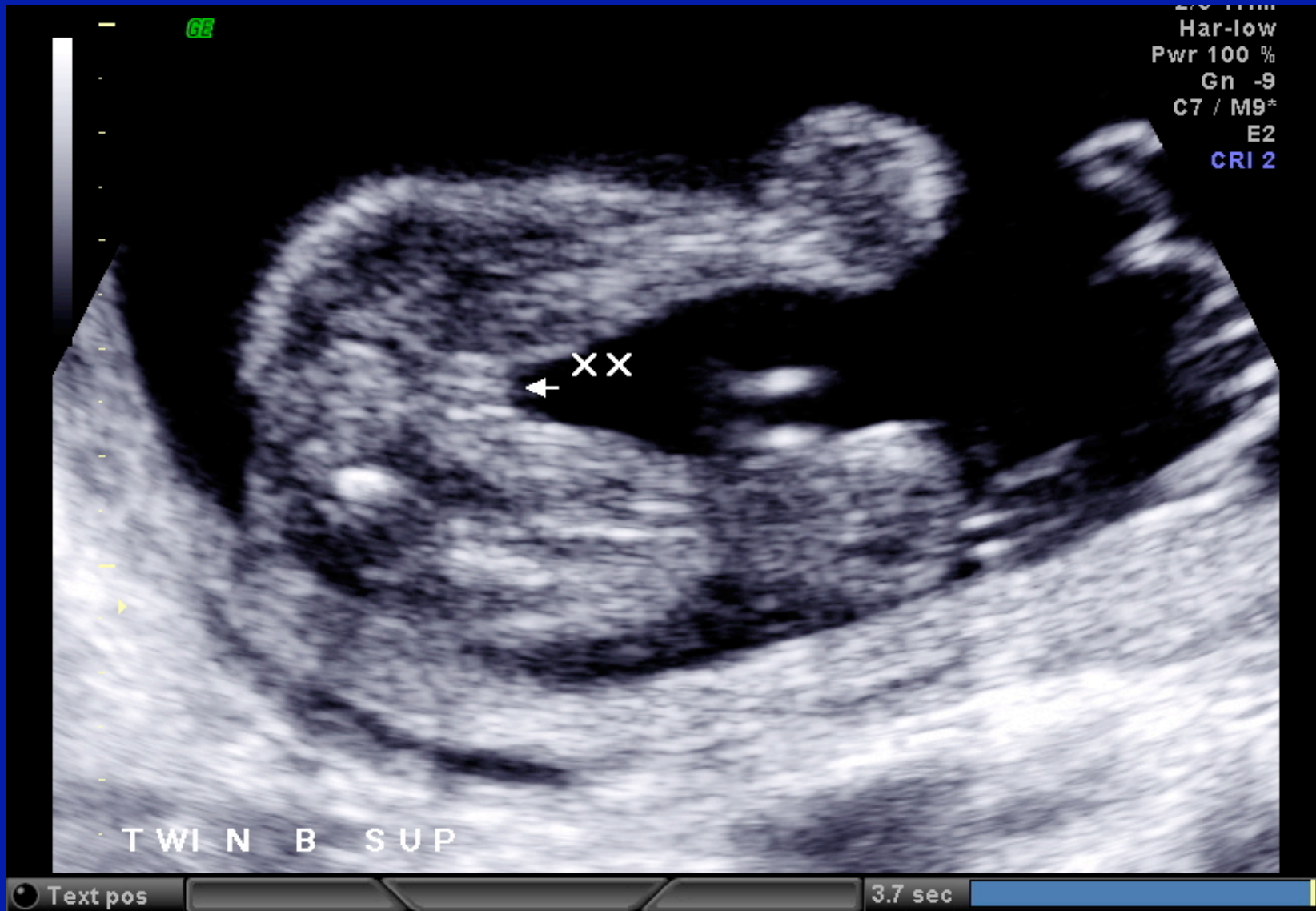


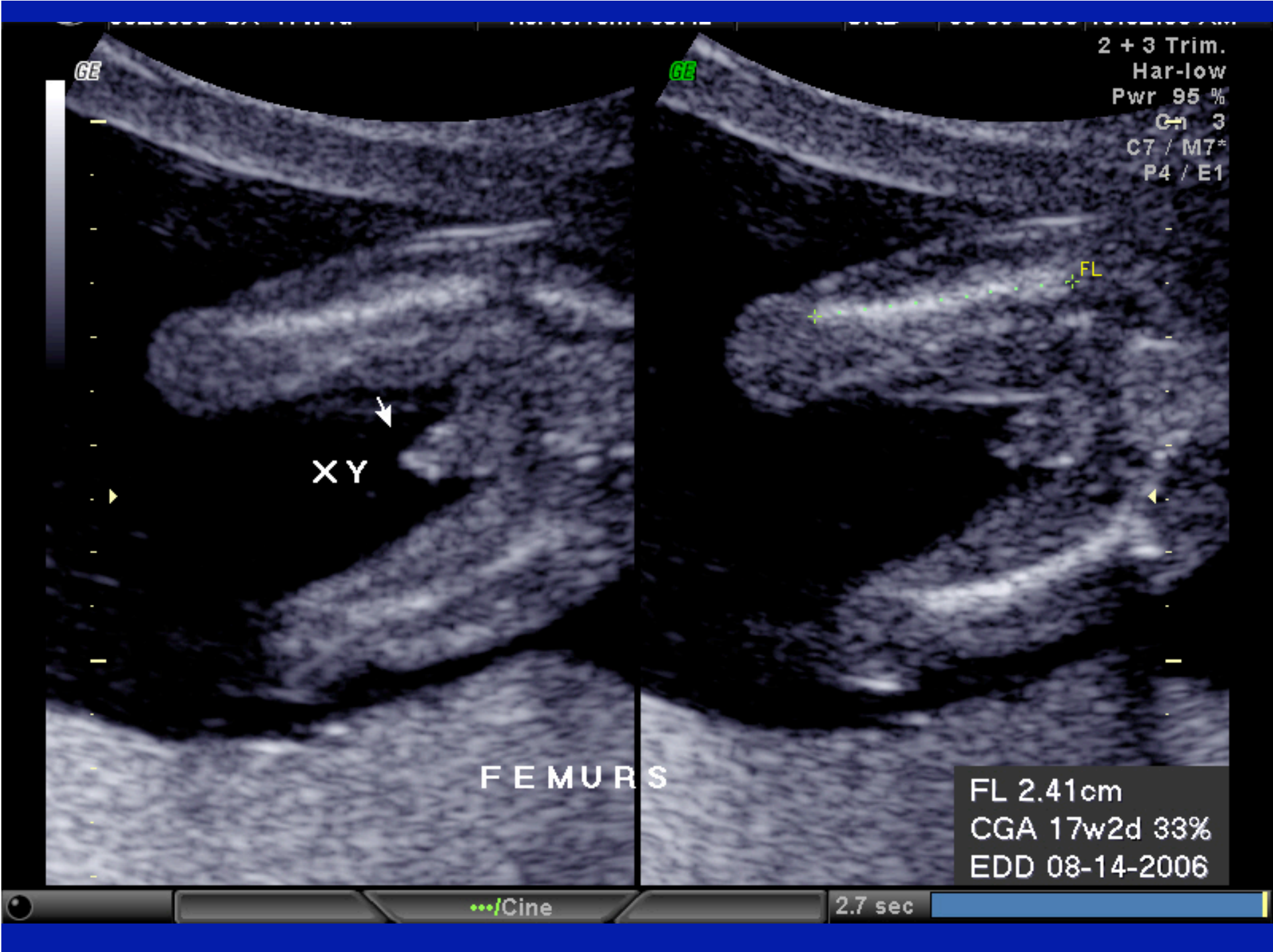
Twin B





















Thanks for listening.