

STAYING CURRENT

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Radiology, CNHS

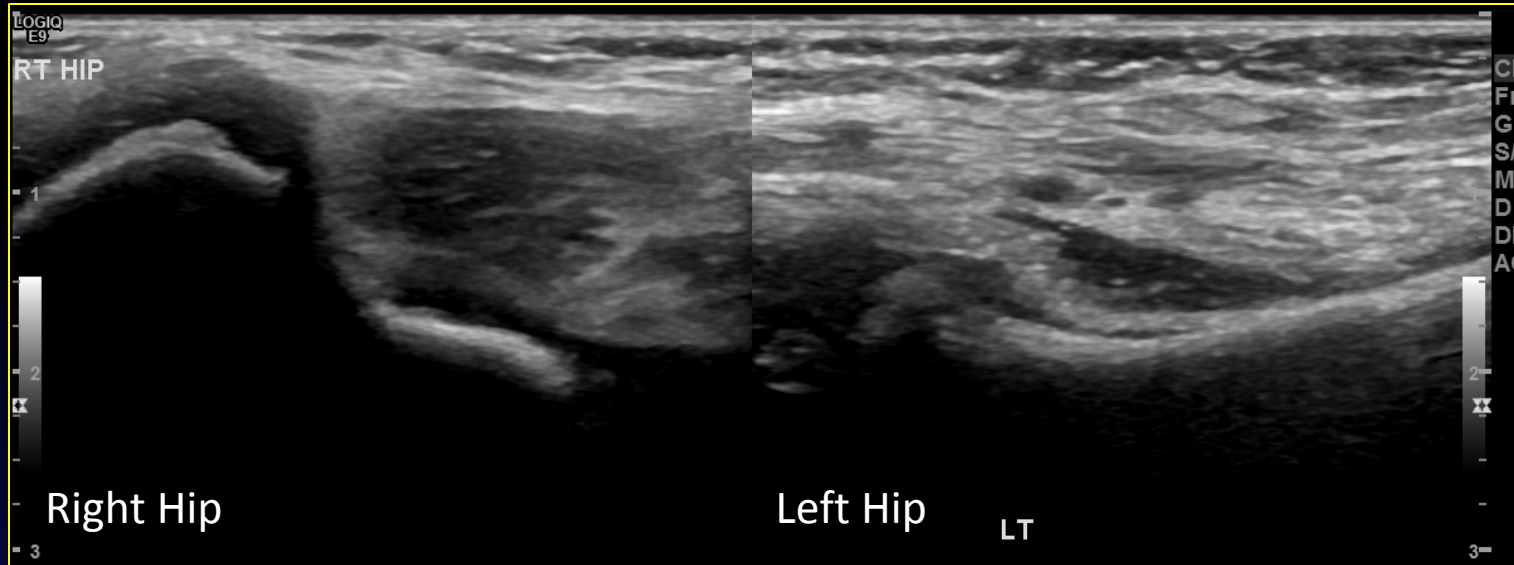
Case 1



Case 1 A: An 8mo female in the ER w/ refusal to bear weight on right leg and inability to extend left knee, need hip ultrasound to evaluate for hip process- tenosynovitis vs septic arthritis.

Plain radiographs not performed.

Case 1 A

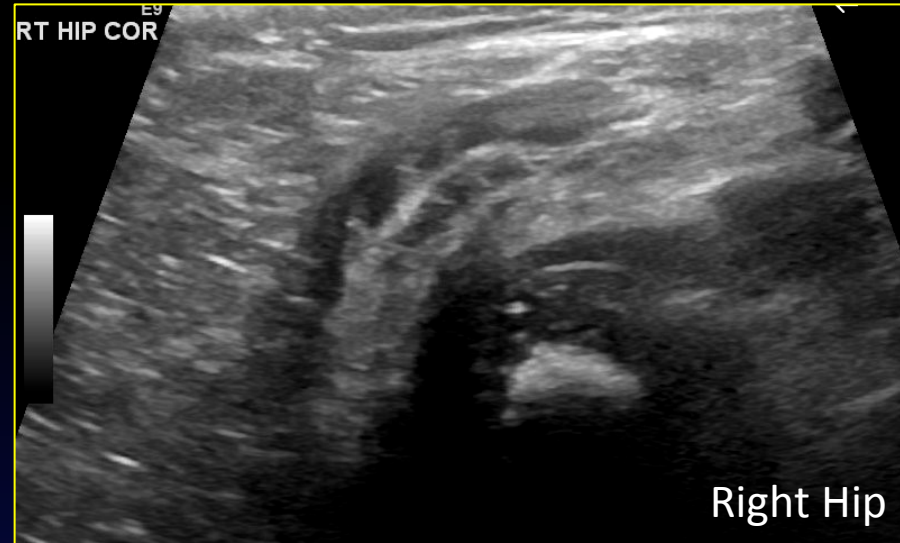


Case 1 A

Q1: What is the most likely diagnosis based on this longitudinal view of both hips side by side?

- a. No hip effusion on either side
- b. Small right hip effusion
- c. Small left hip effusion
- d. Small bilateral hip effusion
- e. Nonstandard views, inadequate study

Case 1 A



Case 1 A

Q2: What is the most likely diagnosis based on these two transverse US images of right hip?

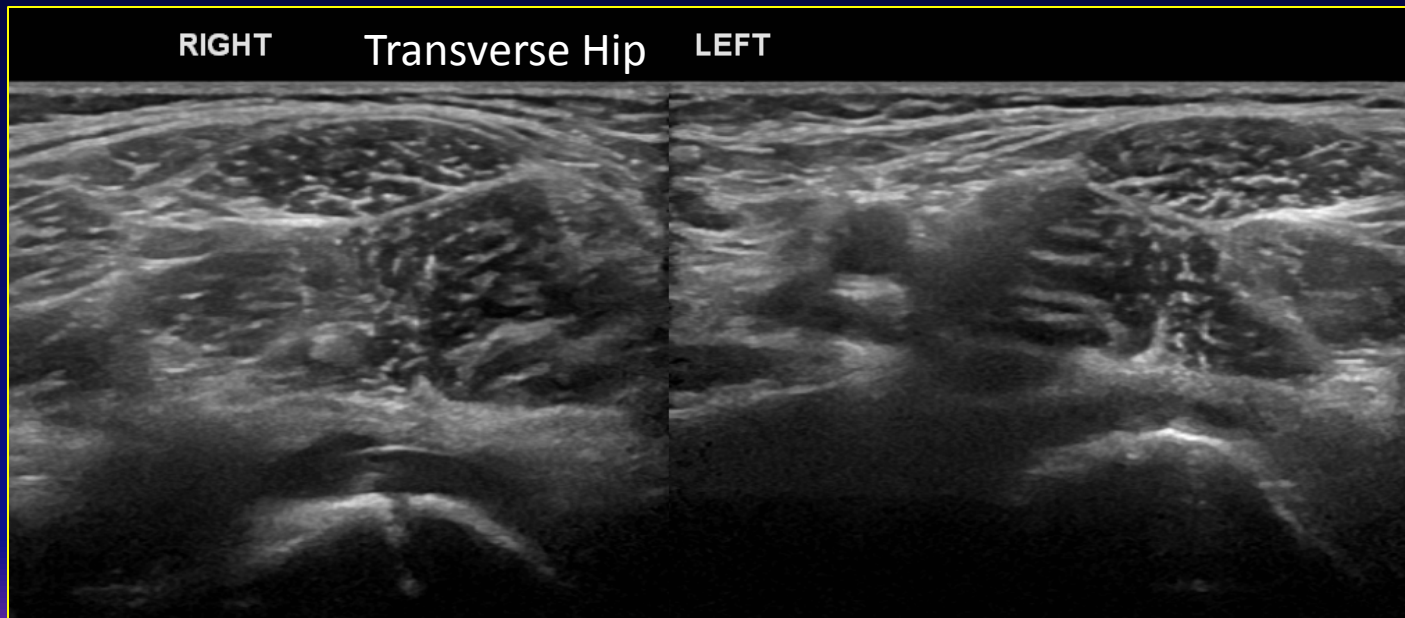
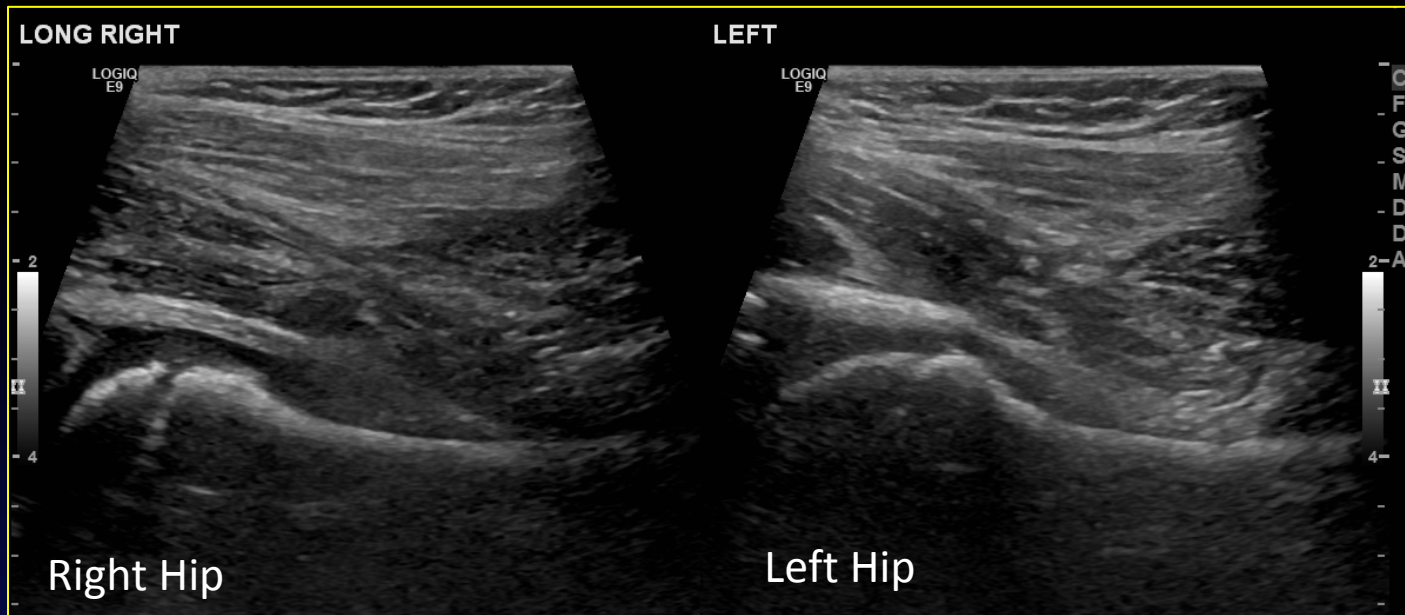
- No effusion
- There is effusion in right hip joint
- Nonstandard views, inadequate study

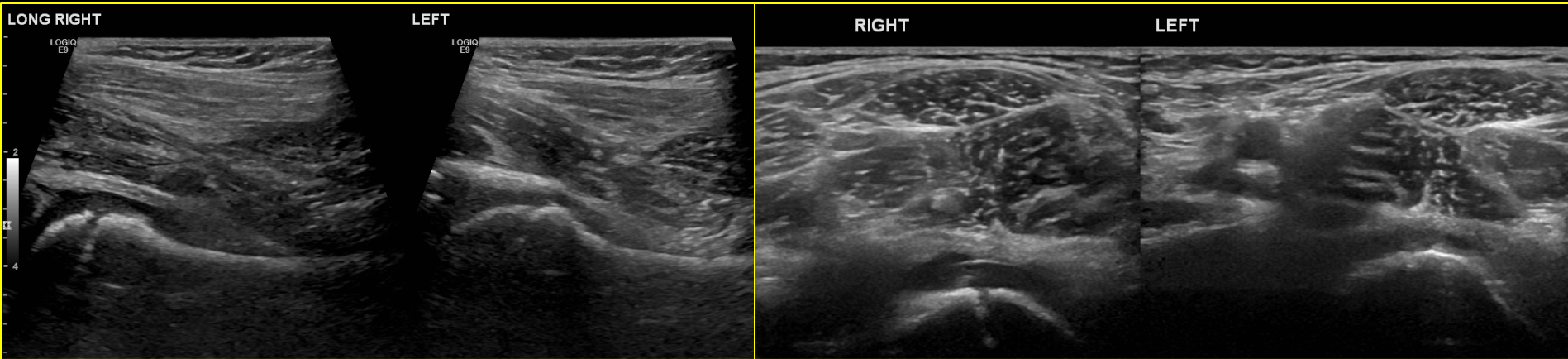


Case 1 B: A 4 y o female in the ER w/ right hip pain since 4 days, need hip ultrasound to evaluate for hip process- effusion vs septic arthritis.

Plain radiographs read as normal.

Case 1 B





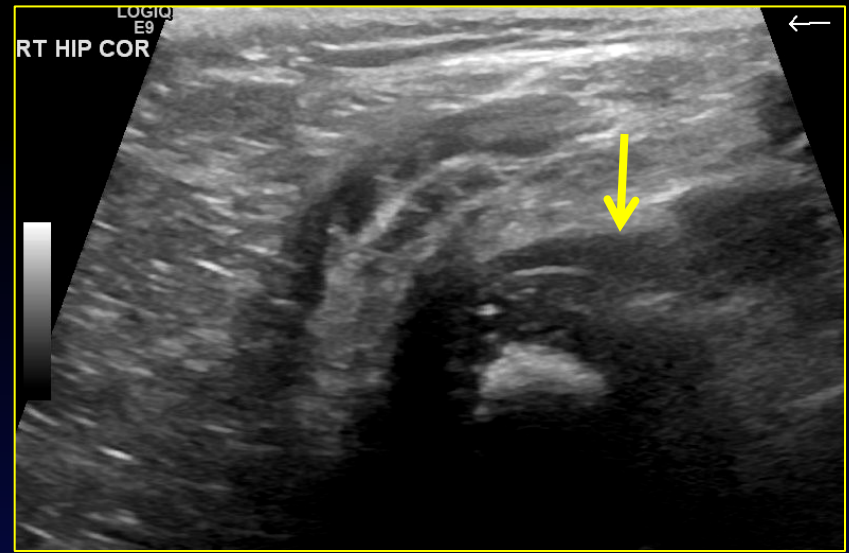
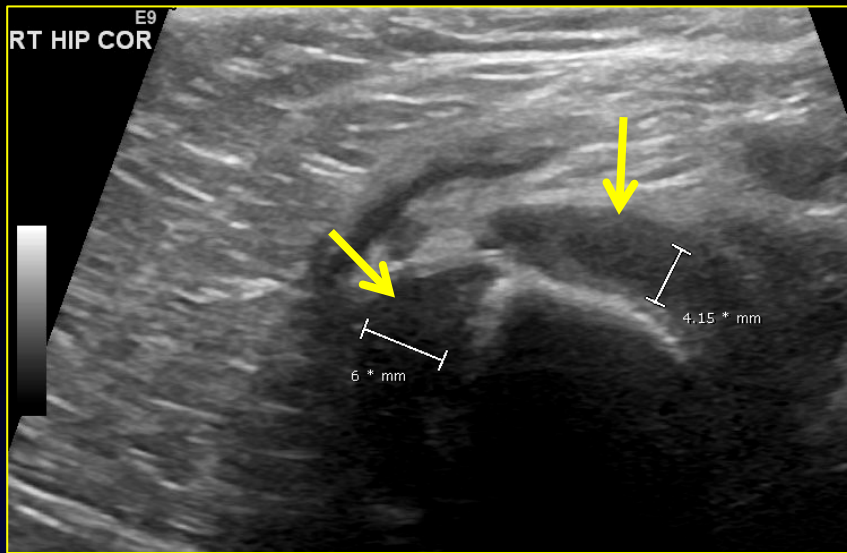
Case 1 B

Q1: What is the most likely diagnosis based on both longitudinal and transverse views of both hips side by side?

- a. No hip effusion on either side
- b. Small right hip effusion
- c. Small left hip effusion
- d. Small bilateral hip effusion
- e. Nonstandard views, inadequate study

Case 1: Answers and discussion on next slide

Case 1 A – initial exam



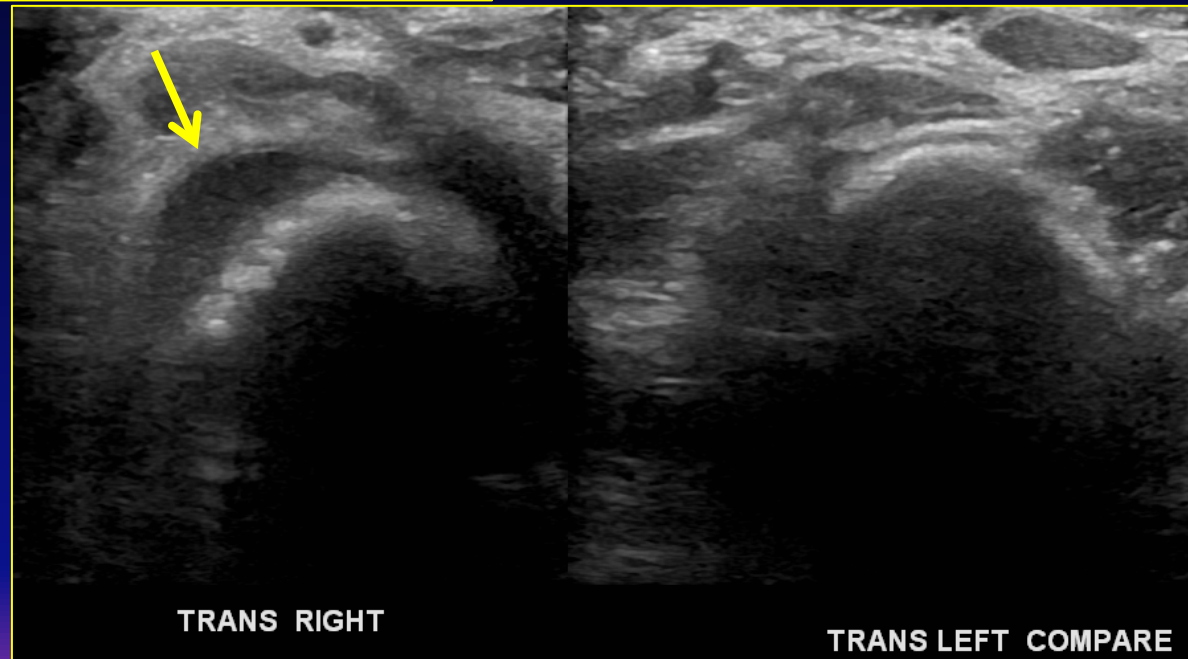
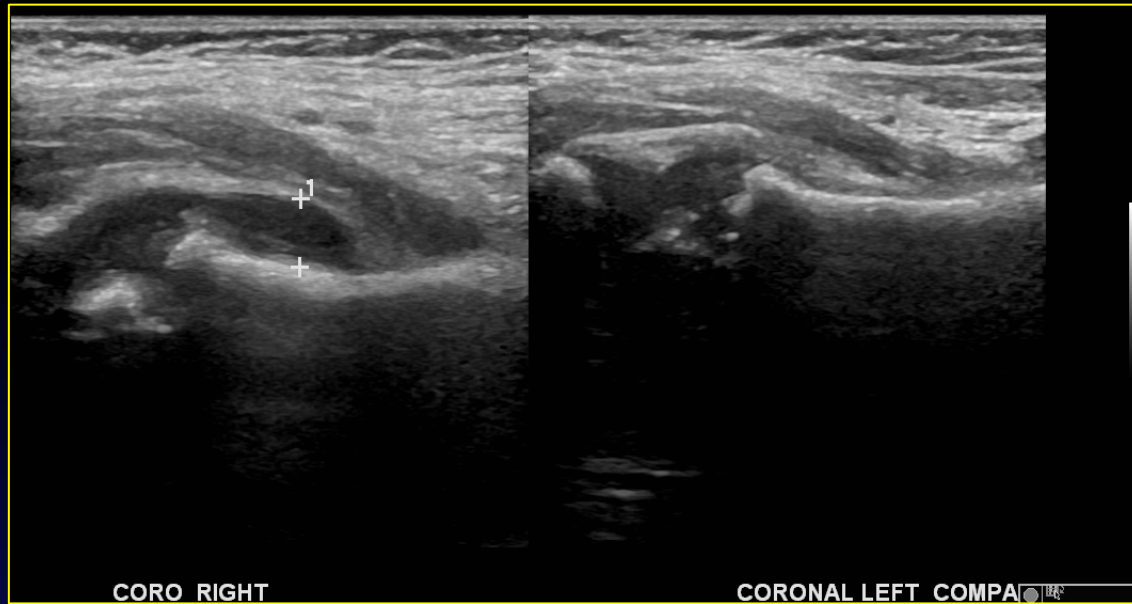
Right Hip Transverse

Case 1 A - Answers : Q1 - e, Q2- b

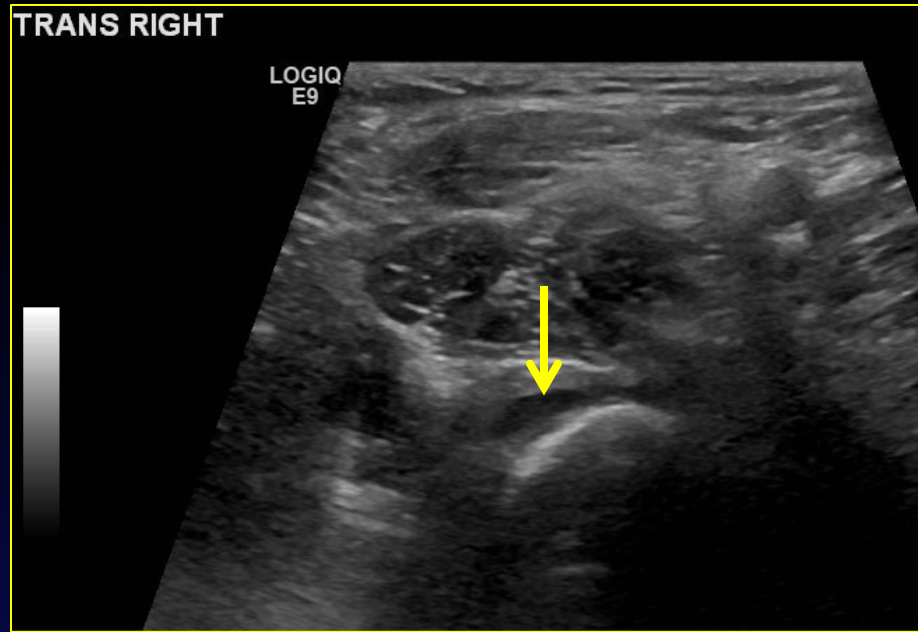
Diagnosis: Right Hip Effusion

Discussion: Initial long images were non standard views. Rt. Hip effusion was retrospectively seen only on transverse images. Pt. was discharged from ER but presented 2 days later when repeat hip US showed obvious effusion.

Case 1 A – repeat US at 2nd visit



Case 1 B

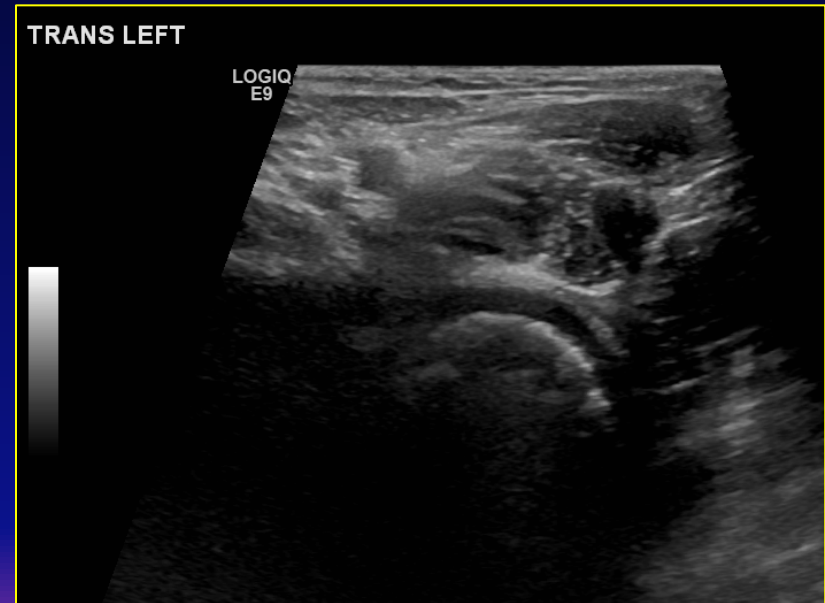
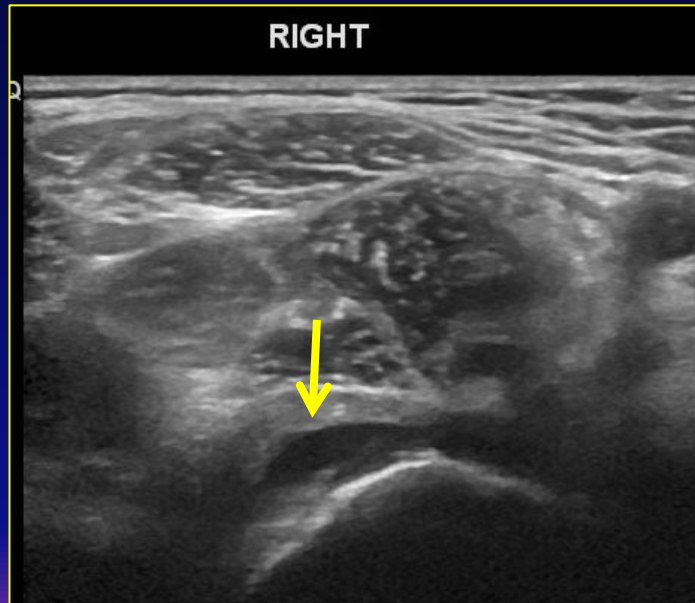
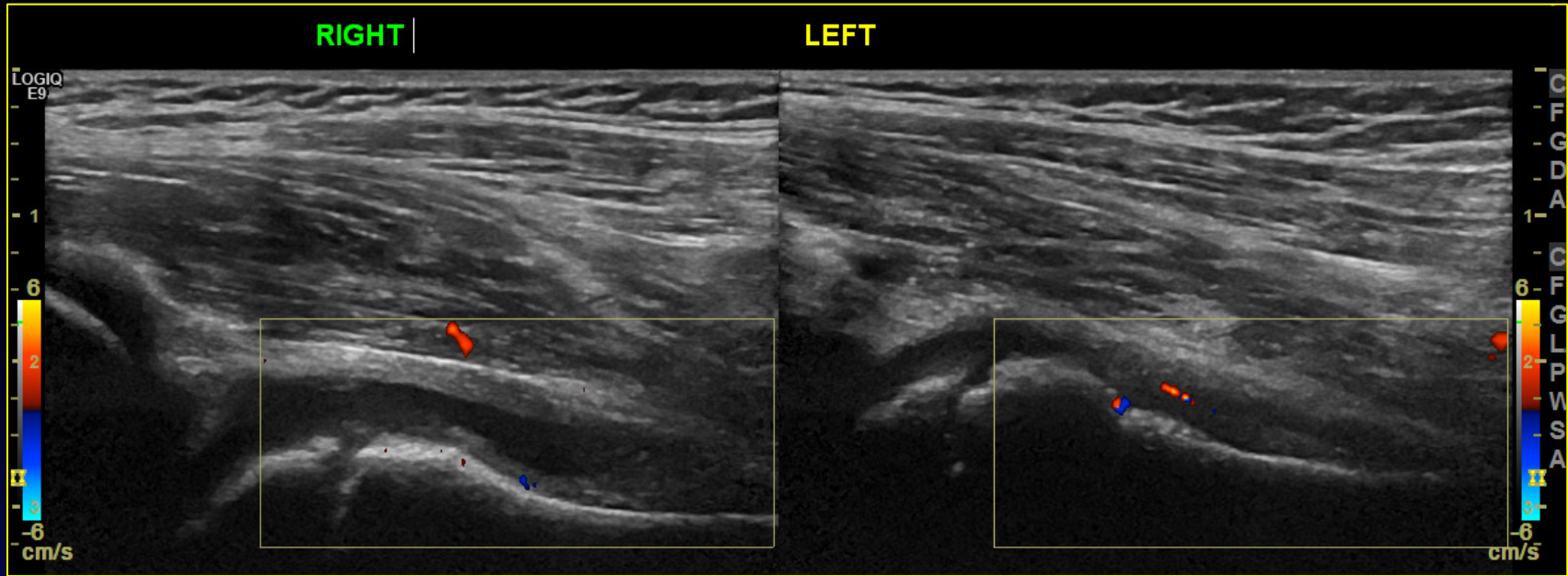


Case 1 B - Answers : Q1 - b

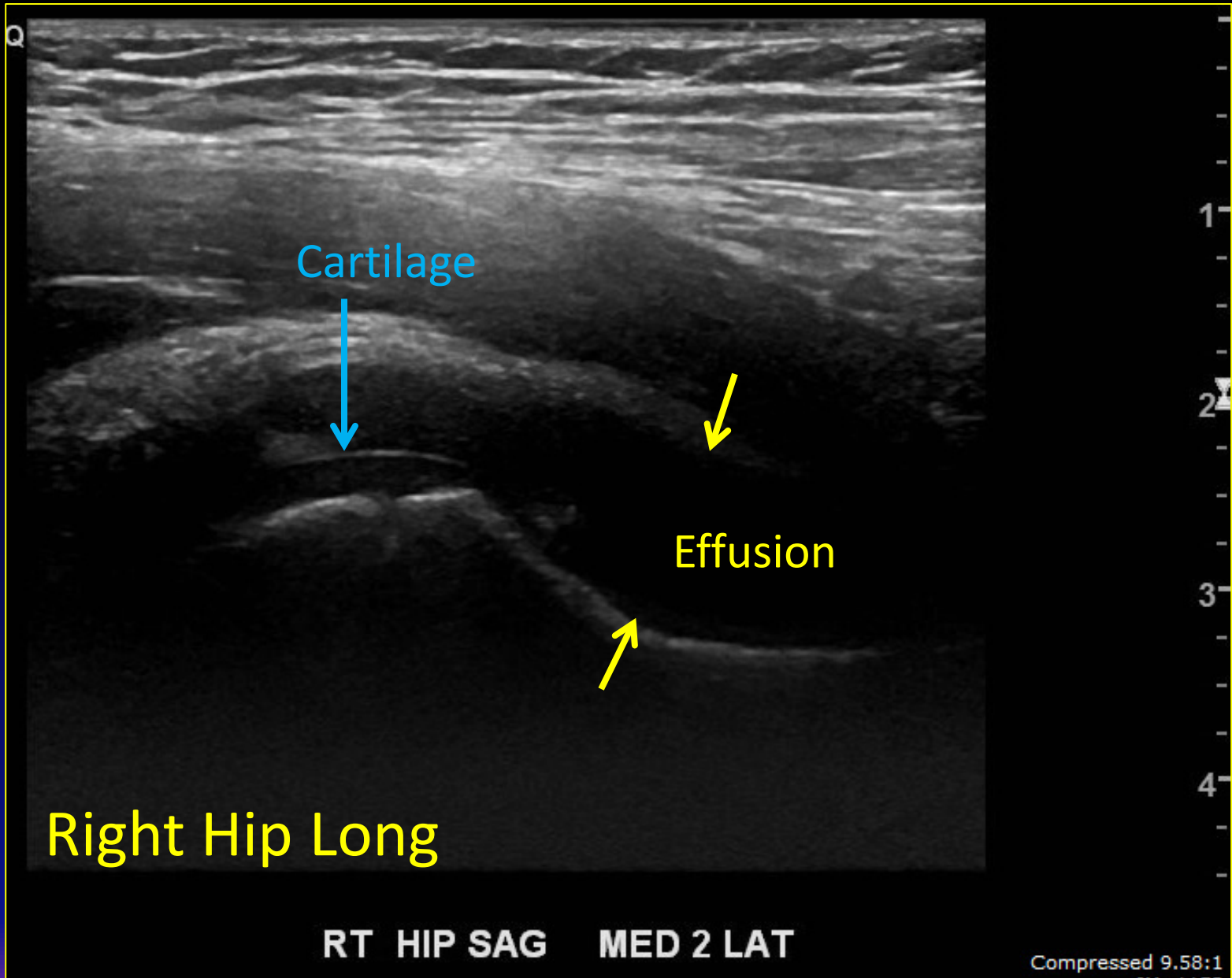
Diagnosis: Right Hip Effusion

Discussion: Initial images were called negative. Upon detailed review of cine sweeps, right hip effusion was seen only on transverse images. Pt. was called back in time from ER and repeat exam showed obvious effusion.

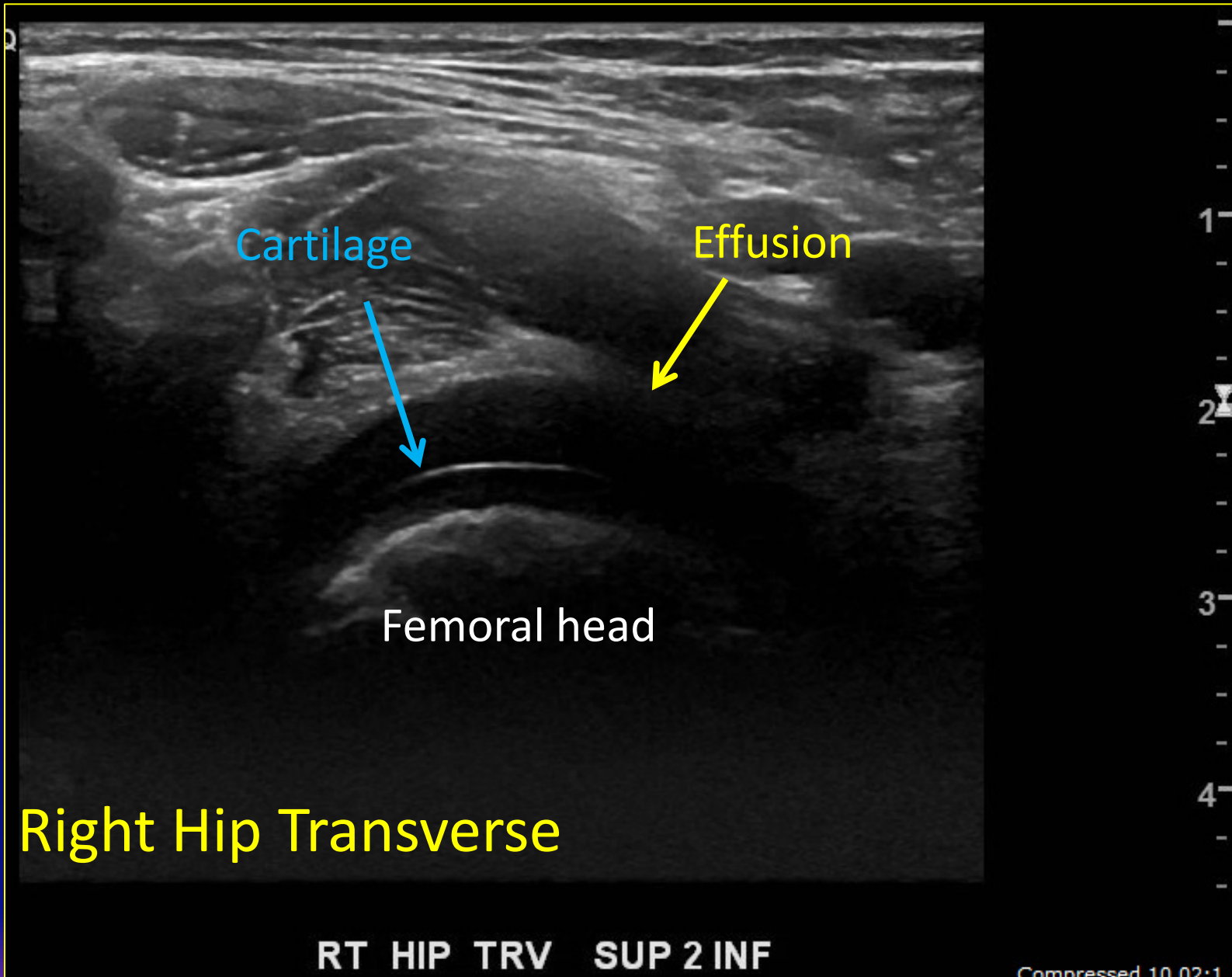
Case 1 B – repeat US at recall in same visit



Companion Normal Case



Companion Normal Case



Case 1 Learning Points:

1. We all know how to diagnose hip effusion on longitudinal images. We must also know **how to recognize hip effusion on transverse views**.
2. Understand the **value of cine sweeps**. These 2 cases are perfect examples when static images did not show hip effusion but cine images showed the effusion very well.
3. When **you see the femoral capital cartilage clearly**, think effusion.
4. Please ensure the use of **correct transducer** which is the linear M6-15 MHz. The linear 9 MHz should be used only when the patient is older and you need more depth.

Case 2

Repetition is the mother of all learning!

This is a repeat series with new cases for the same topic.

Case 2 A:

A 6 week old baby with history of projectile emesis.

Rule out pyloric stenosis

Case 2 A



Case 2 A

Q1: What is the diagnosis based on this longitudinal view of pylorus?

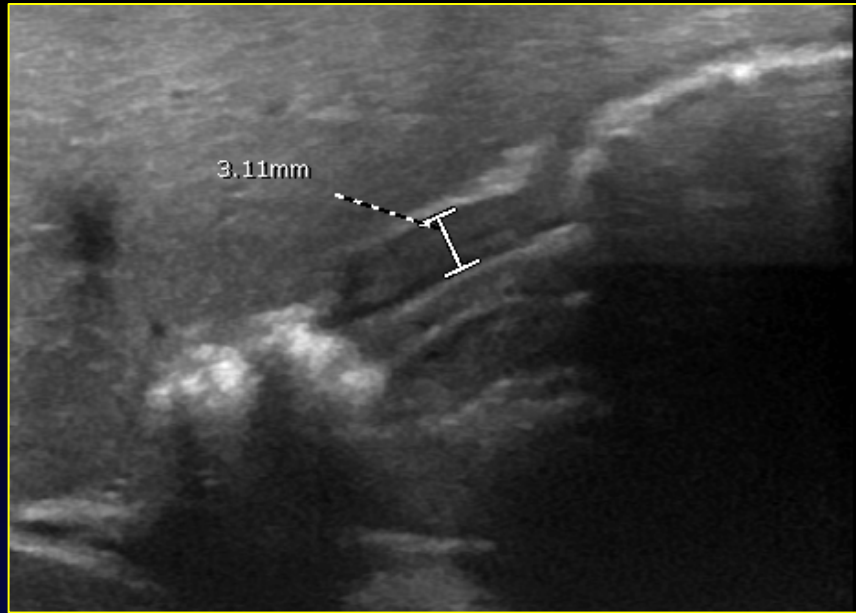
- a. Pylorus over measured
- b. Positive for pyloric stenosis
- c. Equivocal study

Case 2 B:

A 6 week old baby with history of projectile emesis.

Rule out pyloric stenosis

Case 2 B



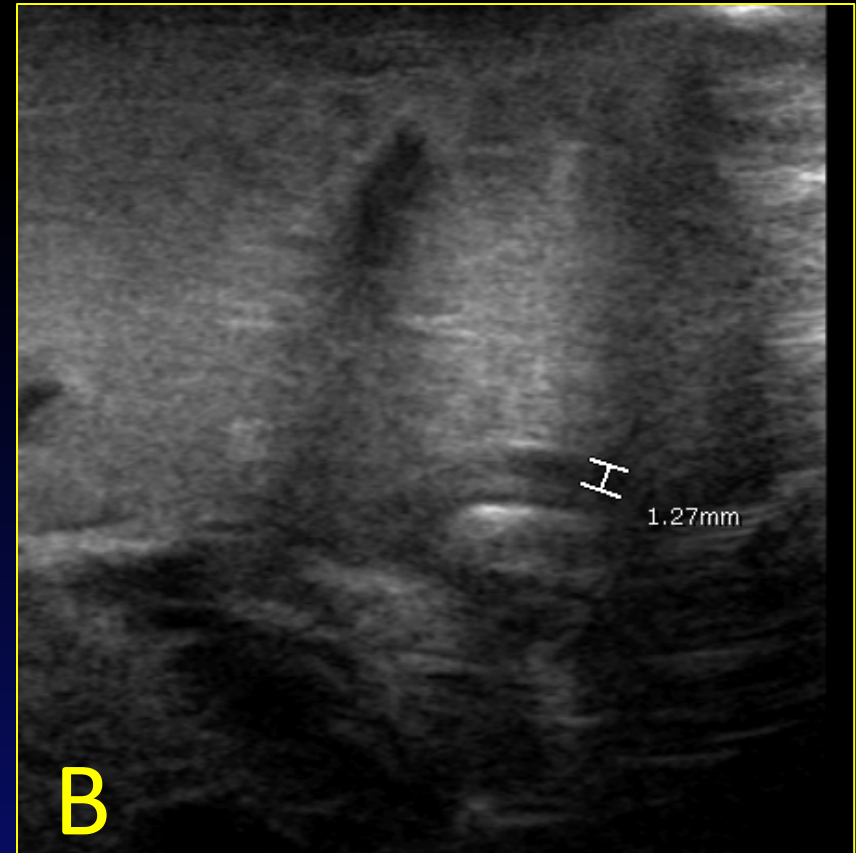
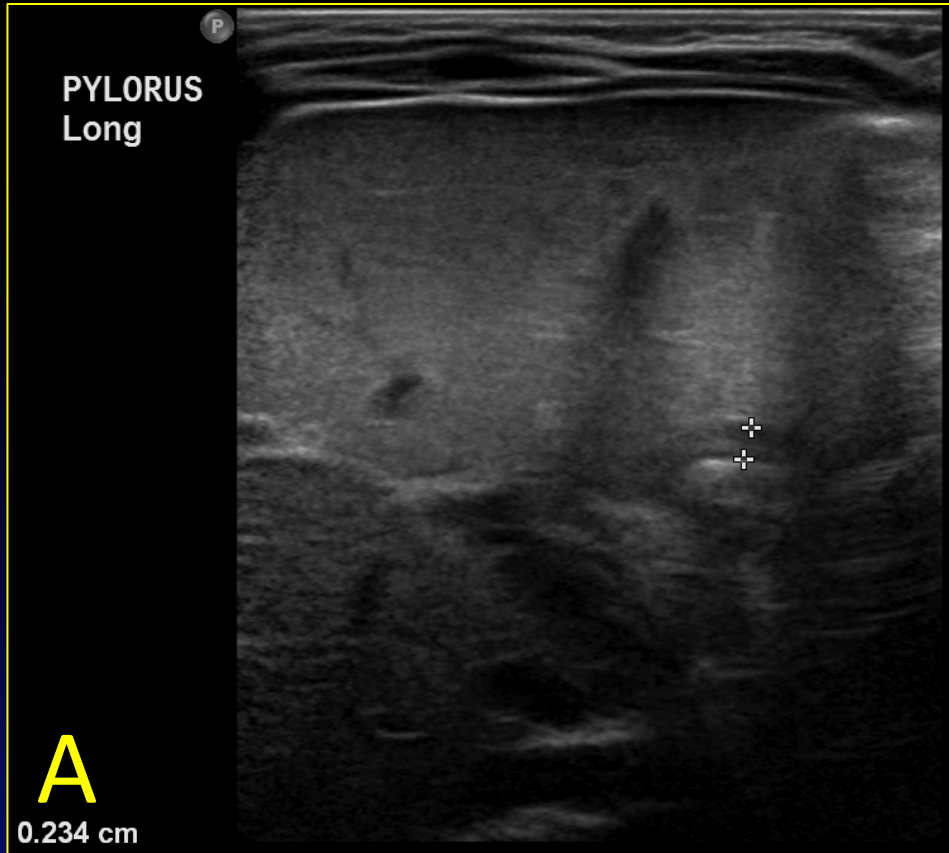
Case 2 B

Q1: What is the diagnosis based on this longitudinal view of pylorus?

- a. Pylorus over measured
- b. Positive for pyloric stenosis
- c. Equivocal study

Case 2: Answers and discussion on next slide

Case 2 A

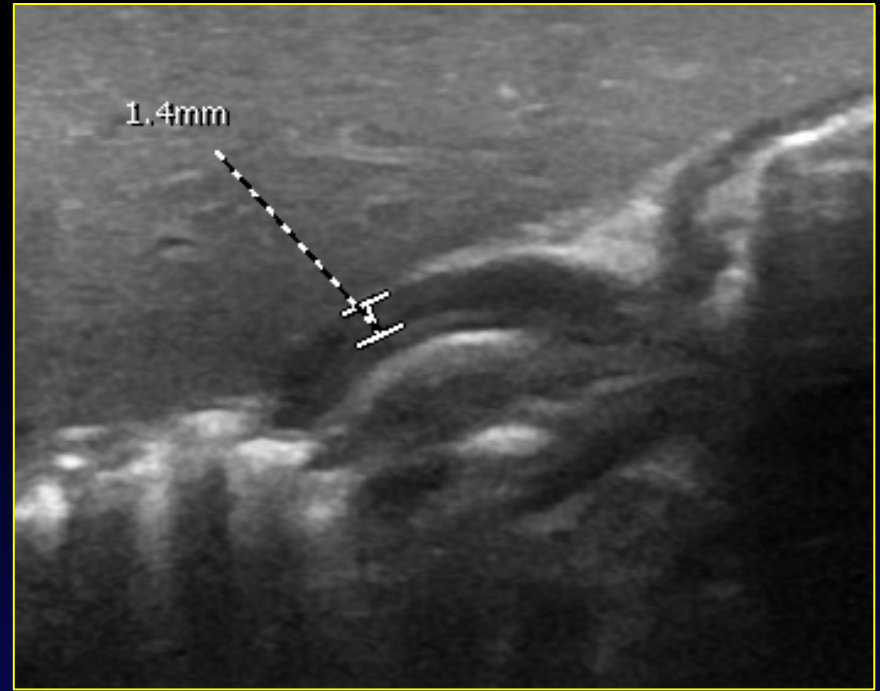
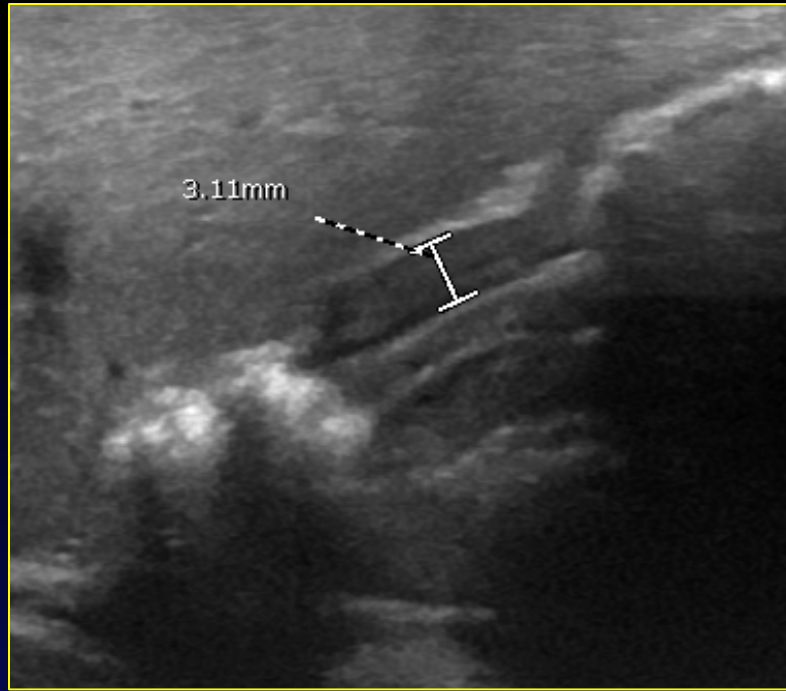


Case 2 A - Answers : Q1 - a
Diagnosis: Normal pylorus

Image A – pylorus over measured

Image B – Correctly measured. Hyperechoic submucosa excluded.

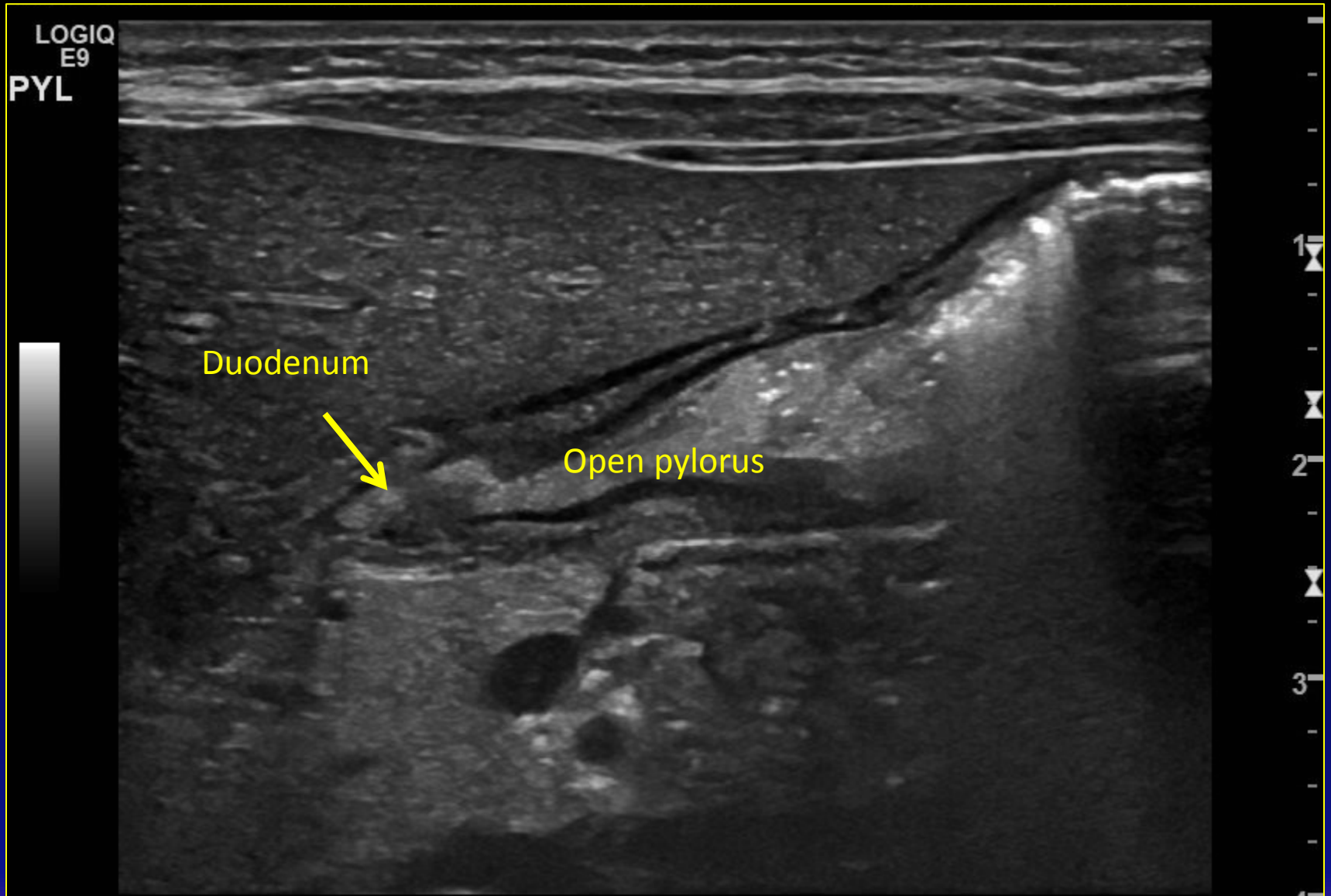
Case 2 B



Case 2 B - Answers : Q1 - a
Diagnosis: Normal pylorus

Image A – pylorus over measured, study read as positive for pyloric stenosis. Sx op notes – very thinned pylorus
Image B – Correctly measured, in retrospect.

Companion Normal Case



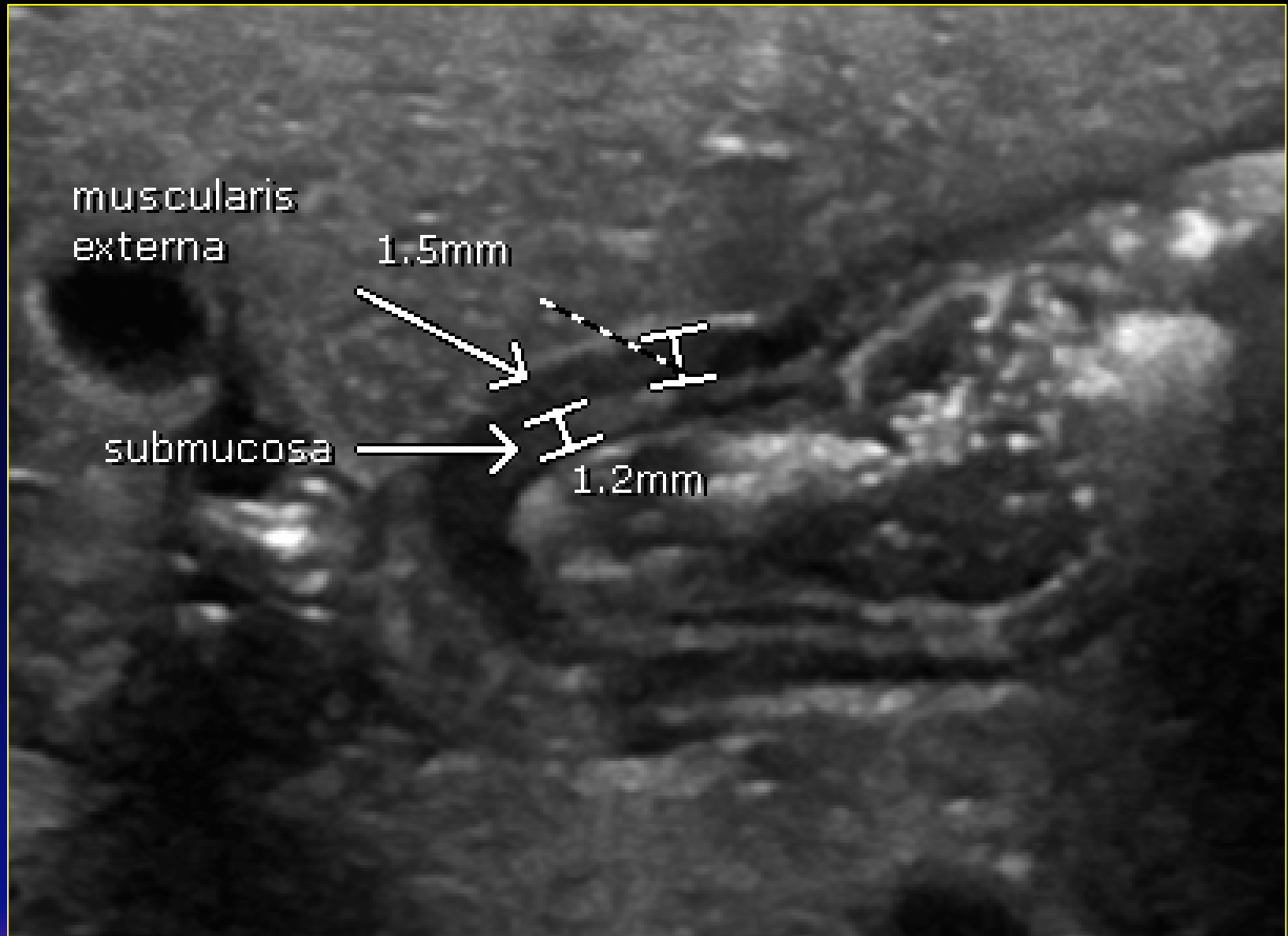
Companion Normal Case



Companion Normal Case



Companion Normal Case



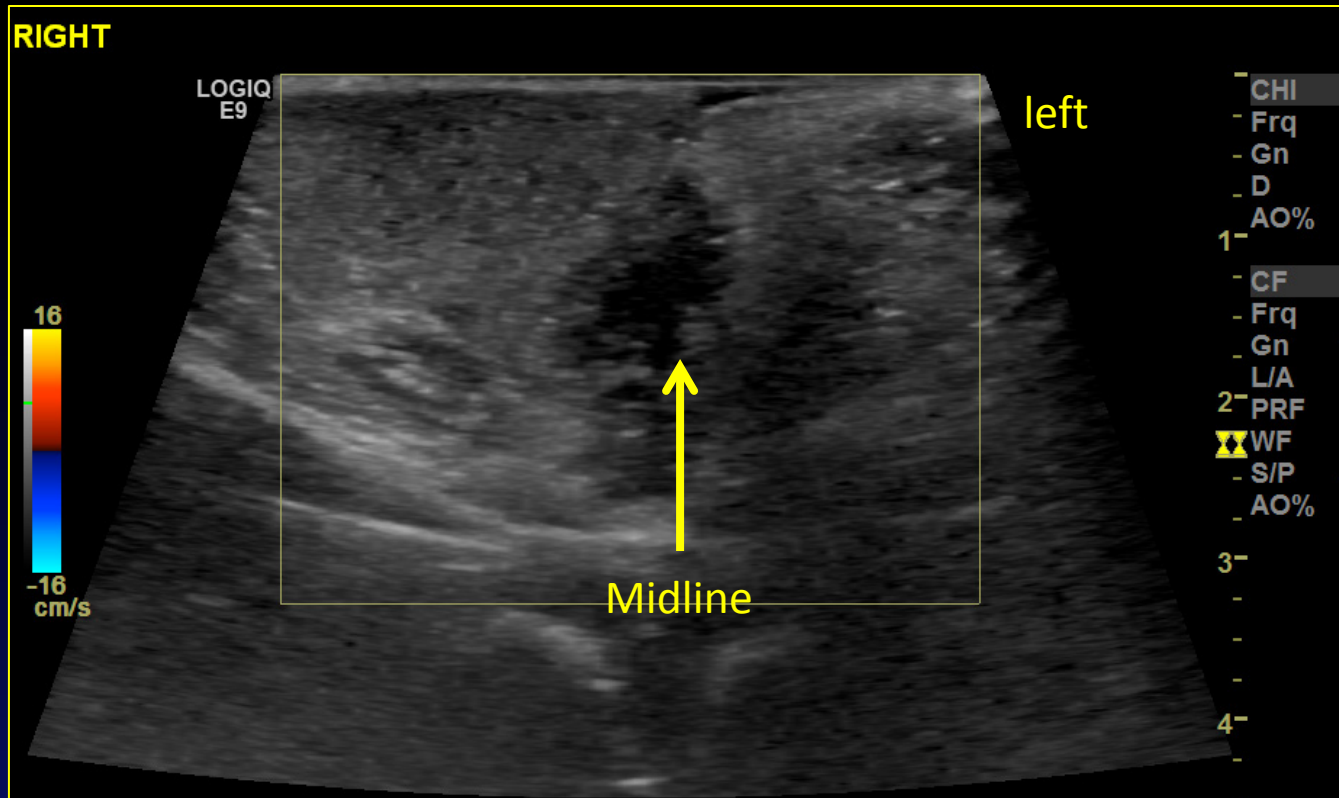
Case 2 Learning Points:

1. For some reason, we continue to measure the pylorus incorrectly. This is **a huge problem**. Regardless of how the sonographer has measured the pylorus, it is the ultimate responsibility of the radiologist to measure and report it correctly.
2. Recognize **muscularis externa as the outermost hypoechoic layer** that should be measured for pyloric muscle thickness.
3. Differentiate this from submucosa which is the thick echogenic layer deep to muscularis externa. **Submucosa should be excluded** while measuring muscle thickness.
4. All textbooks recommend measuring the pylorus in transverse section, but in our experience, **measurements are easier and more accurate in longitudinal sections**.

Case 3

Case 3: A 7-year-old young girl presents with labial asymmetry, right side larger than the left. No trauma or infection. Evaluate for underlying vascular malformation.

Case 3

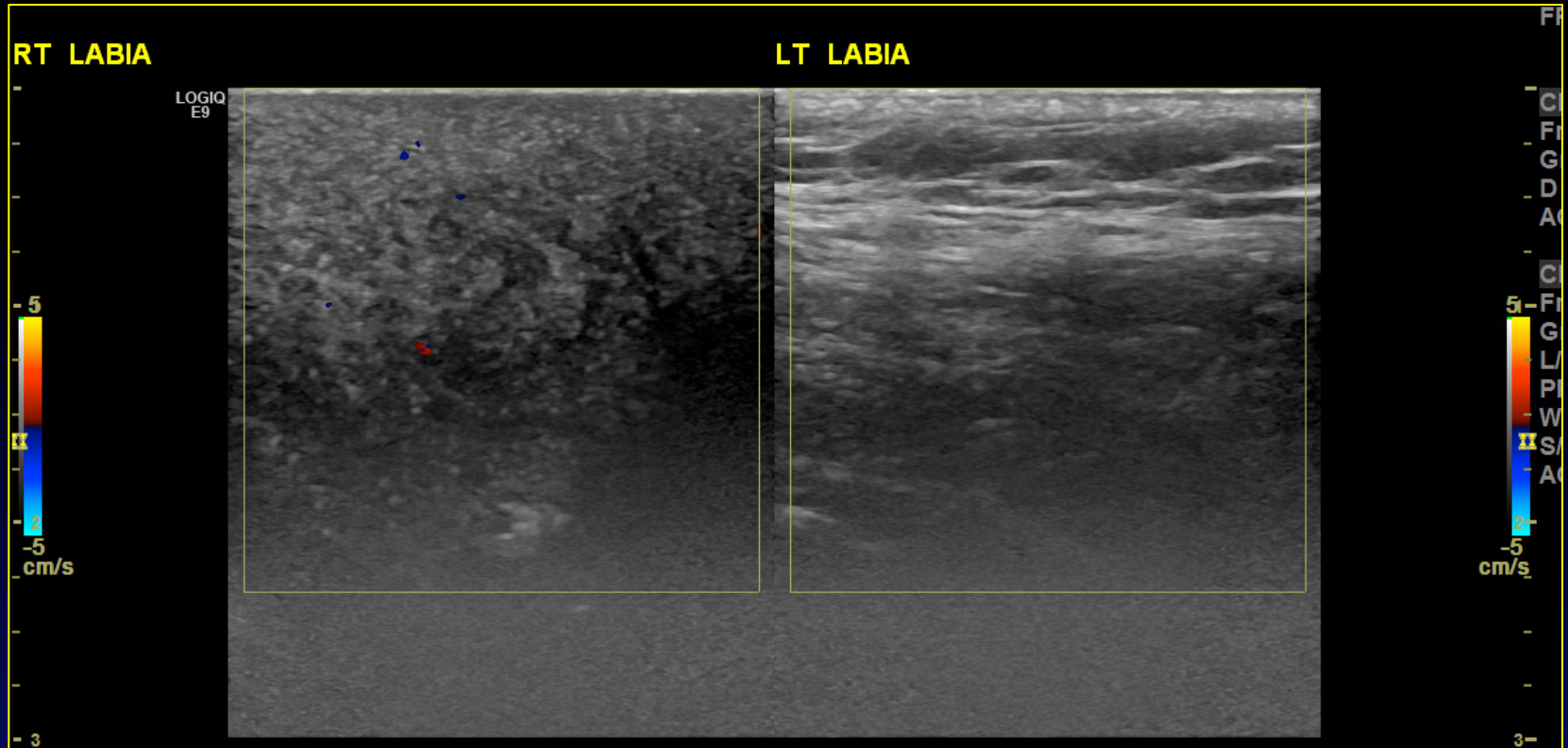


Case 3

Q1: What is the diagnosis based on this transverse view of labia?

- Lipoma rt. labium
- CALME right side
- Lymphatic malformation rt. labium

Case 3



Case 3

Q2: What is the diagnosis based on this long view of both labia?

- a. Lipoma rt. labium
- b. CALME right side
- c. Lymphatic malformation rt. labium

Case 3: Answers and discussion on next slide

Case 3 Answers : Q1- b, Q2 - b

Diagnosis: CALME

(Childhood asymmetrical labium majus enlargement)

US Findings: Asymmetrically enlarged right labium majus with diffuse proliferation of what appears to be fatty tissue within. No evidence of hernia or vascular malformation or other mass lesion.

Management: Conservative

Case 3 Learning point:

1. With a history of **painless enlargement of labium in a prepubescent girl**, consider the diagnosis of CALME
2. Sonographic findings include-
Heterogeneous echotexture of enlarged labium
Lack of a defined mass
Increased vascularity may or may not be seen
3. Almost always, the **diagnosis is made clinically** and US helps to exclude underlying mass/ vascular malformation

Thank you!

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