Soft Tissue Ultrasound

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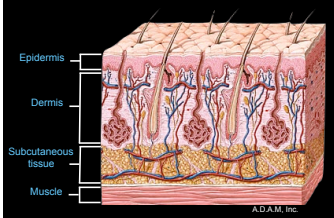
Skin Anatomy

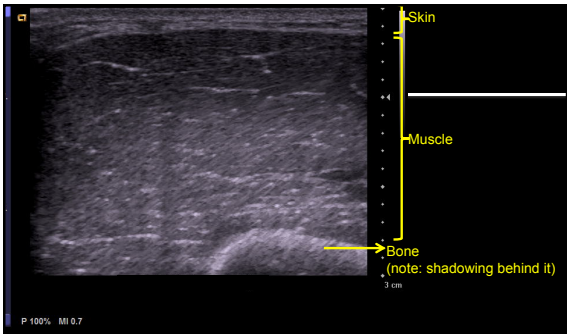


- Abscess usually subcutaneous
- Vascular structures subcutaneous
- Subcutaneous thickness
- mm (eyelid)
- cm (buttocks)

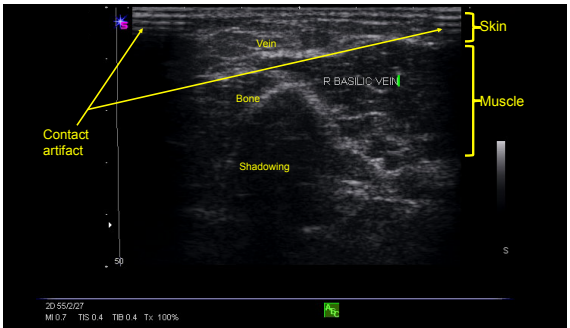
Tips for Soft Tissue Scanning

- Need to evaluate entire region
- Start on the broad view …
- Find bone or muscle fascia to define the full depth of the skin
- Adjust gain

- … then cone down (i.e. depth) when you find the target
- Adjust depth as always!
- Scan in 2 planes



Skin: identify layers

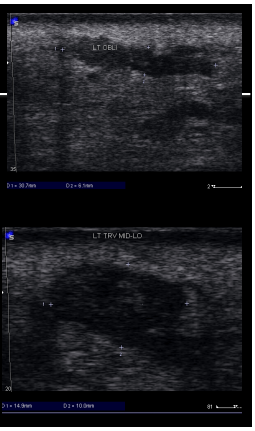


Skin: identify layers

Abnormal Findings

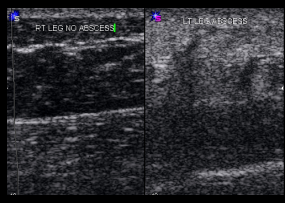
Abscess- Cardinal Features

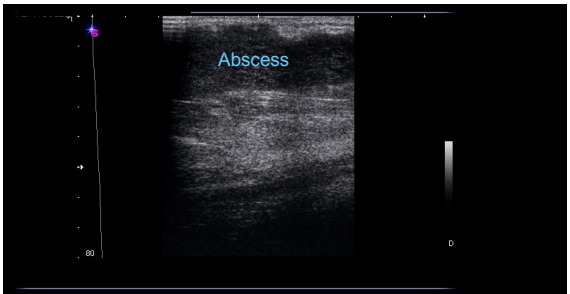
1. Usually relatively hypoechoic mass
2. Usually heterogeneously echogenic (light & dark areas from debris)
3. Posterior acoustic enhancement
4. Usually irregular walls
5. + "Squish" sign
6. Absent color flow within abscess



Cellulitis- Cardinal Features

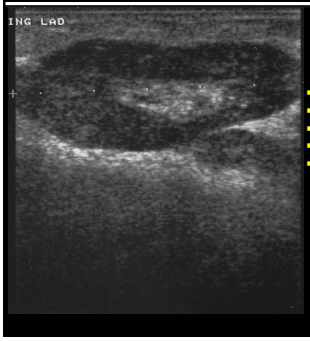
1. Tissues are hyperechoic & thicker compared to normal
2. "Cobblestone pattern:" The septae between the fat lobules often fill with fluid





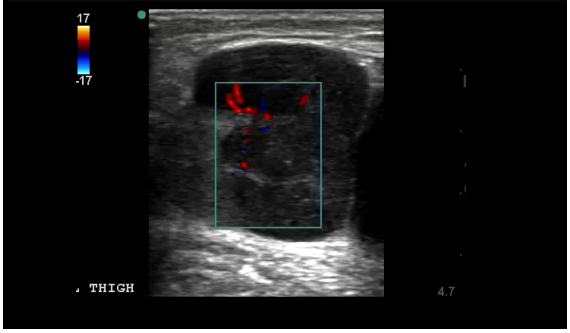
- Hypoechoic mass
- Irregular walls
- Heterogeneously echogenic
- Posterior acoustic enhancement
- + "squish"

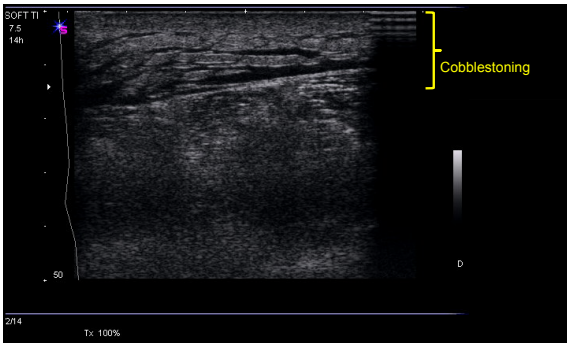
Lymph Nodes



- Hyperechoic medulla
- + central color flow
- +/- posterior acoustic enhancement
- Squish –
- Smooth rounded edges

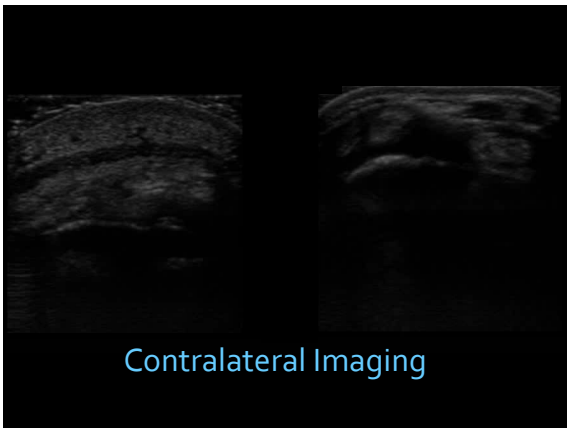
Lymph Nodes- color flow

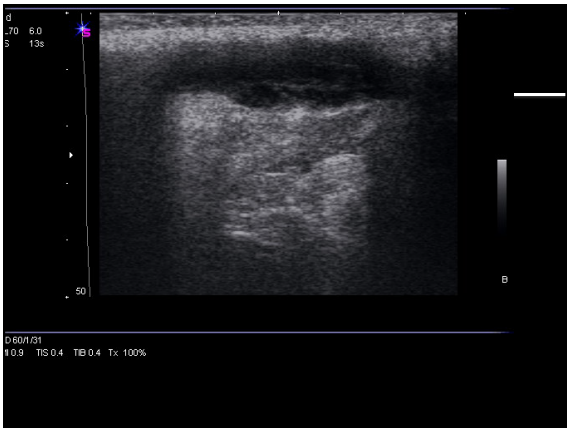


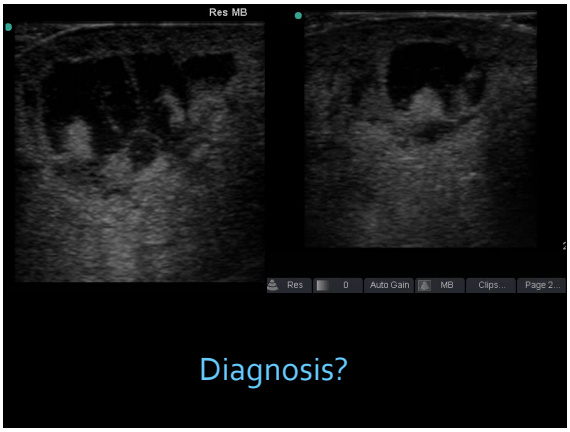


Pain and swelling of shin

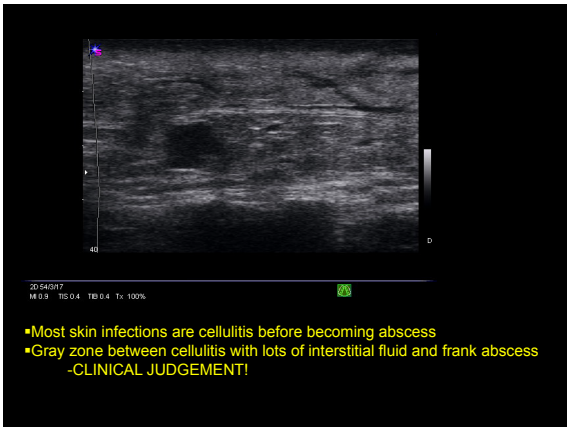

VEIN / SOFT TI
75L70 6.0
FPS 14fr
R AHIN
50
D
2D 55/2/17
MI 0.7 TIS 0.6 TIB 0.6 Tx 100%

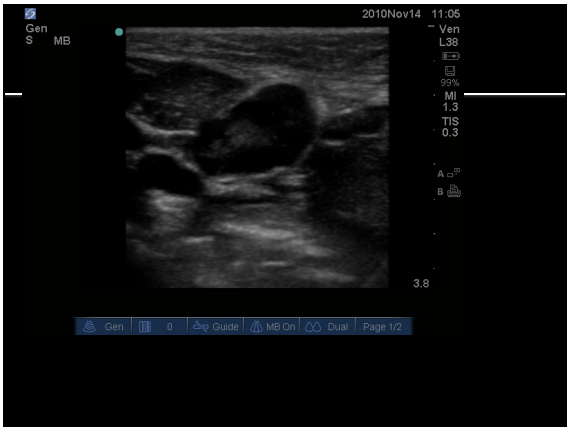

Contralateral Imaging

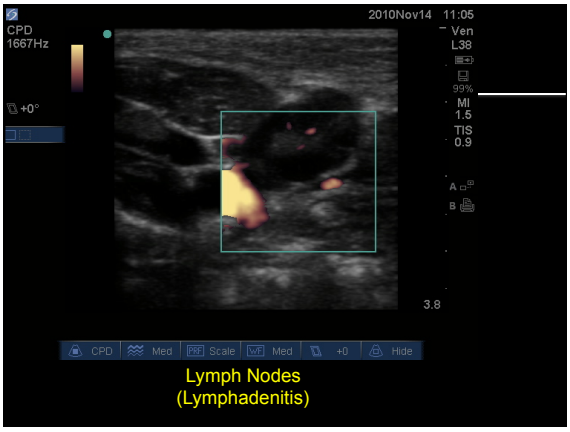

50
B
D 60/1/31
1 0.9 TIS 0.4 TIB 0.4 Tx 100%


Res MB
Res
0
Auto Gain
MB
Clips...
Page 2...
Diagnosis?


657
2008Aug20 12:01
Res MB
Sup
L26
91%
32
46
MI
0.7
2.6
Guide
Dual
U/L
10
Page 1...

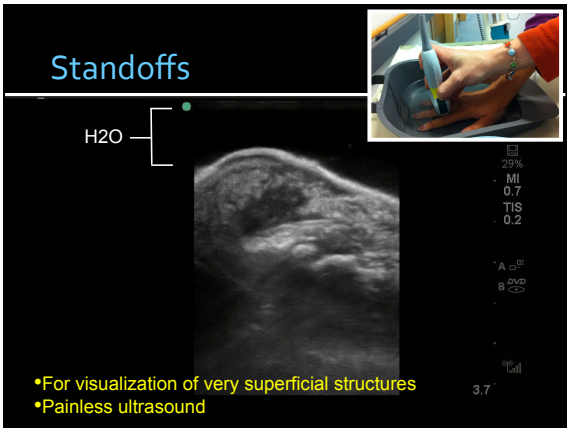

40
D
2D 54/3/17
MI 0.9 TIS 0.4 TIB 0.4 Tx 100%
▪Most skin infections are cellulitis before becoming abscess
▪Gray zone between cellulitis with lots of interstitial fluid and frank abscess
-CLINICAL JUDGEMENT!





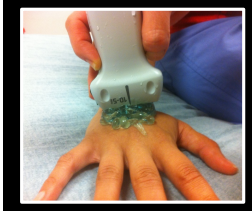
Lymph Nodes
(Lymphadenitis)

Standoffs

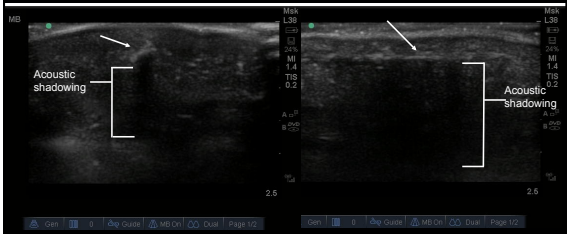


- For visualization of very superficial structures
- Painless ultrasound

Standoffs



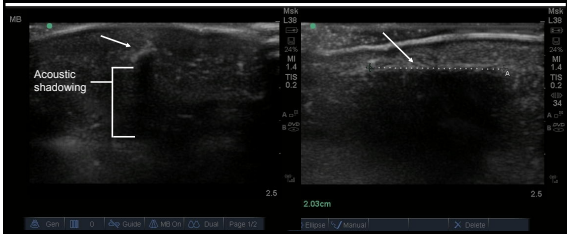
Foreign Bodies



FB in transverse

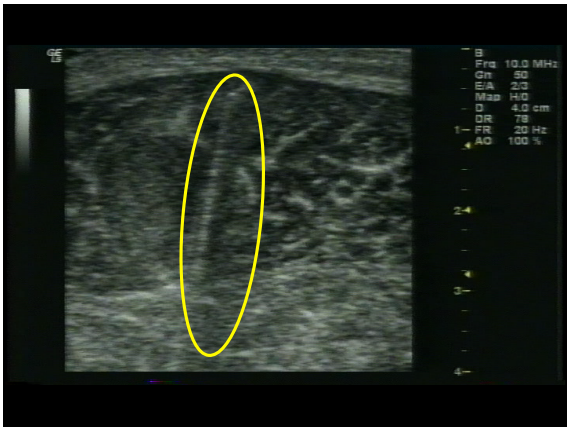
FB in longitudinal

Foreign Bodies



FB in transverse

FB in longitudinal



Pitfalls

- Mistaking other structures for an abscess
  - Lymph nodes, vessels
  - Apply color flow
- Not scanning deep enough
  - Identify bone or muscle fascia
- Loss of skin contact
  - If very tender, use gel standoff or water bath

QUESTIONS?