Soft Tissue PoCUS
Objectives

• General Principles and Key Examples
• Soft Tissue Infection
• Soft Tissue Injury
Infection

• PoCUS Question?
  • Is this cellulitis or an abscess?
  • Is there a collection that can be drained?
  • Is aspiration likely to be successful?
  • What is the best location and how deep should the incision be?
Infection PoCUS

• Distinguish Cellulitis for Abscess?
  • Cobblestone
  • Anechoic collection
  • Hyperechoic debris
  • Pustulasis
Pustulasis

- Light pressure and release
- Look for debris movement

- Pustulasis also suggests aspiration may be successful
Beard Abscess
Question?

- Abscess or Cellulitis?
- Should it be drained?
Question?

- Abscess or Cellulitis?
- Should it be drained?
Drainage

• Cellulitis with Abscess

• PoCUS can guide depth of incision

• PoCUS can guide aspiration +/- incision
Peritonsillar Abscess

- PoCUS Question
  - Is this uncomplicated tonsillitis or a peritonsillar abscess?
  - Where and how deeply should I insert the needle?
Peritonsillar Abscess

- Drain?
Peritonsillar Abscess

- Drain?
Peritonsillar Abscess

Right Tonsillar Fossa Transverse View

ABSCESS

CAROTID

L 0.57 cm
Soft Tissue Injury

- Tendon Injury
- Muscle Injury
- Foreign Body
Normal Tendon

- Parallel hyperechoic fibrillar pattern
- Echogenicity depends on orientation
Anisotropy

- Echogenicity of Tendon and Muscle is dependent on angle of insonation
- Can be mistaken for pathology

D - Deltoid, ACR - Acromion, SSP - Supraspintus, HH - Humeral Head, * - Anisotropy
Anisotropy

Volar Wrist - Anisotropy of Flexor Tendons
Achilles Tendon Rupture

Long Axis
Normal Muscle

- Hypoechoic muscles bundles
- Hyperechoic connective tissue strands
- Echogenicity depends on orientation

**Anterior Thigh, Long**

F - Fascia, M - Muscle, B - Bone, * - Connective Tissue

**Short**

F - Fascia, M - Muscle, B - Bone, * - Connective Tissue
Muscle Contusion

- Muscle swelling
- Increased echogenicity

VM - Vastus Medialis, F - Femur

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Muscle Tear

- Anechoic intramuscular hematoma
- Muscle bundles may separate on dynamic exam

RF - Rectus Femoris, VI - Vastus Intermedius, F - Femur
Foreign Body

- Accuracy for wood FBs is 80-97% (Radiologists / EPs)
- Thorough examination required to rule-out
- Glass, Metal, Plastic, Stone, Wood are all visible
- Indications
  - Rule-in vs Rule-out Radiolucent FB
  - Localisation of FB
  - Removal of FB

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Foreign Body

- Technique
  - Stand-off device / waterbath if necessary
  - High frequency, small footprint
  - Systematic scan in two perpendicular planes
  - Best viewed when aligned to long axis (in-line)
Foreign Body

- Hyperechoic
- Acoustic shadow
Foreign Body

- Contour
- Reverb
Foreign Body

- **Pearls**
  - Hypoechoic halo
  - Compare opposite limb

- **Pitfalls**
  - Inexperience
  - Small FB
  - Ignoring clinical findings
  - Negative scan does not rule-out
Foreign Body - Removal

- Identify
- Anaesthetise skin
- PoCUS guided localisation with needle
- Infiltrate / surround FB with aesthetic

Remove FB:
  - Either use needle to guide incision and explore
  - Or PoCUS-guided forceps retrieval
Questions?