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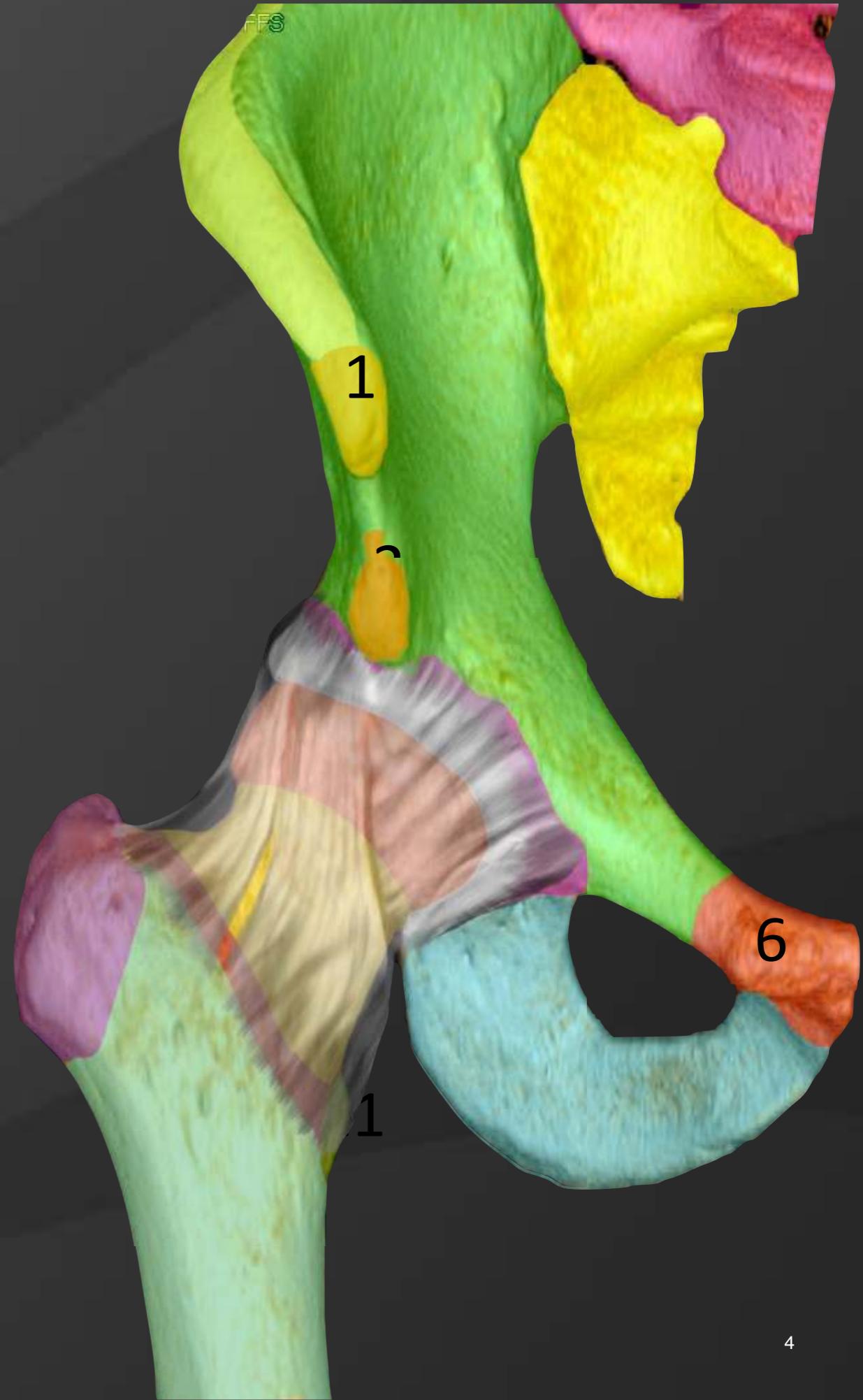
# The “12 point” hip ultrasound exam

1. The femoral/acetabular hip joint
2. Iliopsoas tendon
3. Greater trochanter
4. Piriformis
5. Adductor tendons
6. SI joints

Two views of the above structures plus US guided approaches.

# Anterior Hip Anatomy

1. ASIS
  2. AIIS
  3. Acetabulum
  4. Labrum
  5. Pectineal Line
  6. Pubic Symphysis
  7. Femoral Head
  8. Femoral Neck
  9. Inter-trochanteric Line
  10. Greater Trochanter
  11. Lesser Trochanter
  12. Iliofemoral Ligament  
(Capsule)



# Anterior Hip Anatomy

- Patient Position
  - Leg straight
    - Vascular structures are located more anterior medial
  - Leg externally rotated
    - Vascular structures are located more anterior lateral

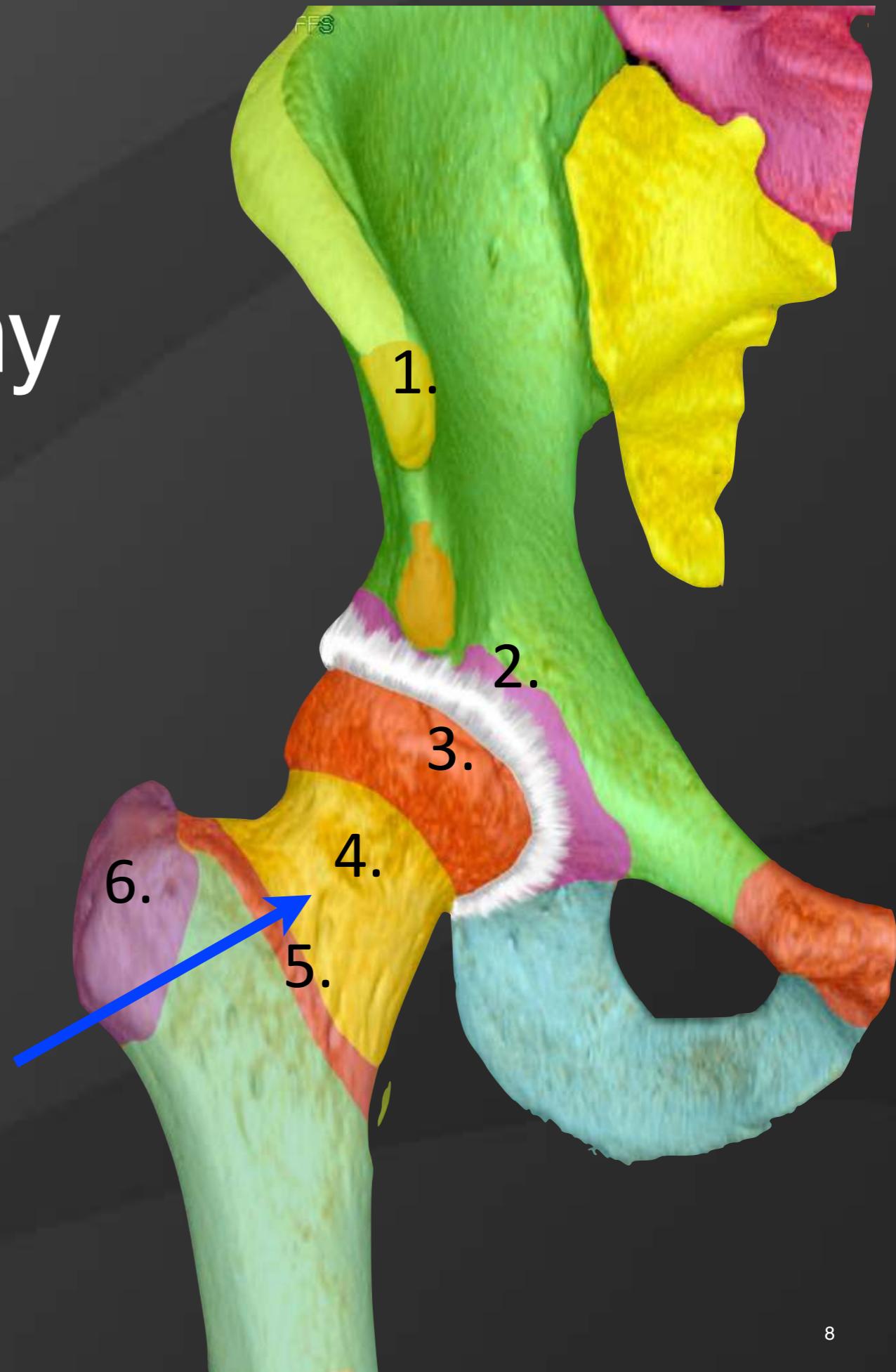


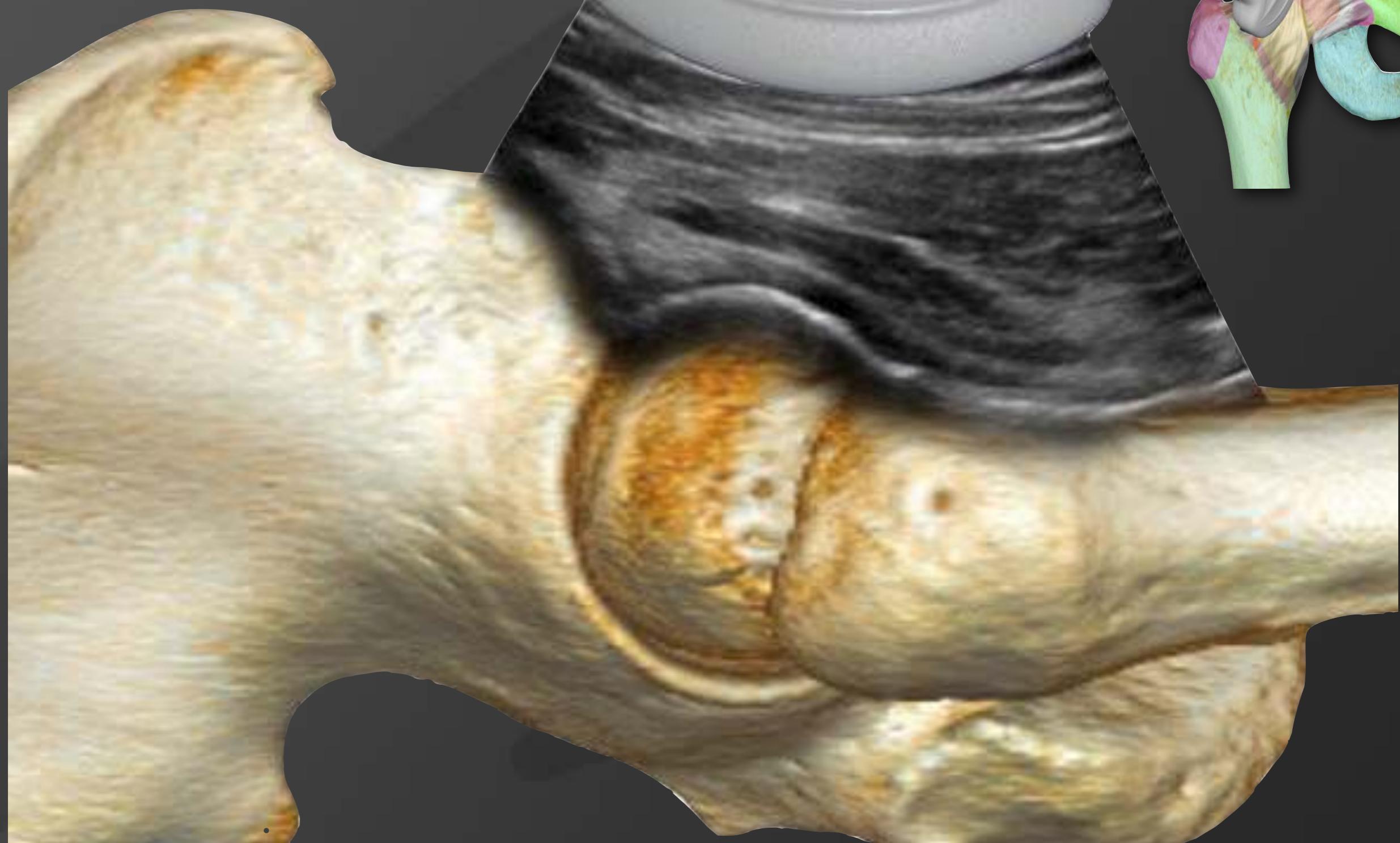




# Hip Injection Anatomy

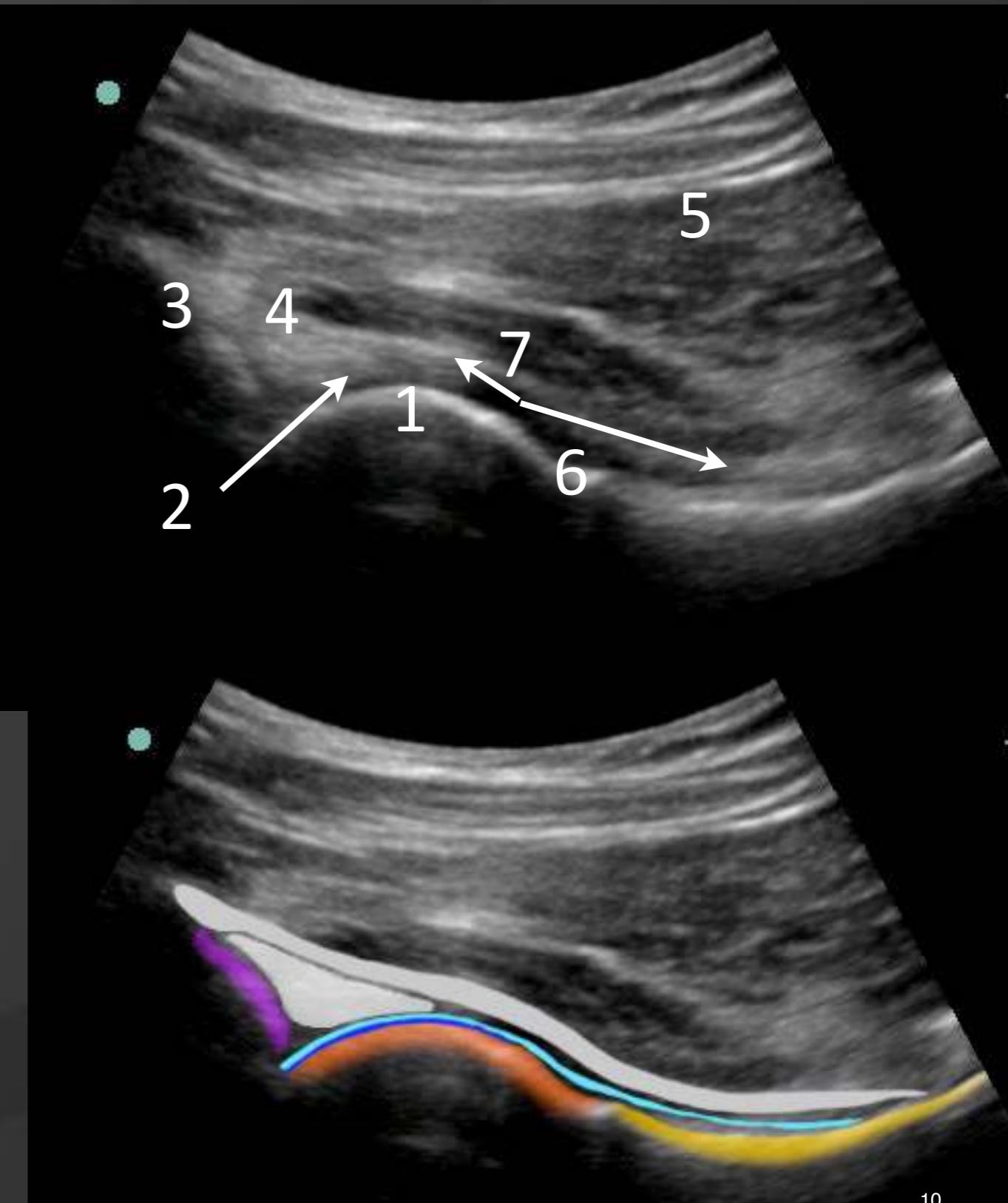
1. ASIS
2. Acetabulum
3. Femoral Head
4. Femoral Neck
5. Intertrochanteric Line
6. Greater Trochanter



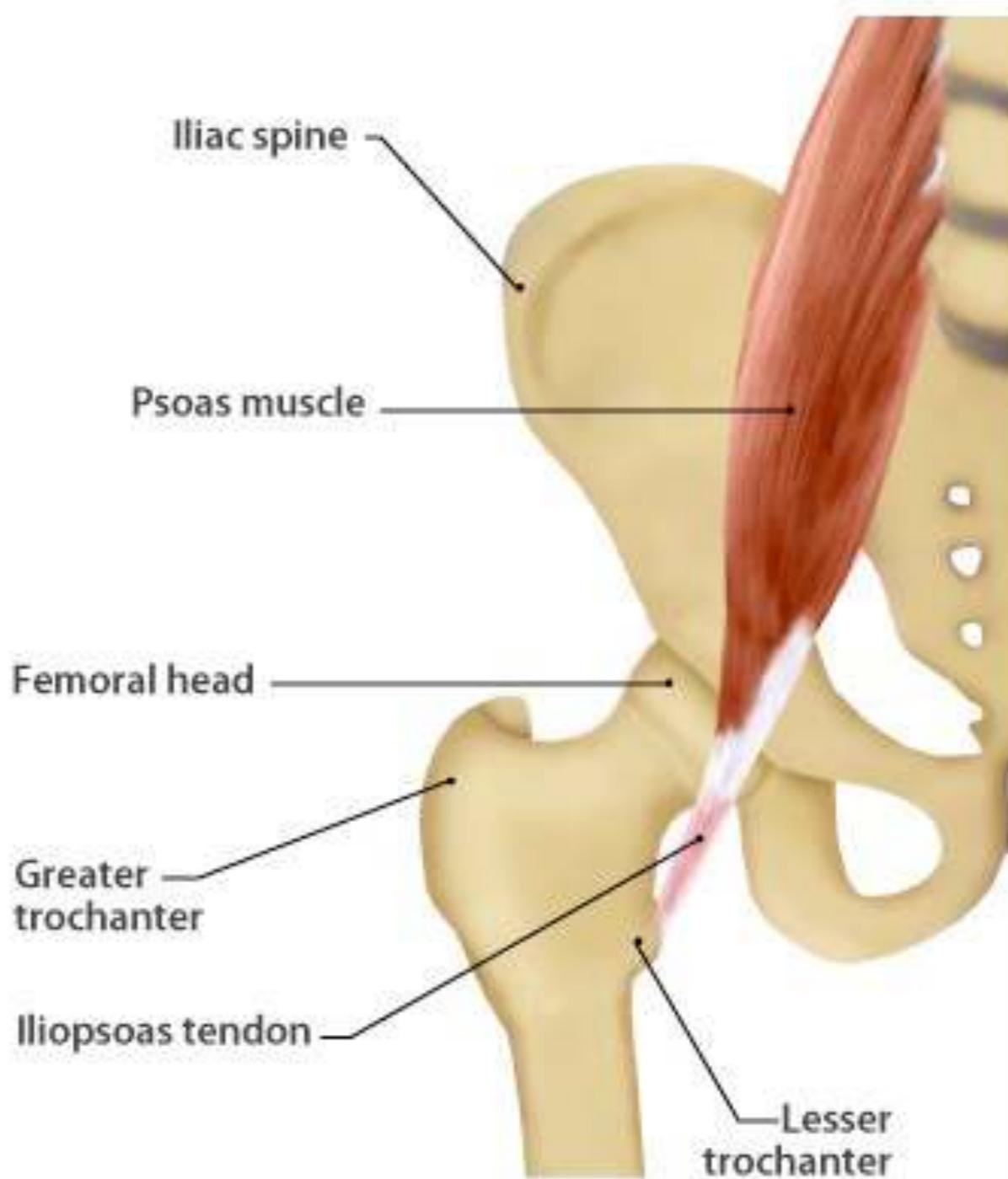


# Anterior Hip Images

1. Femoral Head
2. Articular Cartilage  
(blue)
3. Acetabulum
4. Labrum
5. Overlying Muscles
6. Femoral Neck
7. Iliopsoas tendon



# Iliopsoas Tendinitis

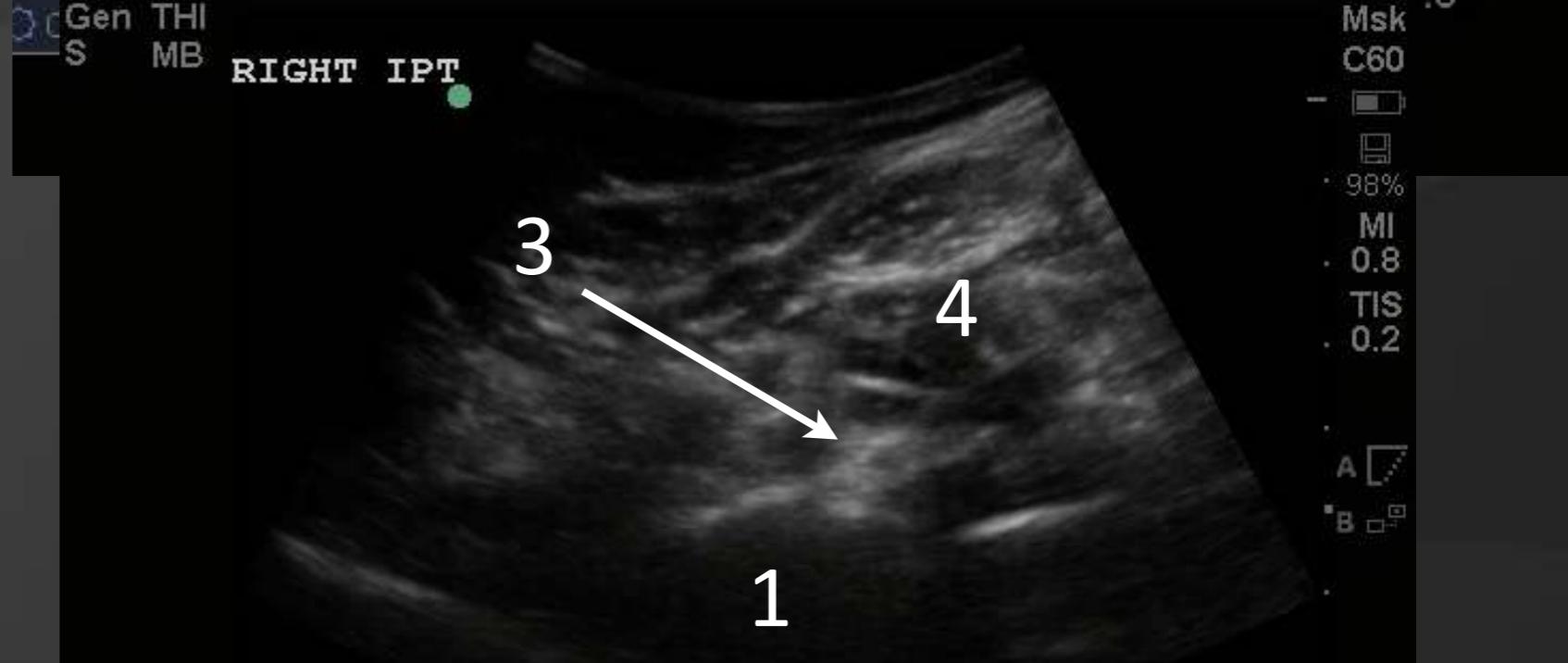
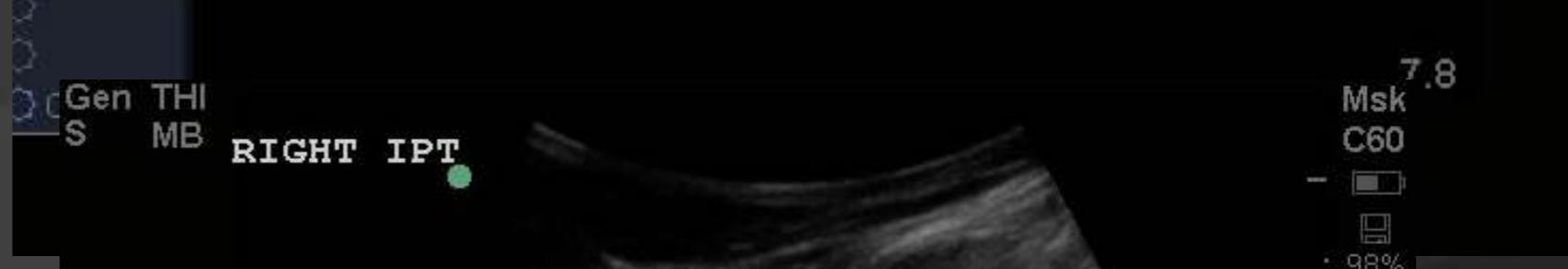
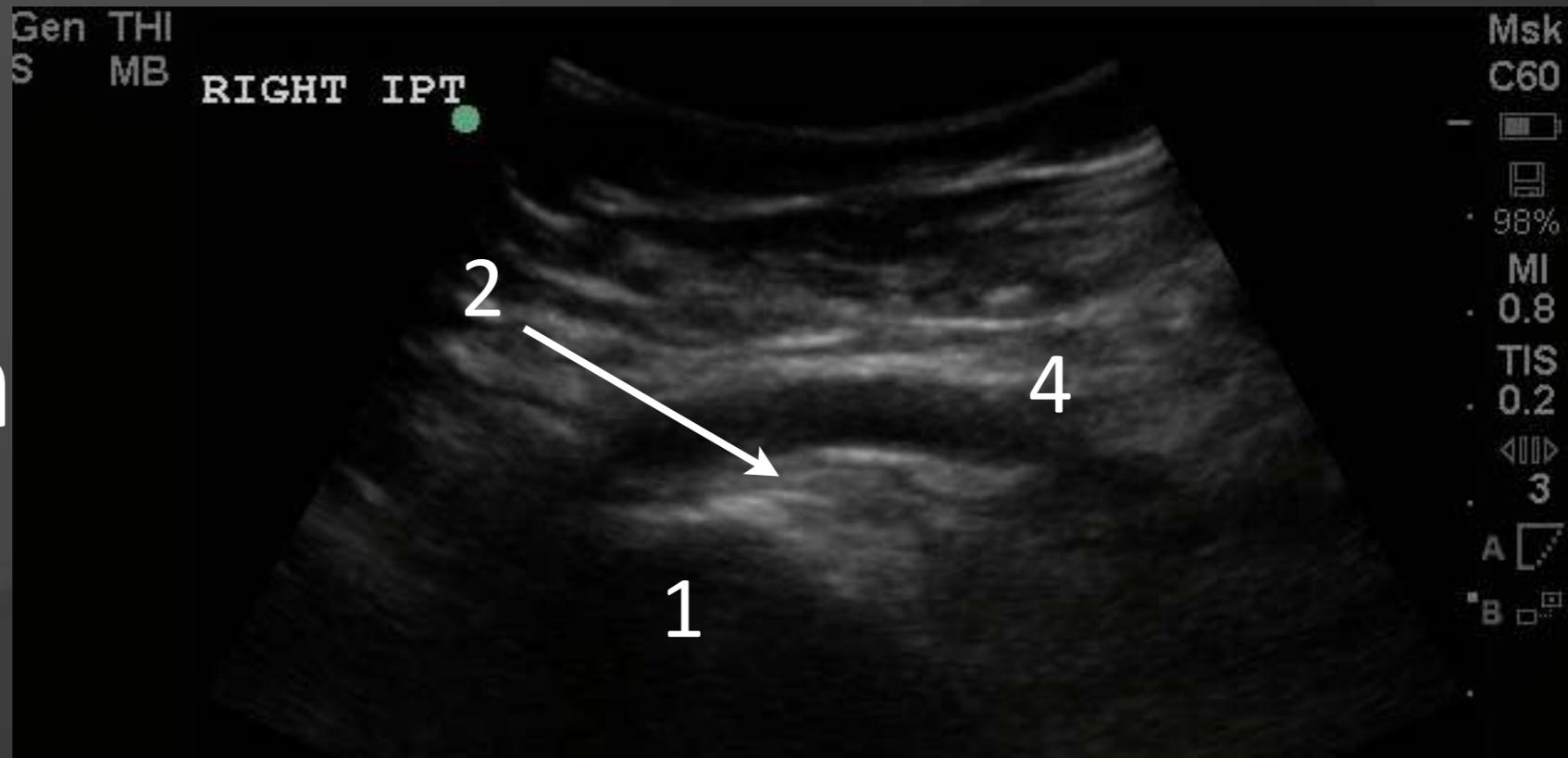




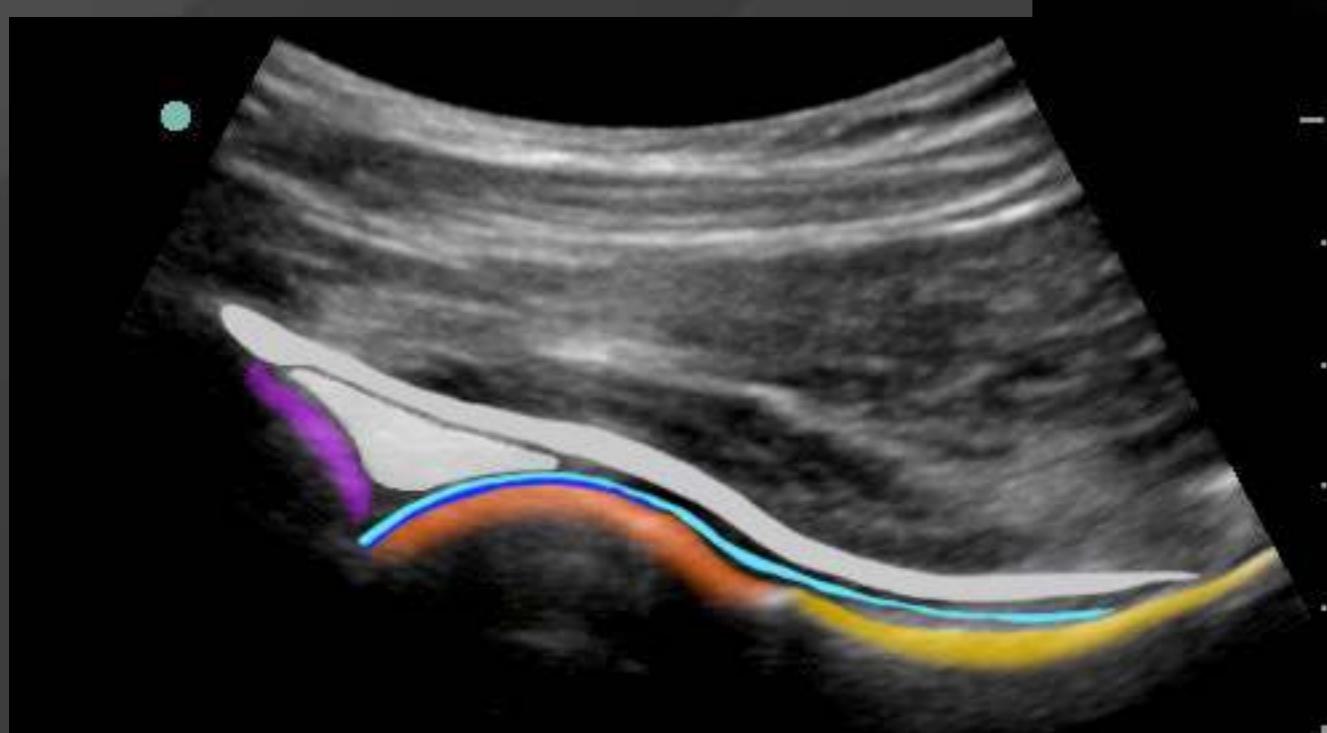


# Iliopsoas tendon

1. Femoral Head
2. Iliopsoas tendon  
arrow (Long view)
3. Iliopsoas tendon  
(transverse view)
4. Iliopsoas bursitis



# Needle Path



2010Jun18 12:46



Res THI  
S MB

Msk  
C60  
-  
85%  
MI  
0.7  
TIS  
0.0

Joint Capsule

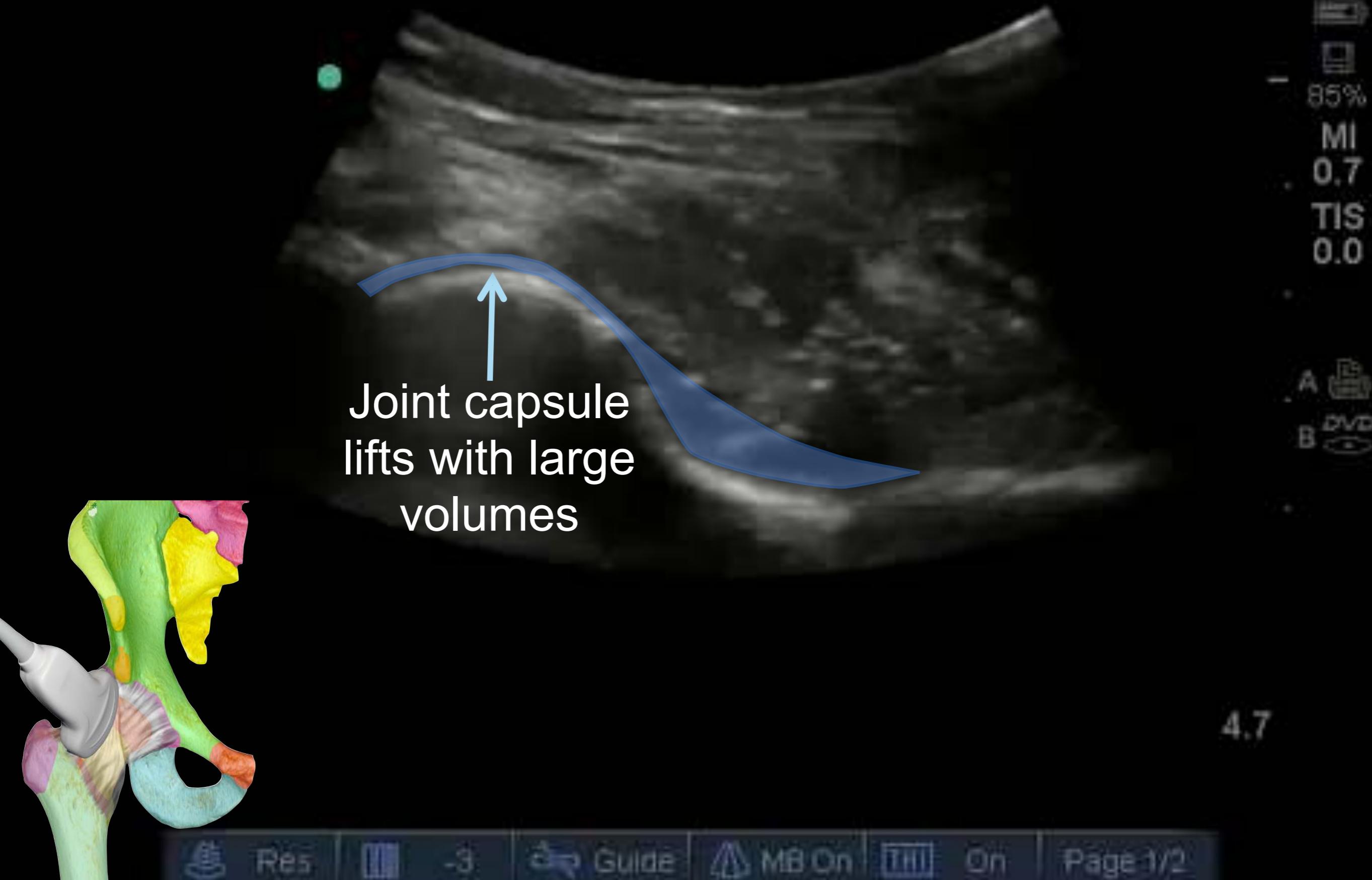
A   
B

4.7





2010Jun18 12:46

Res THI  
S MBMsk  
C60  
  
85%  
MI  
0.7  
TIS  
0.0A   
B 



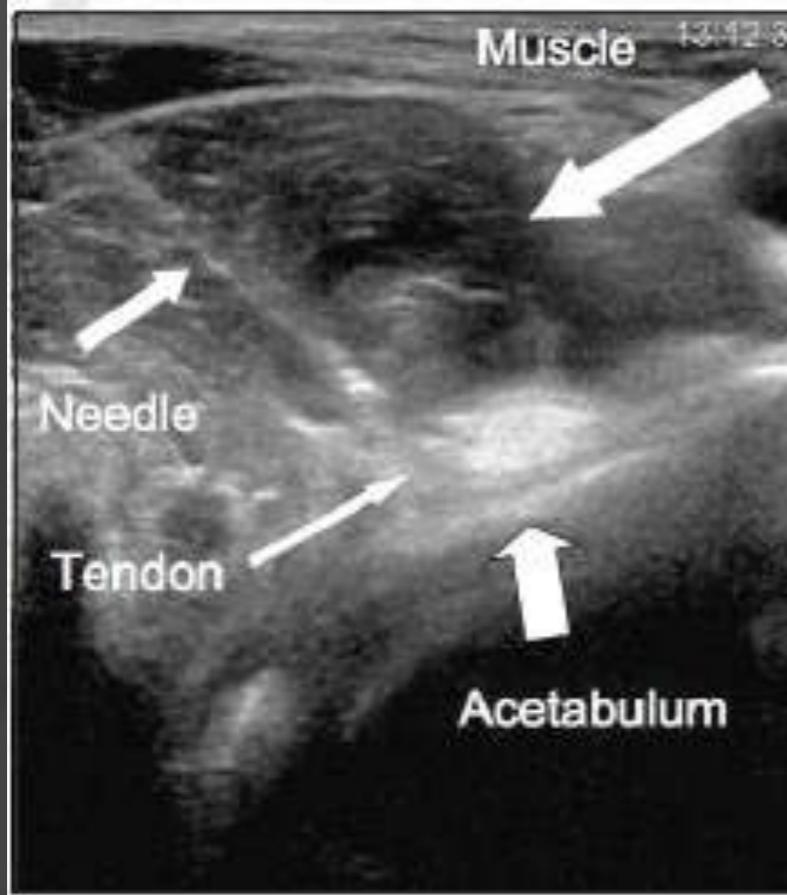
2011Aug06 09:19

Gen THI  
S MBeMsk  
C60  
  
- 98%  
MI 0.7  
TIS 0.2A   
B 

4.7



# Iliopsoas tendon injection



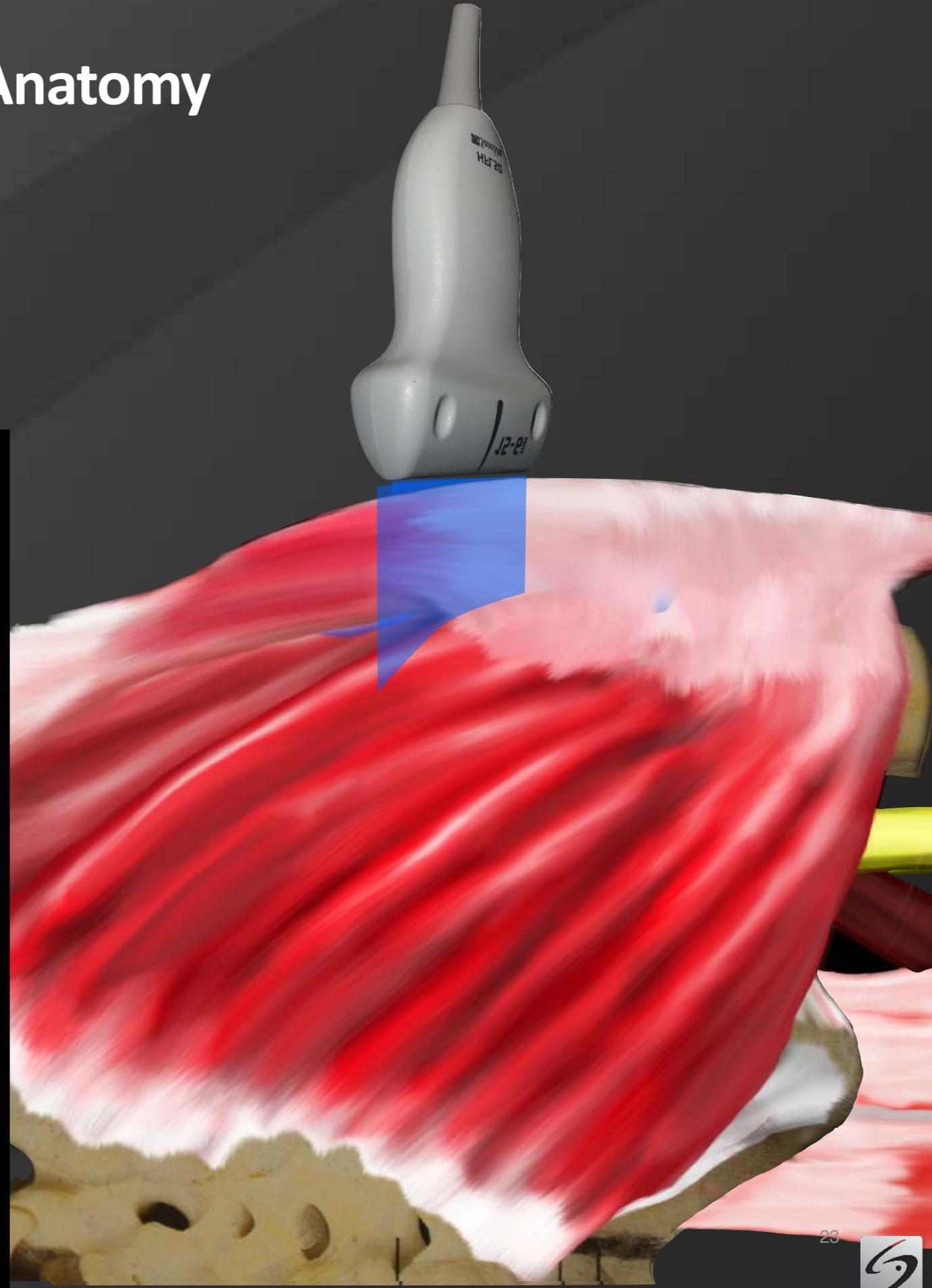
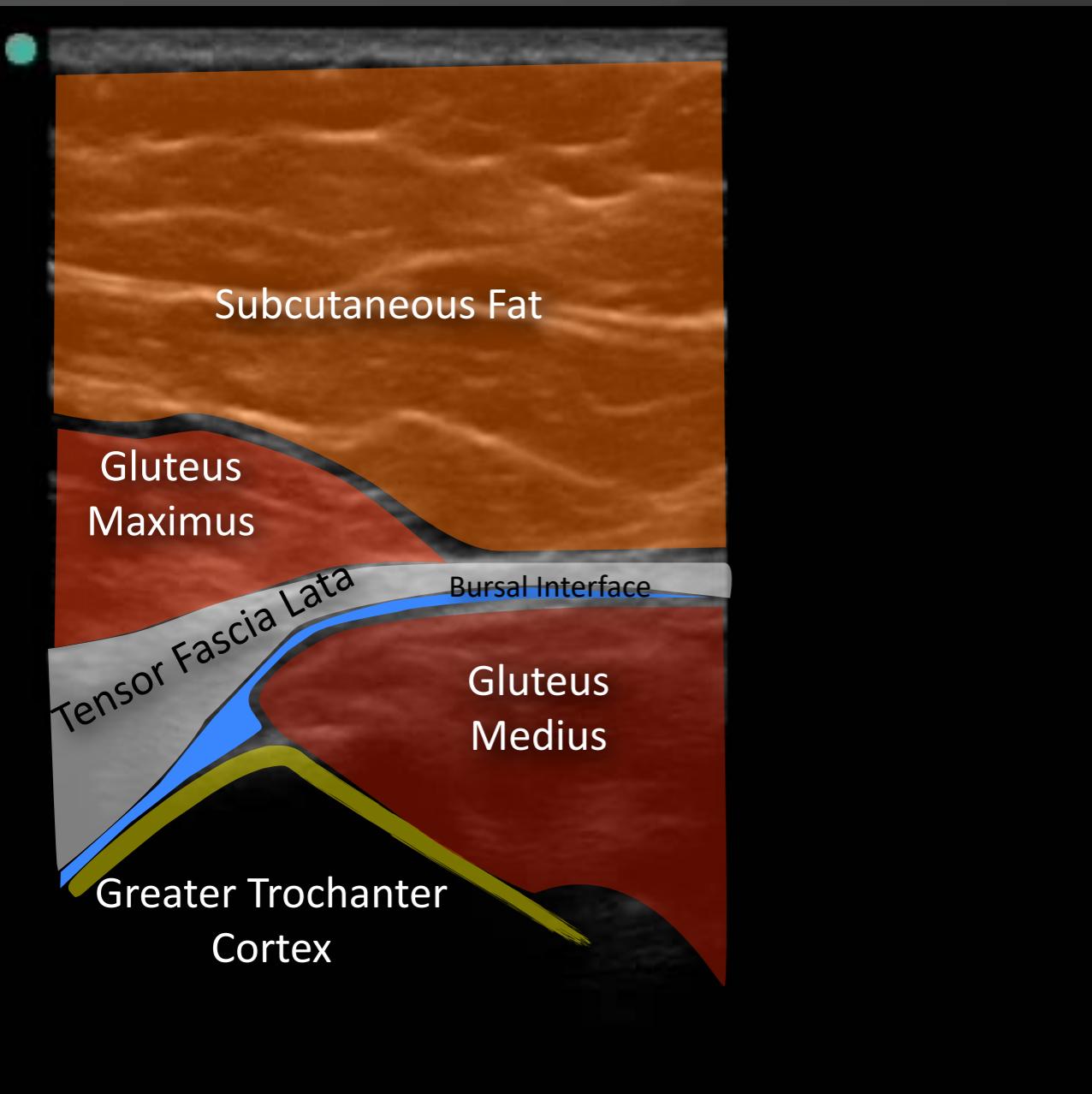
# Trochanteric Bursa Injection





# Lateral Hip: Trochanteric Bursa Anatomy

- Greater Trochanter
- IT Band/Tensor Fascia Lata



# Lateral Hip: Greater Trochanteric Bursa Injection

- linear or curvilinear transducers

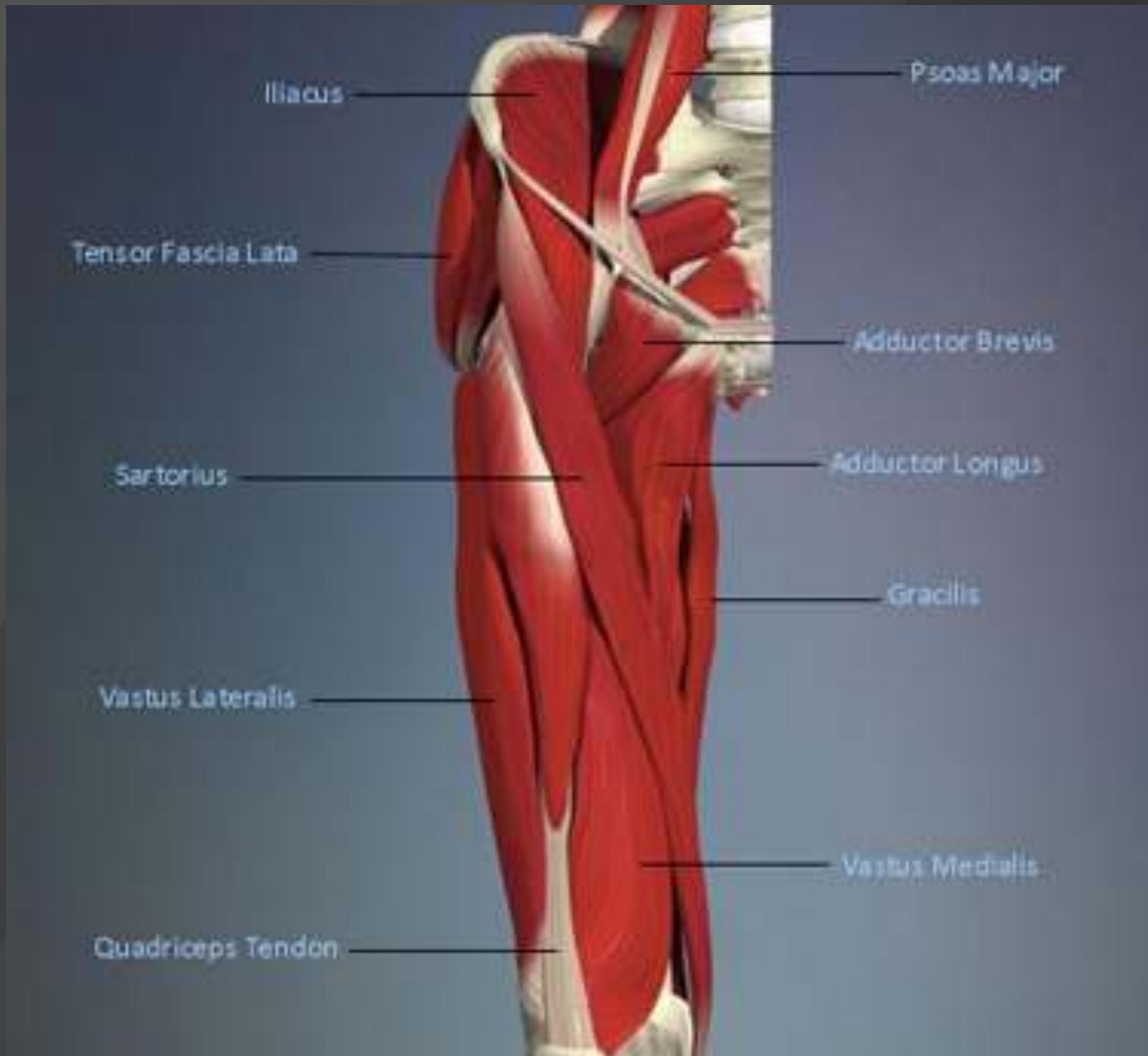


# Adductor tendons

Adductor brevis

Adductor longus

Adductor magnus

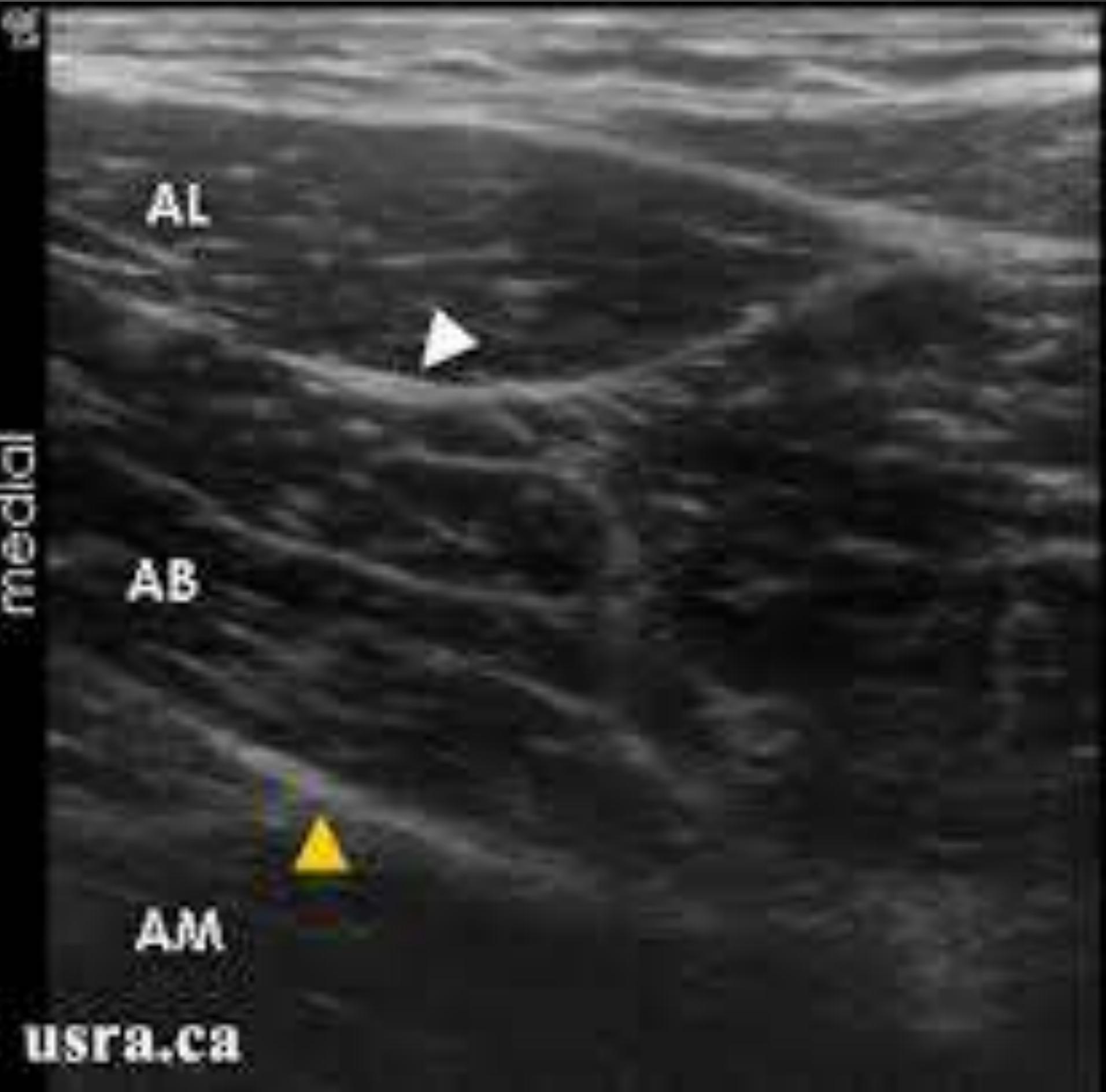






medial

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## Adductor tendon rupture



# Piriformis Injection



## Piriformis Injection Data:

# Accuracy of Ultrasound-Guided Versus Fluoroscopically Guided Contrast-Controlled Piriformis Injections

A Cadaveric Study

*Jonathan T. Finnoff, DO, Mark Friedrich B. Hurdle, MD, Jay Smith, MD*

**Objective.** The purpose of this study was to compare the accuracy of ultrasound-guided injections with fluoroscopically guided contrast-controlled piriformis injections in a cadaveric study.

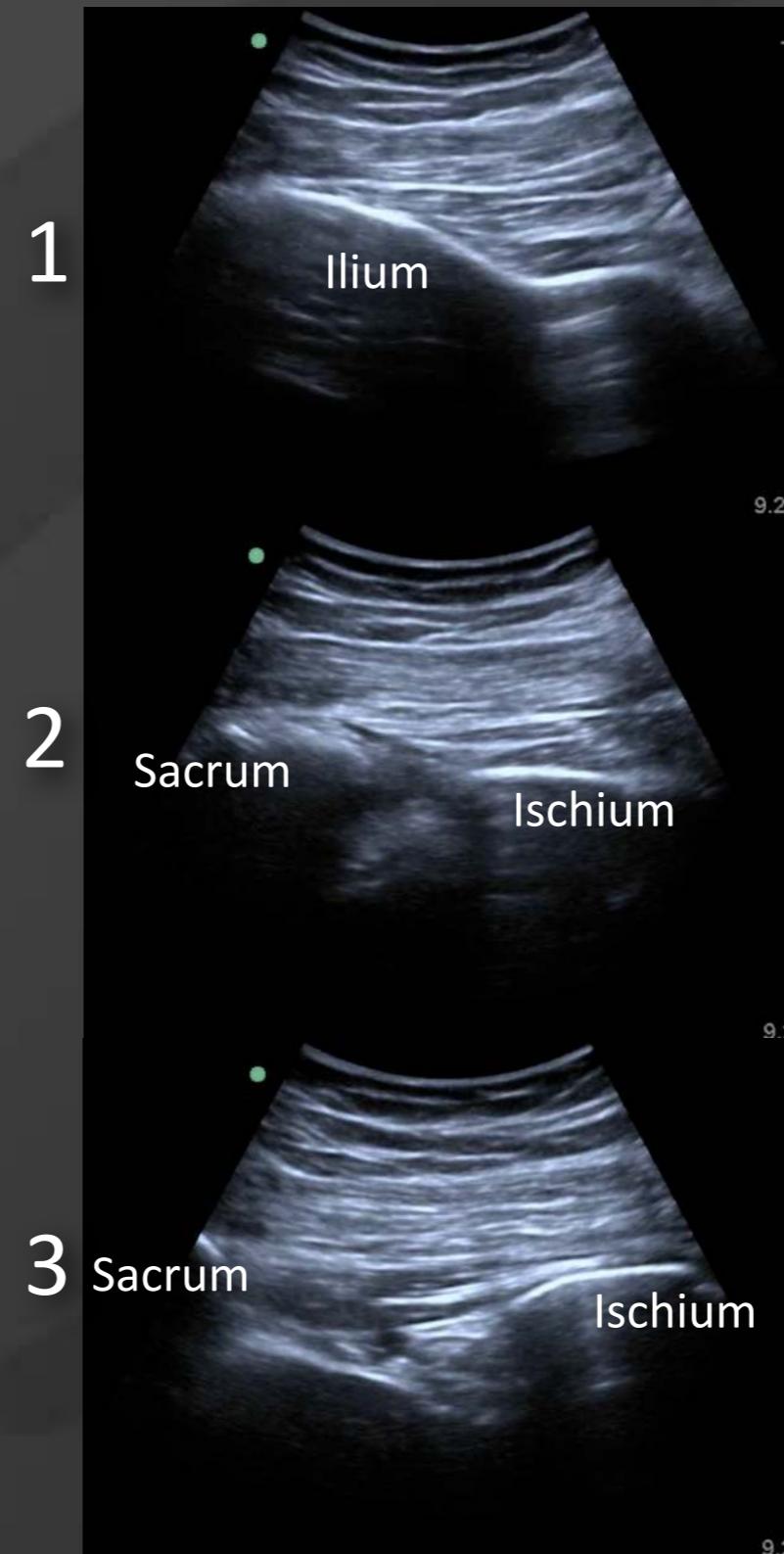
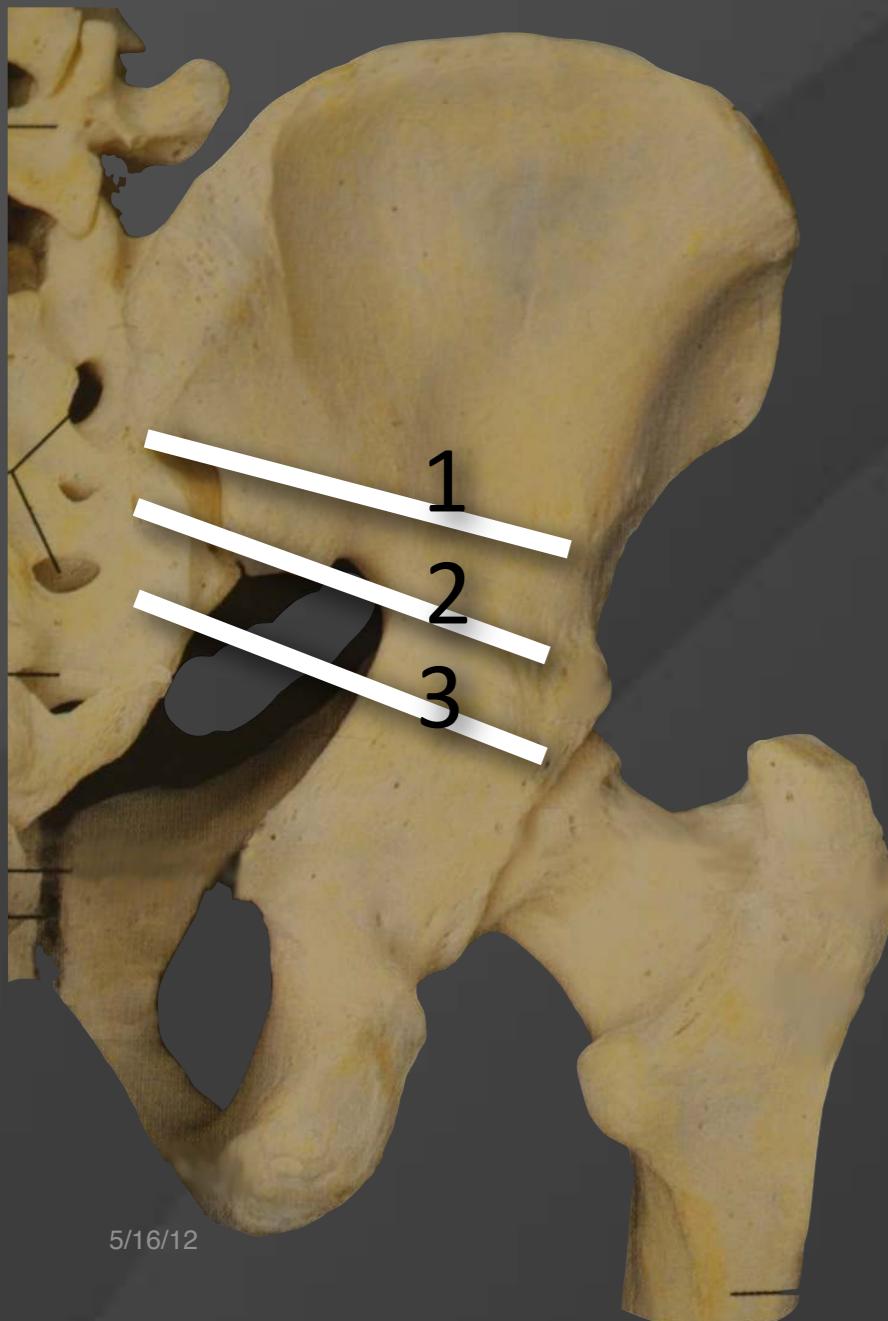
**Methods.** Twenty piriformis muscles in 10 unembalmed cadavers were injected with both fluoroscopically guided contrast-controlled and US-guided injection techniques. The injections were performed by the same experienced individual. Two different colors of liquid latex were used to mark the location of the muscle and the nerve. The location of the muscle and nerve was determined by palpation and confirmed by gross dissection.

## Piriformis Injection Data:

- 10 Cadavers
- 20 Piriformis Muscles
- Injection into each muscle twice, there was no noticeable difference 30 minutes post injection
- Single interventionist: 5 yrs fluoro experience  
4 yrs ultrasound experience
- dissection post injection of liquid latex by 2 observers blinded of the injection techniques
- Only 30% of fluoroscopically placed injections were accurate, compared with 95% of ultrasound-guided injections.

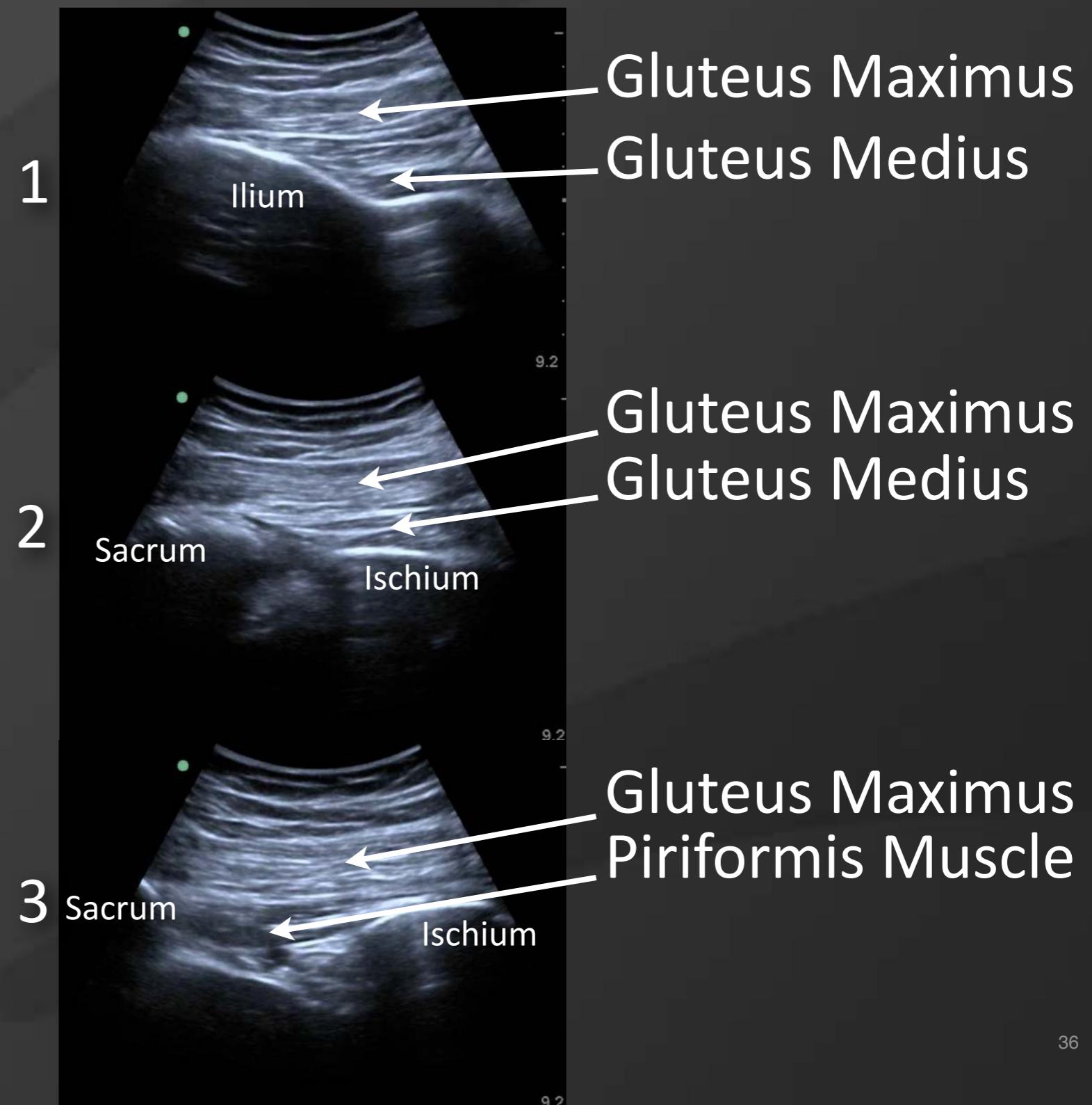
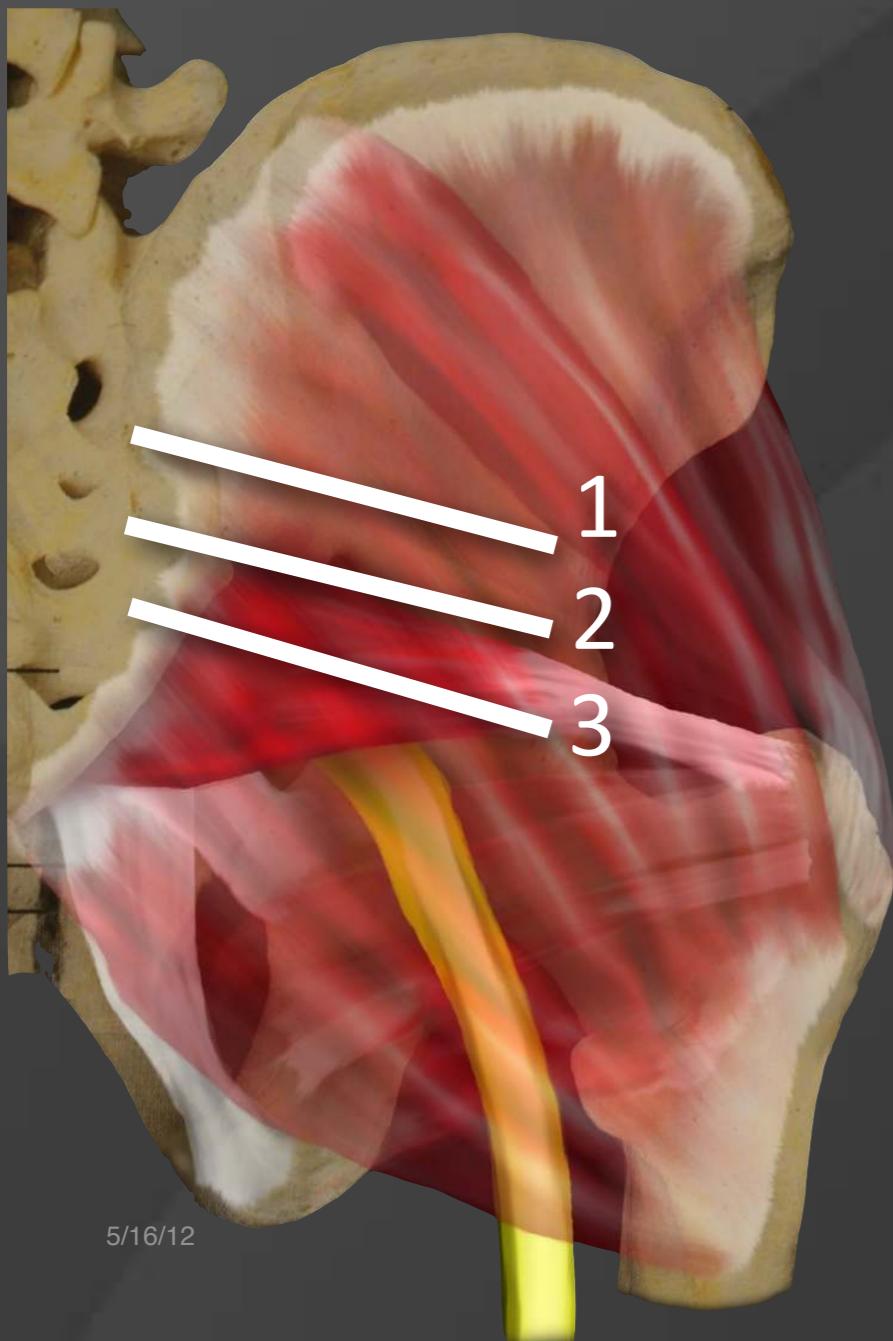
# Posterior Hip: Anatomy

- Bony landmarks associated with the Piriformis



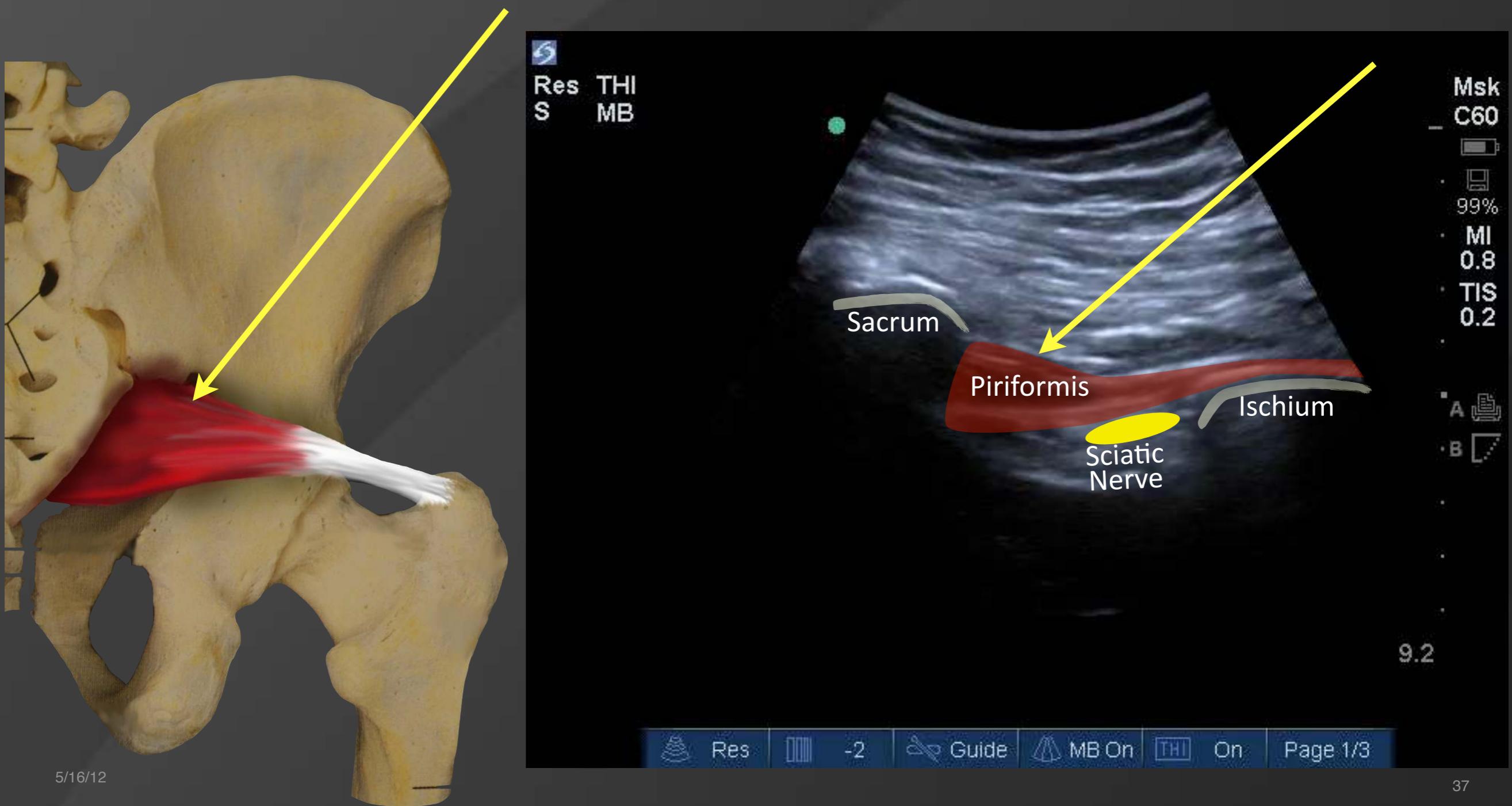
# Posterior Hip: Anatomy

- Soft tissue landmarks

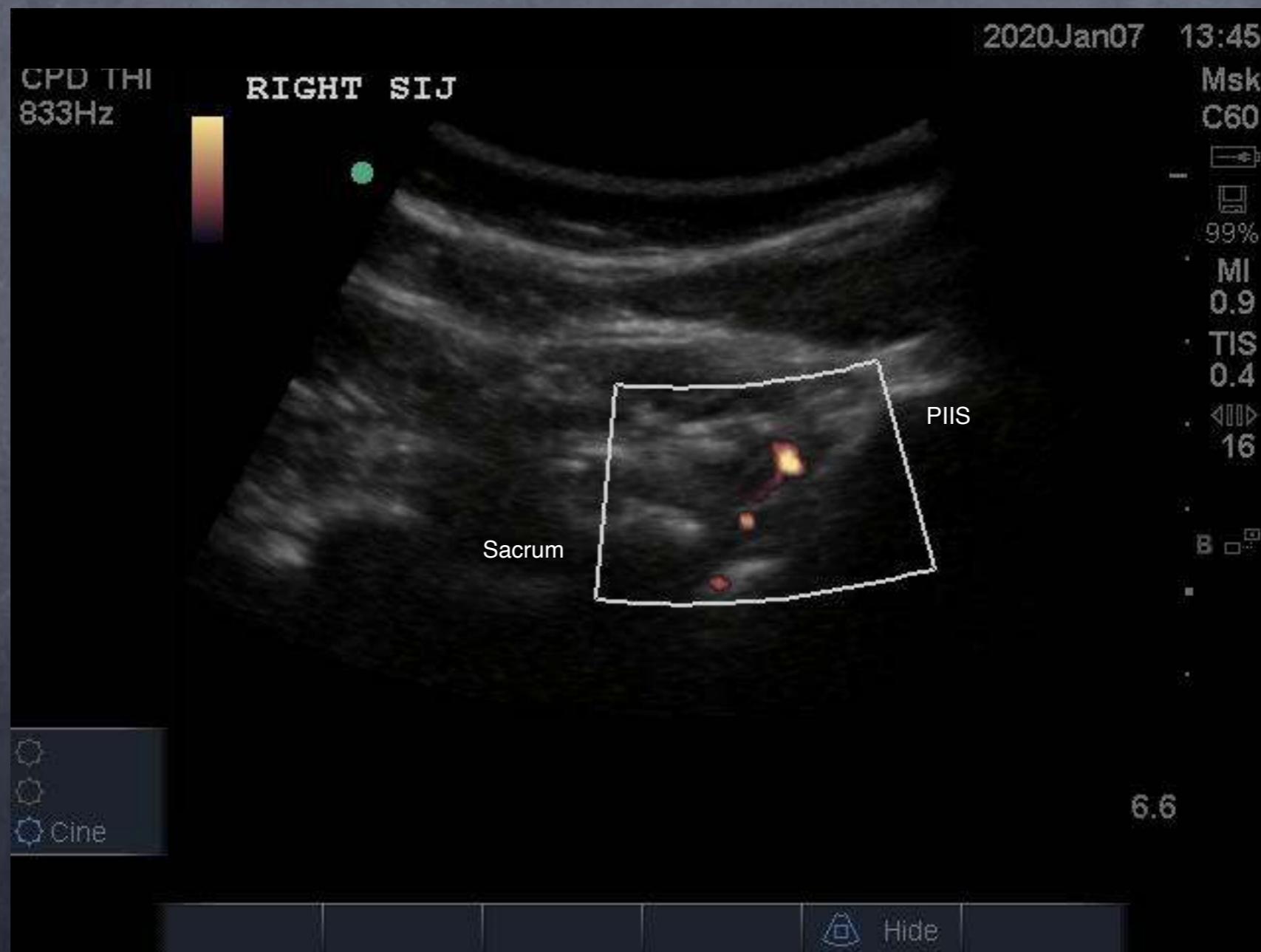


# Piriformis Identification: Dynamic Maneuver

- External and internal rotations



# Sacroiliitis SI joint



## SI joint injections

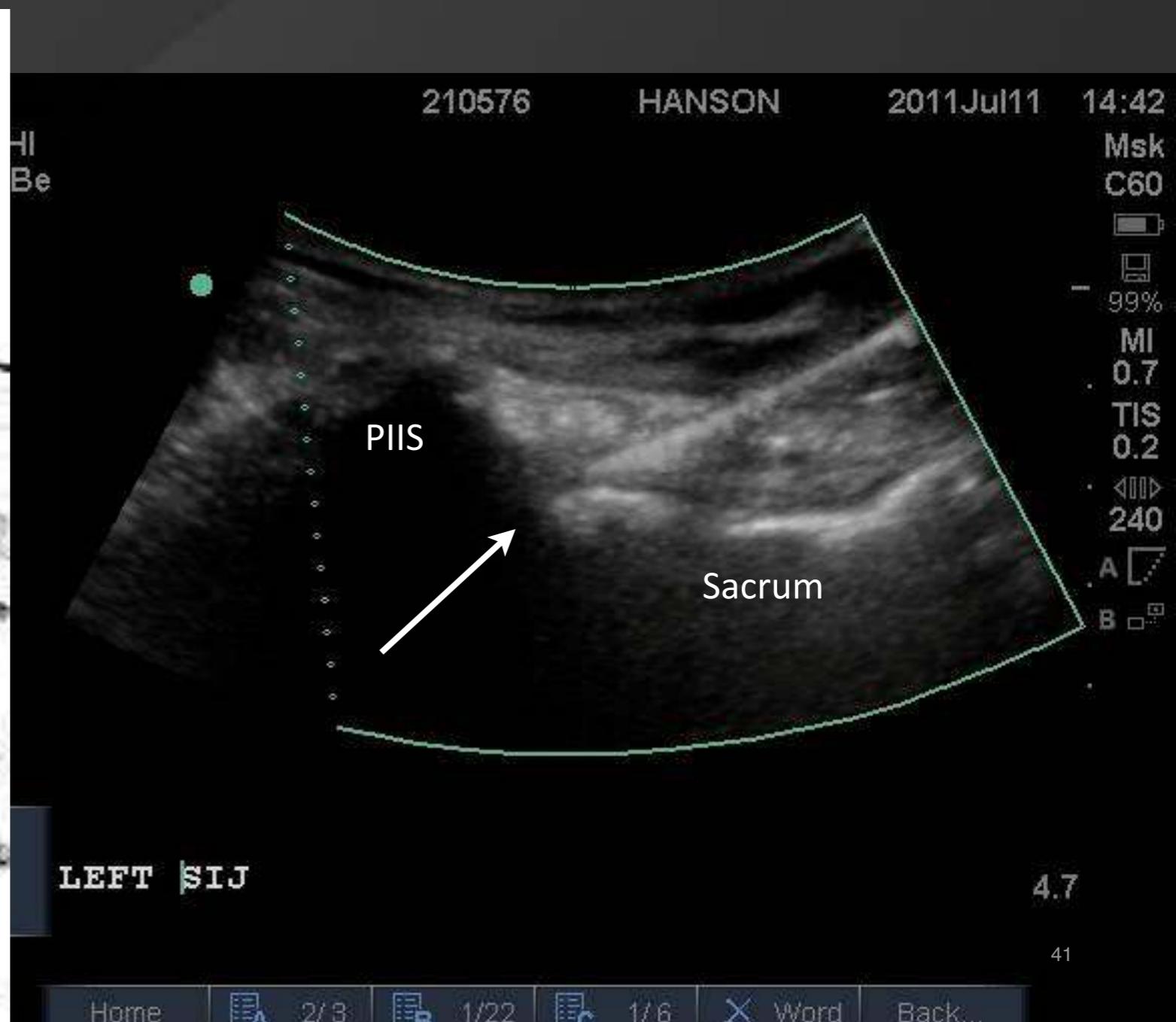
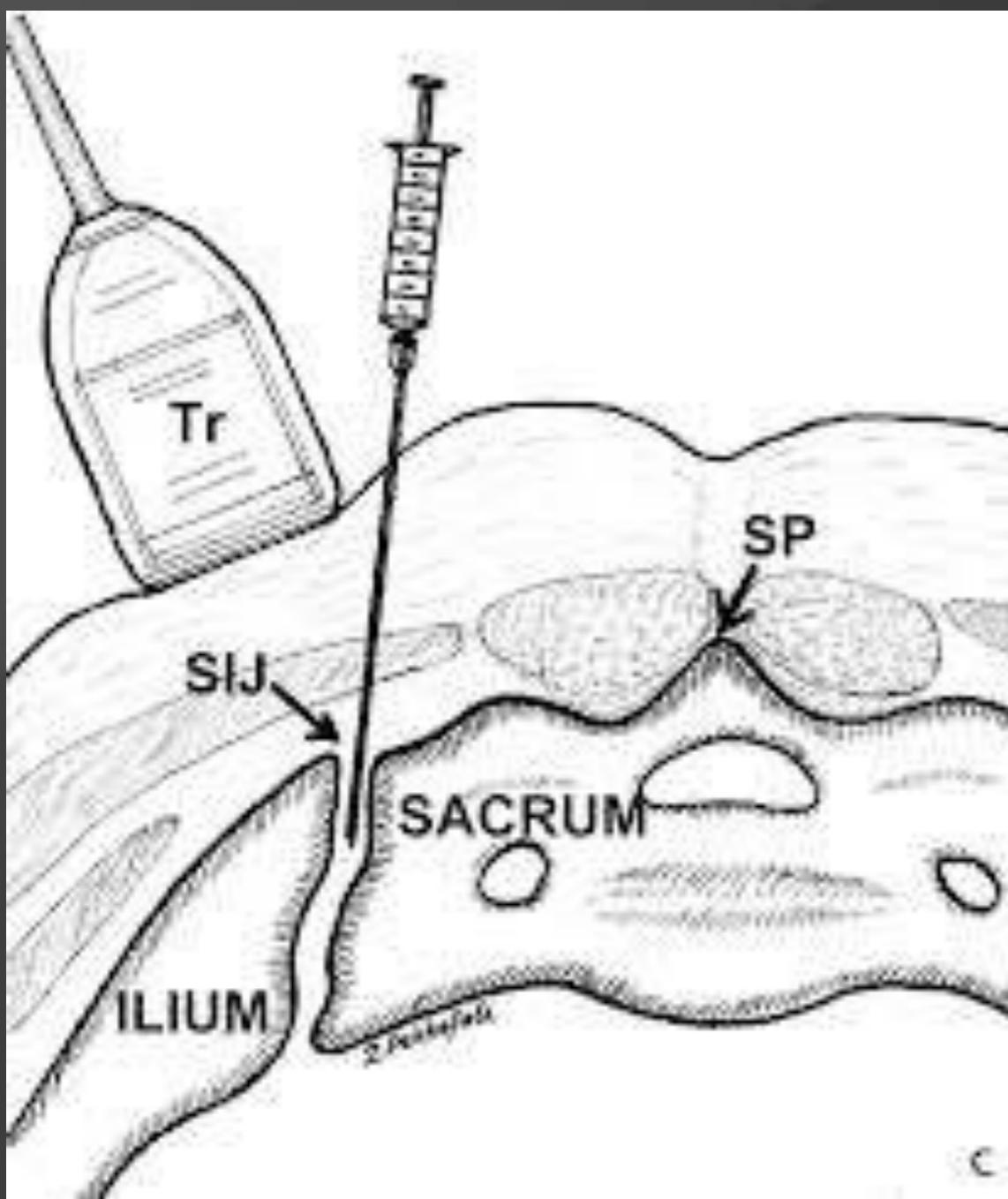




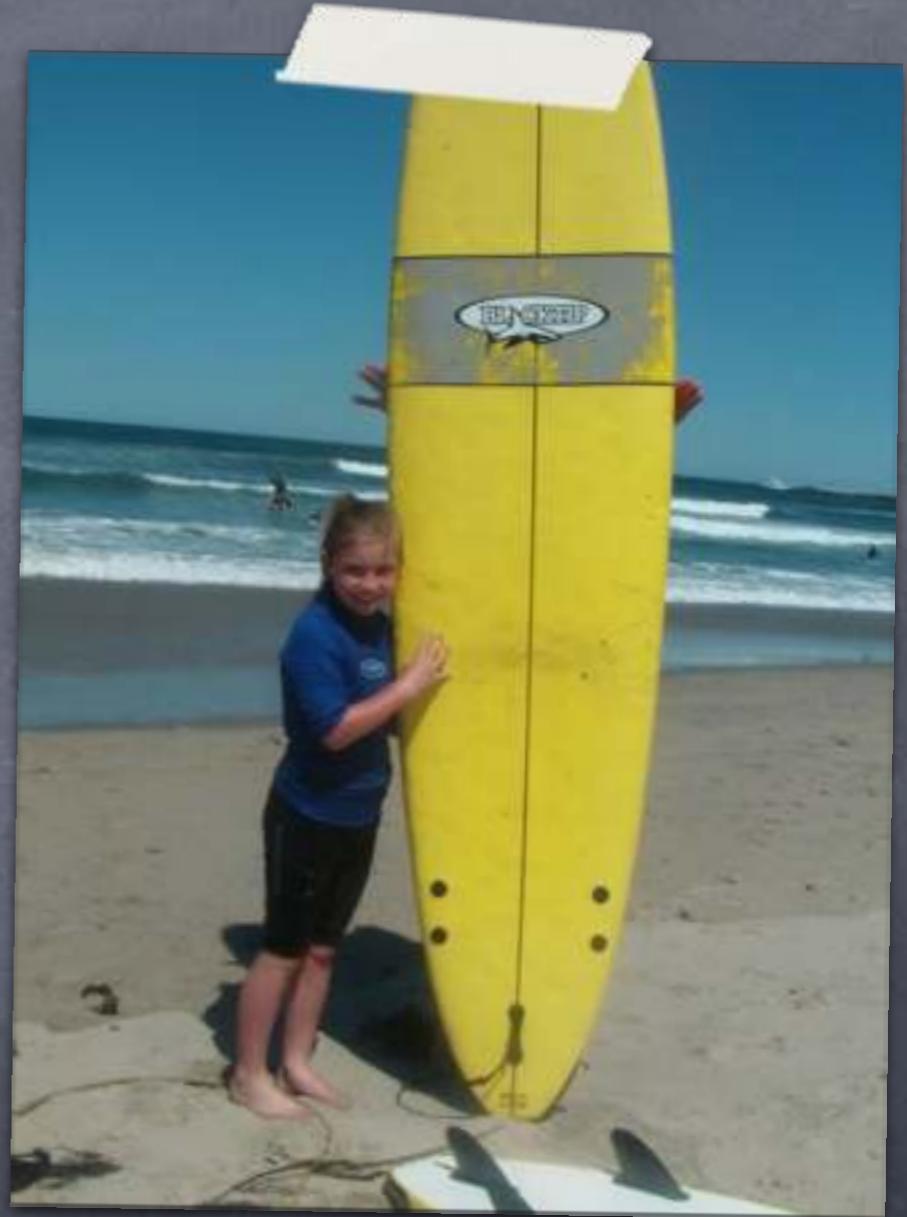
Find PIIS - Superficial bell curved white line

Move probe caudally

Use spinal needle at steep angle starting at the gluteal cleft and aiming the needle lateraly.



# Thank you



# My Girls