

Soft Tissue/ Musculoskeletal



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Soft-tissue US in the Disaster Environment

- CT is the gold standard.....BUT
- MRI is great.....BUT
- Plain films just suck.....no BUTs
- U/S has high sens/spec and improves accuracy of clinical exam
- Procedural guidance
- Availability?

Ultrasound Applications

- Confirm cellulitis
- Confirm occult abscess
- Identify EXTENT of obvious abscess (ED vs OR drainage)
- Localize abscess for drainage
- Identify fluid adjacent to deeper fascial planes
- Identify a peritonsillar abscess vs peritonsillitis

Ultrasound

applications, contd.

- Localization and removal of foreign bodies
- Identification/ confirmation of fractures
- Confirmation of tendon rupture
- Aspiration of small joints
- Assistance with nerve block anesthesia

Transducers

- 7.5-10+ MHz linear
- 3.5-5 MHz curved in some cases

**USE COVERS FOR ALL
SCANS!!**



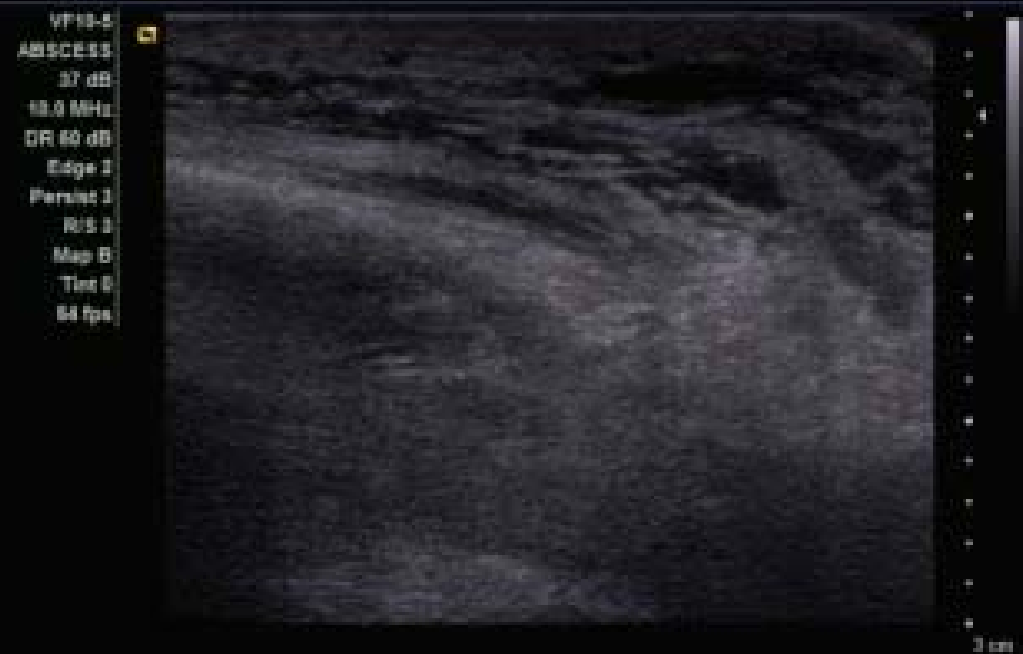
Sono Technique

- 2 orthogonal planes, scan and measure
- Depth assessed by display markers
- Doppler to r/o vascular structure
- Gentle pressure to elicit “squish”
- Slow, methodical scans; remember your “angle of insonation”

Normal Sono Findings

- Subcutaneous tissue=hypoechoic, connective tissue strands
- Fascial planes=hyperechoic
- Muscle=striated
- Vascular=anechoic
- Nerves=stippled
- Lymph nodes=inner echogenic, outer hypoechoic

Abnormal: Cellulitis



Abnormal: Cellulitis

- Cobblestoning and Echogenicity



Abnormal: Abscess

- Variable appearance
- Posterior acoustic enhancement
- “Squish sign”

Axillary Abscess



Axillary Abscess



Umbilical Abscess



Squish Sign

Butt Abscess

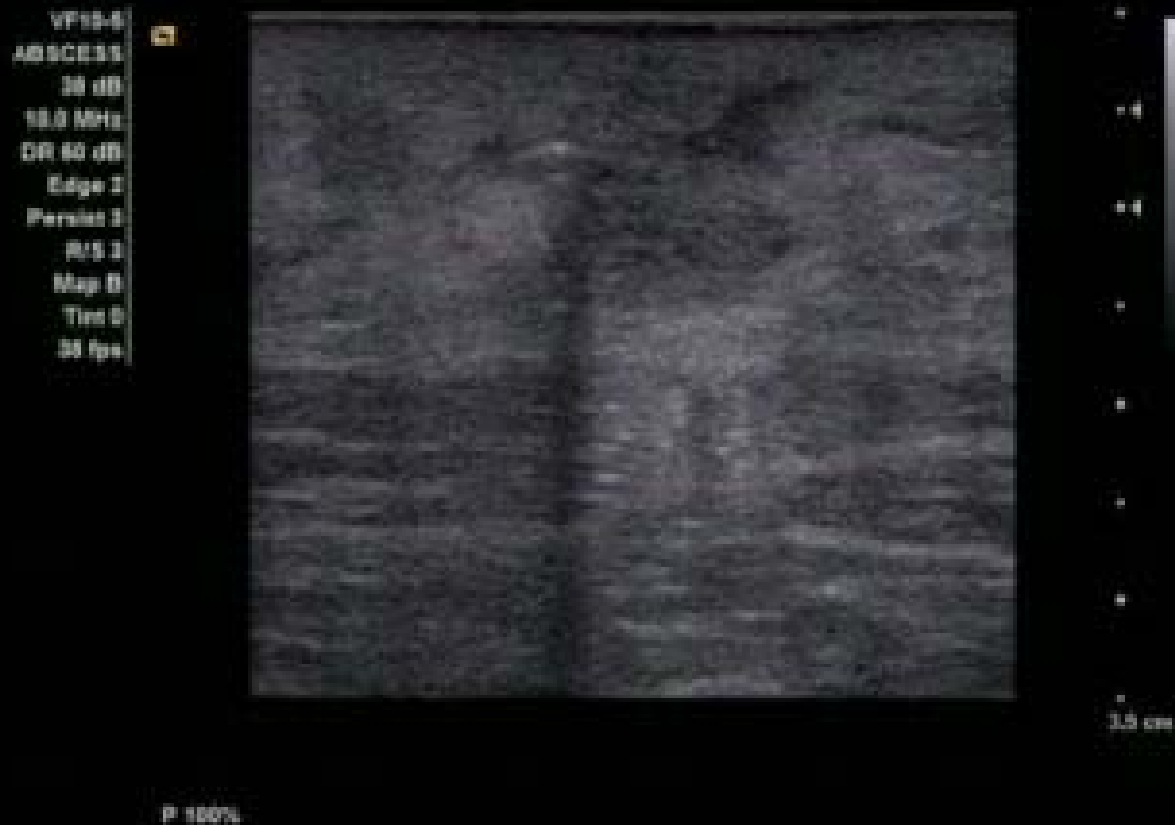


GSW to Leg, Infected



What is the artifact?

Butt Abscess with Air



Abnormal: Necrotizing Fasciitis

- SQ thickening (i.e. cellulitis)
- Anechoic fluid
- +/- SQ gas

Pitfalls

- Abscess vs Cellulitis:
 - Isoechoic
 - Bands of edema vs abscess

Pearls

- Use contralateral side
- If no fluid collection....look for enhancement or subtle squish
- Place probe over area of maximal induration/fluctuance
- Plenty of gel
- Water bath

Peritonsillar scans

Transducer: Peritonsillar



- Endocavitary probe for PTA scans

USE COVERS FOR ALL SCANS!!

Sono Technique

Peritonsillar

- Peritonsillar scans
 - Topical anesthetic
 - Anchor hand
 - Medial to lateral
 - Gentle pressure
 - Note ICA

Abnormal: Peritonsillar Abscess

- Variable, but generally hypoechoic mass
- Posterior enhancement
- Comparison is helpful

Peritonitis, No Abscess



Peritonitis, No Abscess



Peritonsillar Abscess

EARLY OB EN

EV04 8.5

FPS 180



2D-85001

M1.0 TC 0.4 TR 0.4 Tc 100%



There Will Be Blood

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EARLY OB EN
Ev6-4 8.0 4.5
FPS 180



20
0"
0.24
0.24
mm

20-8A0001 C 5008
M 0.5

Tx 100%

AB 0%

s/p I&D

EARLY OB EN

EV9.4 8.5

FPS 146

POST DRAINAGE TONSILLAR ABSCESS



20-05-07

M:1.0 TSG:4 TD:0.4 Tx:100%



Pitfalls

- Peritonsillar scans:
 - Trismus
 - Inferiorly located PTA

Pearls

- Cetacaine spray
- From medial to lateral
- Anchor pinky, choke up on probe

Soft tissue FB

- Common problem in disaster/ post-disaster scenarios
- Frequently foot, difficult to localize due to fibrous septae
- Wouldn't even attempt without real-time imaging
 - With experience, can use US for better success of foot nerve blocks--SWEET
- Contrary to fluoroscopy, US useful for radiodense (metal/glass) and radiolucent fb's

Foreign Body-Hand



FB, flank



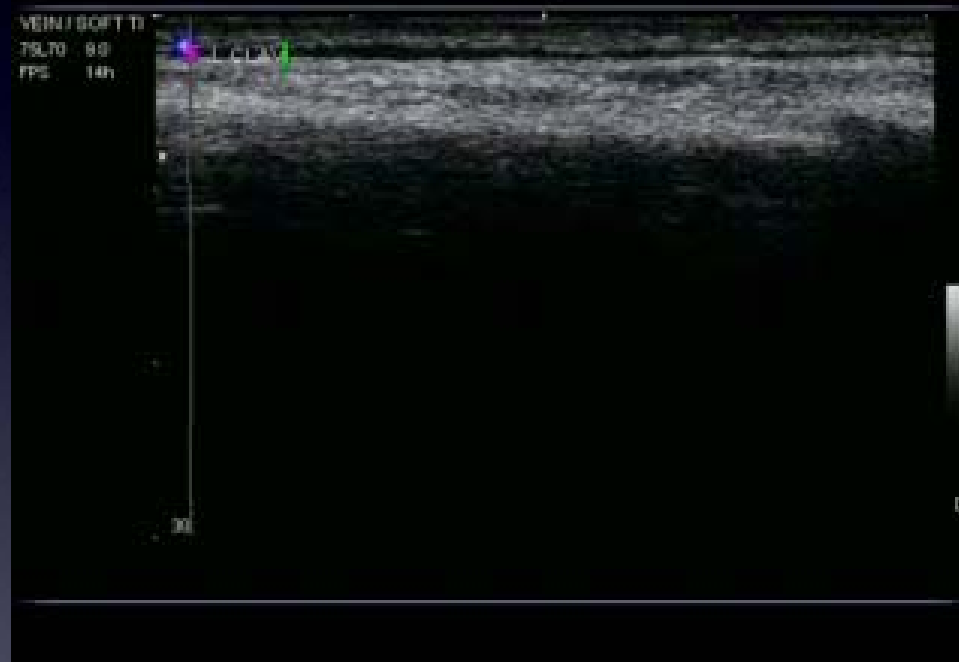
FB, calf



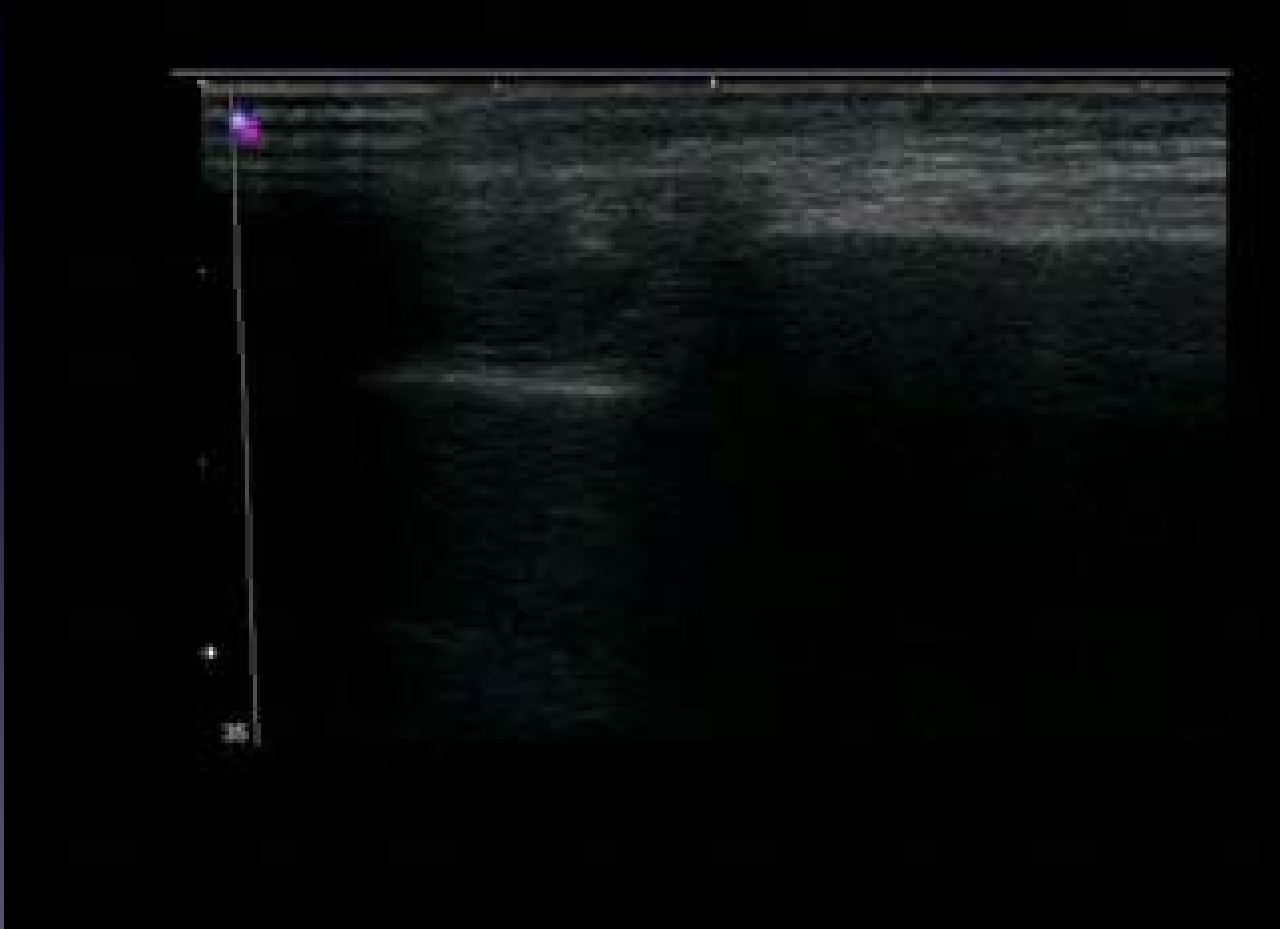
Fracture diagnosis

- May be role for US in fracture diagnosis
 - No requirement for ionizing radiology
 - No need for xray technologist
 - Strike teams

Clavicle



Sternum



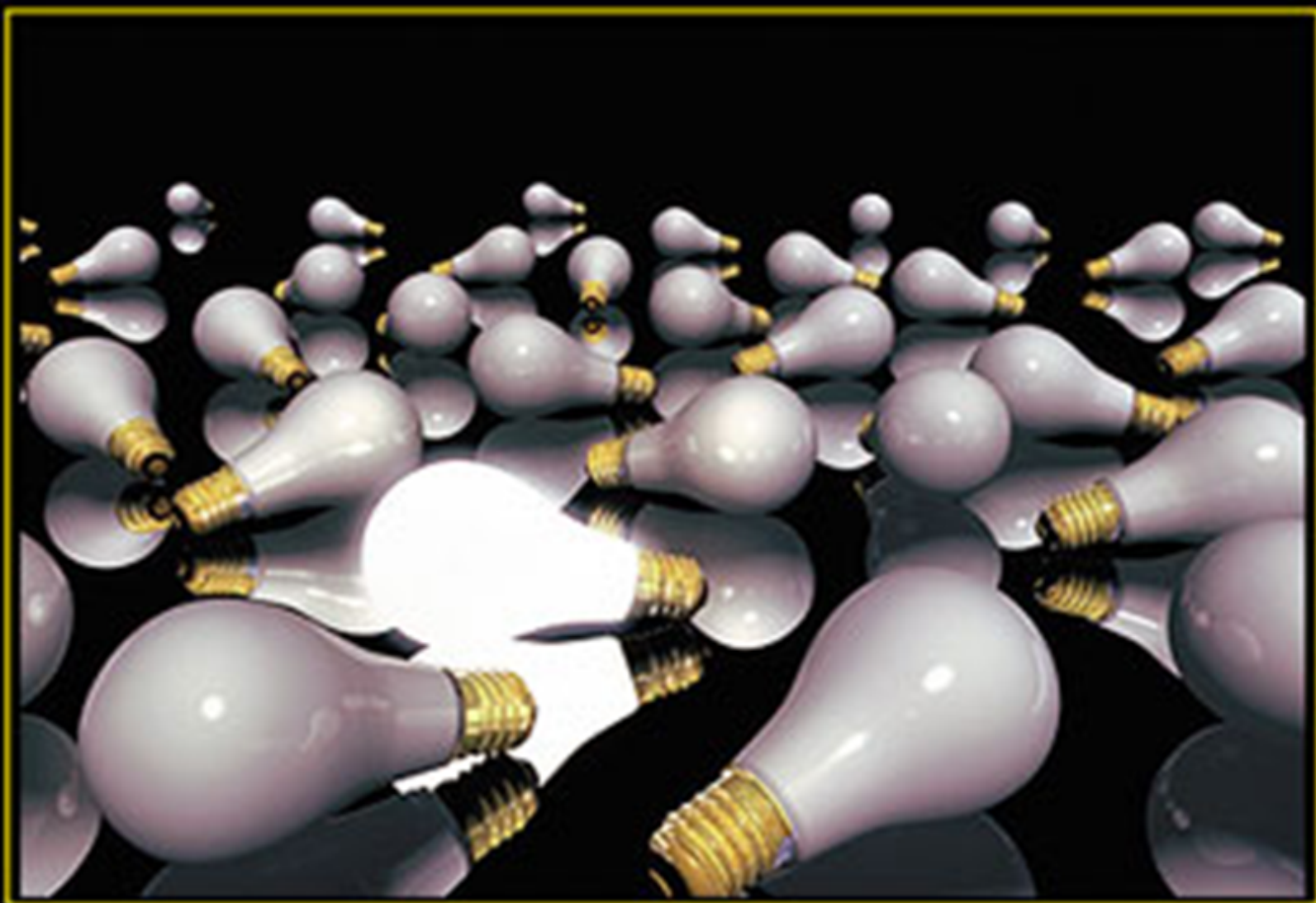
Patella FX



Other potential uses:

- Joint aspiration (especially hand/foot)
- Evaluation for tendon injury





CLUELESSNESS

THERE ARE NO STUPID QUESTIONS,
BUT THERE ARE A LOT OF INQUISITIVE IDIOTS.