

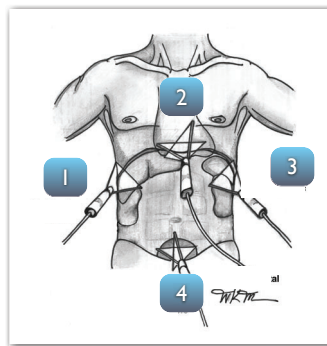
# EFAST for Trauma: Improving Accuracy

Starr Knight, MD  
University of California San Francisco



## EFAST Exam

- Review EFAST Basics
- Highlight Common Pitfalls
- Case-Based Discussion

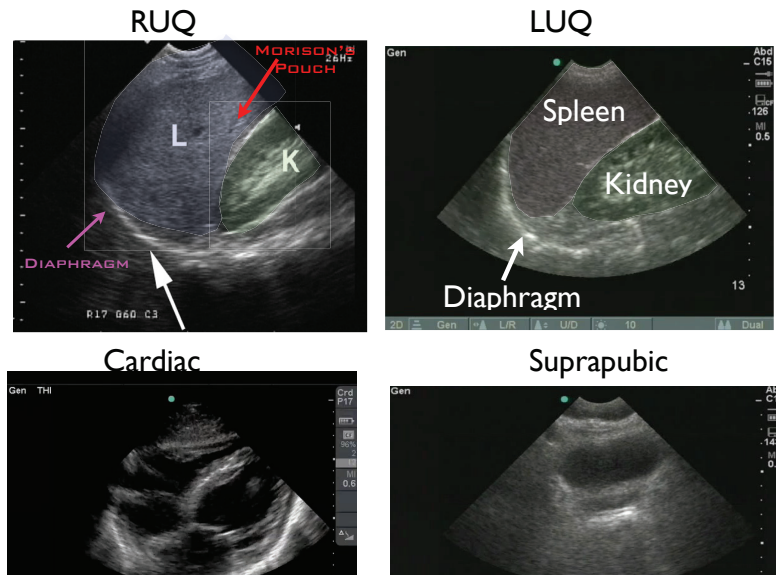


## Case

28 Male c/o shortness of breath s/p  
Pedestrian vs Auto

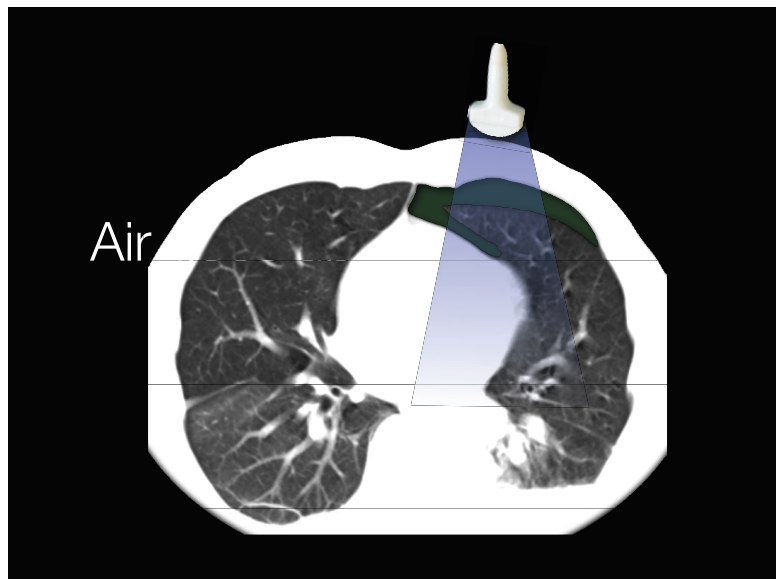
# Case

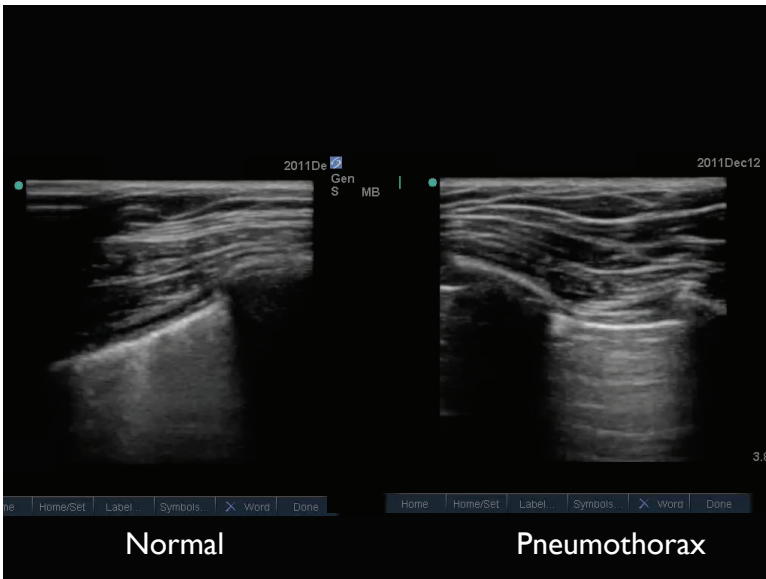
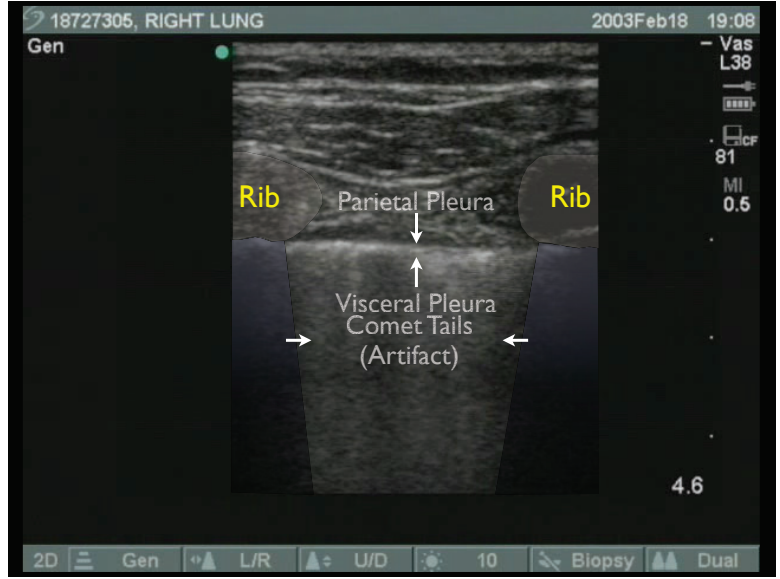
VS: 37.0 100/40 120 28 85%RA



## Significant Thoracic Trauma

1. Cardiac View
2. Pulmonary Views
3. RUQ View
4. LUQ View
5. Pelvic View



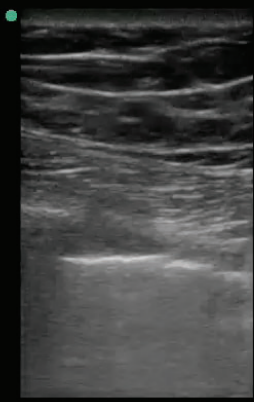


## Lung Sliding Pitfalls

- Lung Sliding & Z Lines complimentary
- “Lack of Lung Sliding” ≠ Pneumothorax
  - Splinting
  - Blebs
  - R Mainstem Intubation
  - Phrenic Nerve Palsy
  - Prior Thoracic Surgery/Disease

# Lung End Point

Res  
S MB

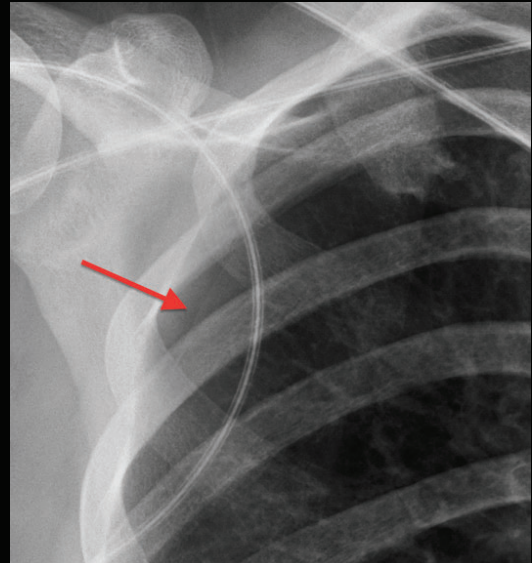


2012Nov14 03:47

Sup  
L25  
79%  
MI  
0.6  
TIS  
0.2

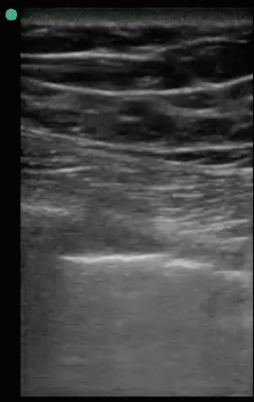
A □ □  
B ○ ○

4.3



# Lung End Point

Res  
S MB



2012Nov14 03:47

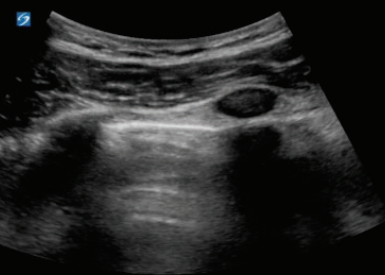
Sup  
L25  
79%  
MI  
0.6  
TIS  
0.2

A □ □  
B ○ ○

4.3

# Lung Views

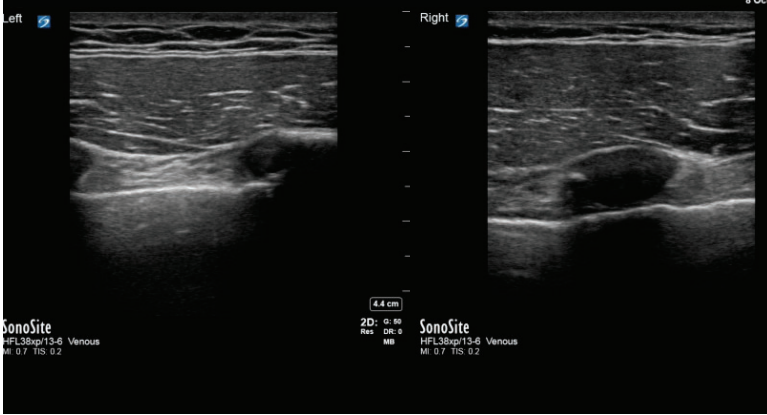
8 Oct 2018 / 11:16



SonoSite  
C60xp/5-2 Abdomen  
MI 0.6 TIS 0.2

6.0 cm  
2D: C-99  
Gen: DR: 6  
MB  
THI

# Lung Views

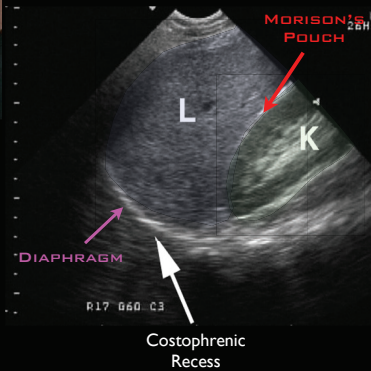


# Hemothorax

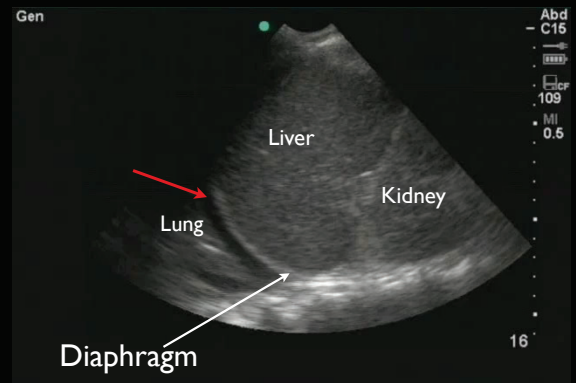


Fluid goes down

# Views



# Hemothorax

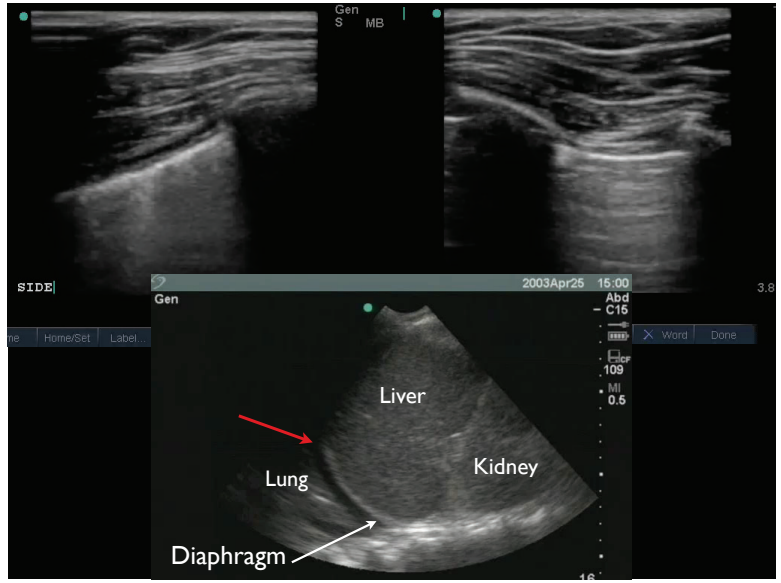




# Hemothorax

28 Apr 2017 / 14:14

+ SPINE SIGN



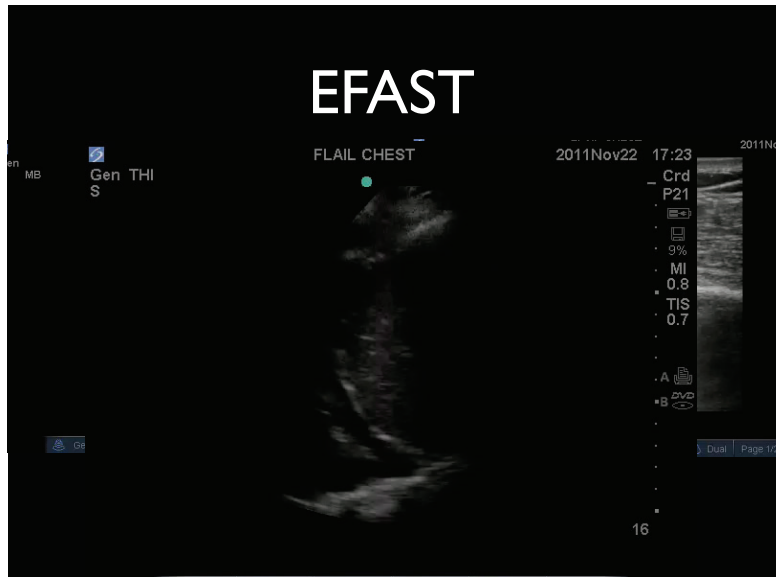
Back To Our Patient



# EFAST

FLAIL CHEST

2011Nov22 17:23





## Take Home Points



- Prioritize Cardiac and Lung Views
- Linear Probe for patients at ↑ risk for PTX
- “Lack of Lung Sliding” ≠ Pneumothorax

## Case



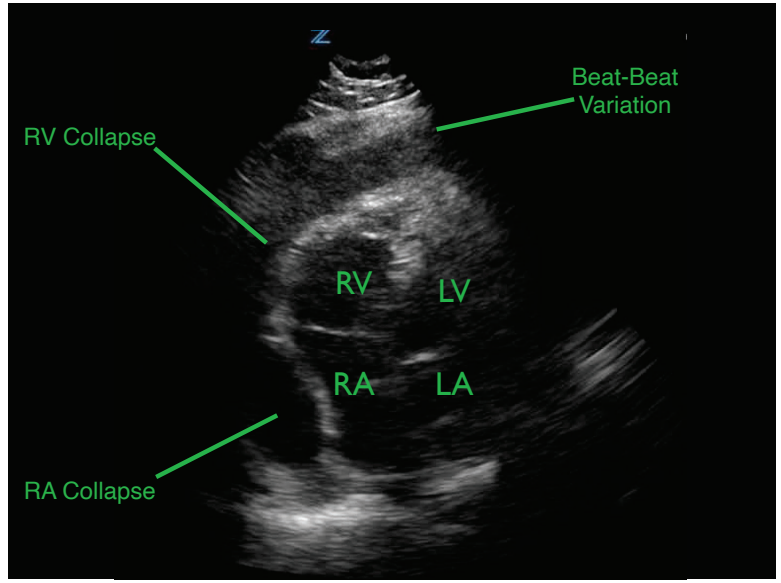
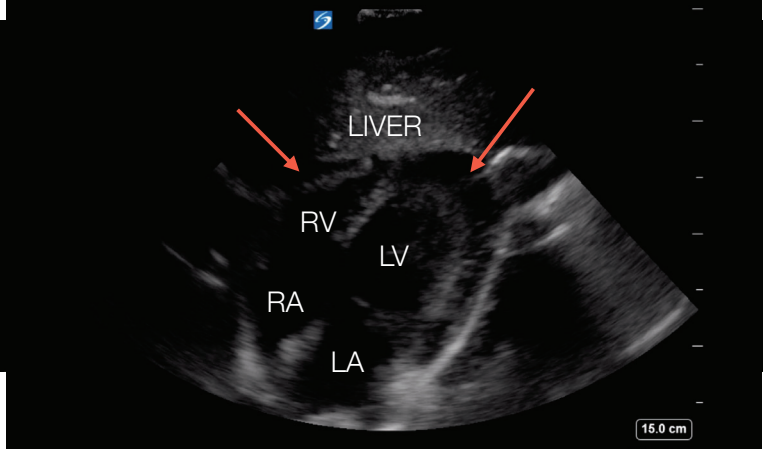
28 Male Trauma Activation with  
Traumatic Arrest s/p SW to the Chest

## Significant Thoracic Trauma

1. Cardiac View
2. Pulmonary Views
3. RUQ View
4. LUQ View
5. Pelvic View

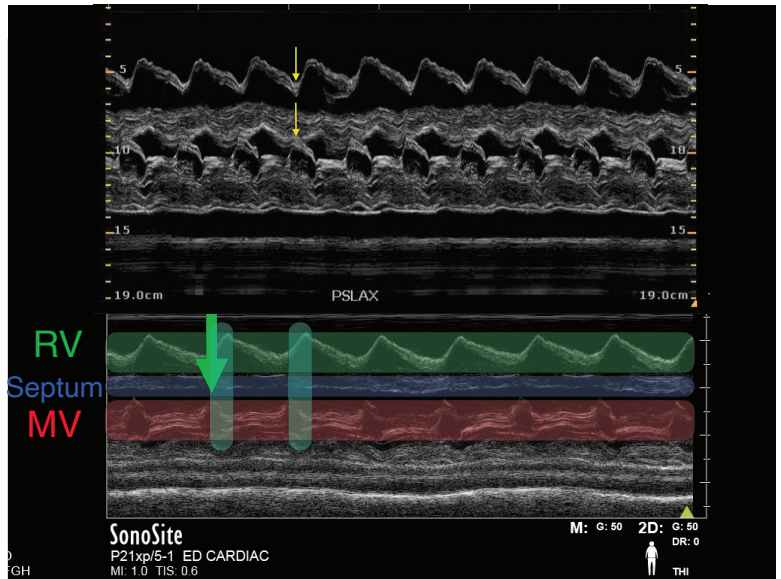
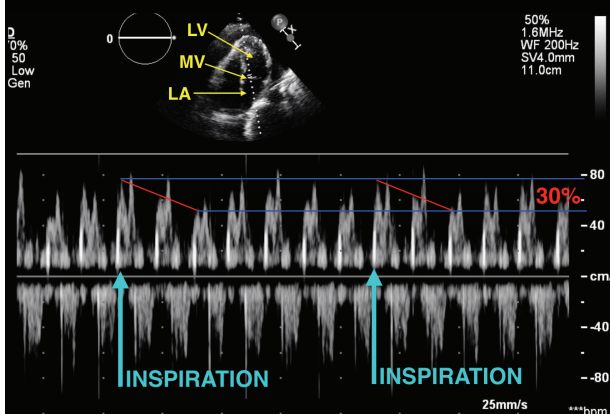


# POCUS



# POCUS

## Transvalvular Paradoxus





# Clinical Diagnosis

Hemodynamic Instability

+

=

Cardiac Tamponade

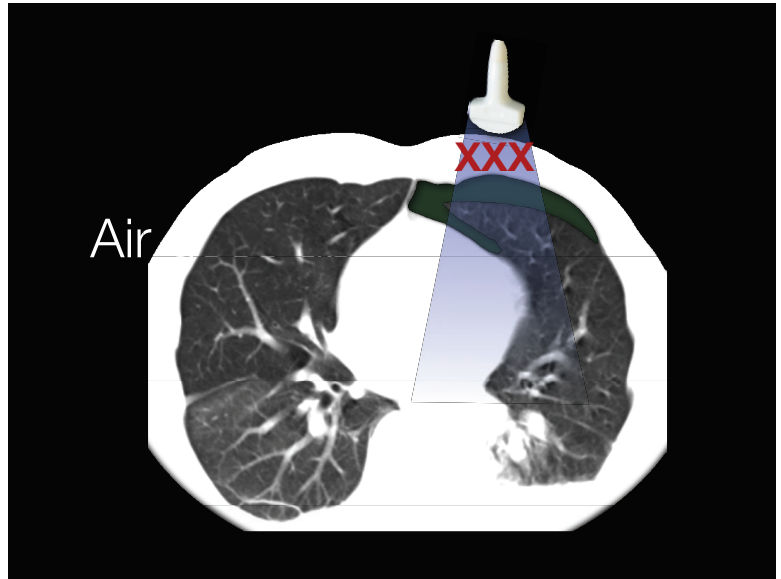
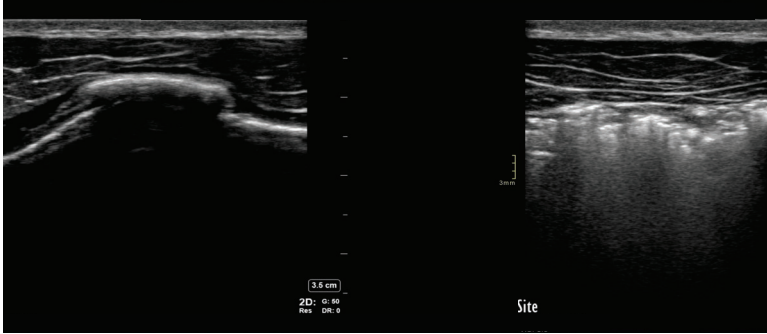
Pericardial Effusion



Back To Our Patient



# POCUS



## Take Home Points



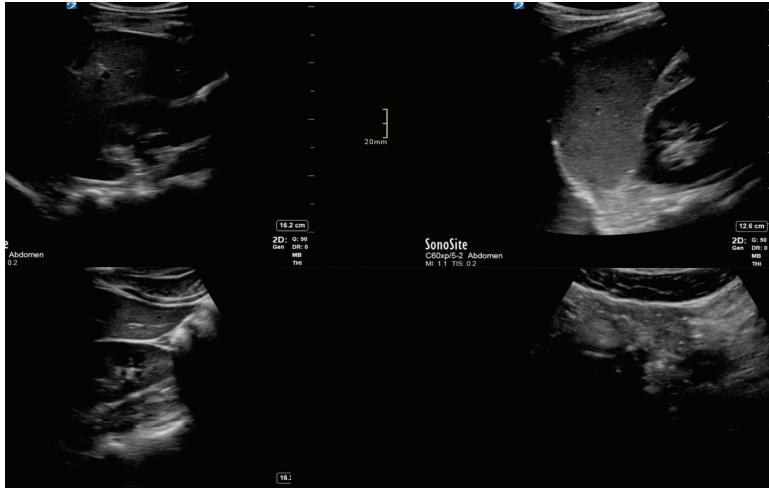
- Prioritize Cardiac and Lung Views
- SubQ Emphysema + Thoracic Trauma = PTX
- SubQ Emphysema obliterates your US Views

## Case

VS: 37.0 131/70 115 20 96%RA

28 Female Trauma Activation with Abd Pain s/p Rollover MVC

# POCUS #1



# Clinical Course

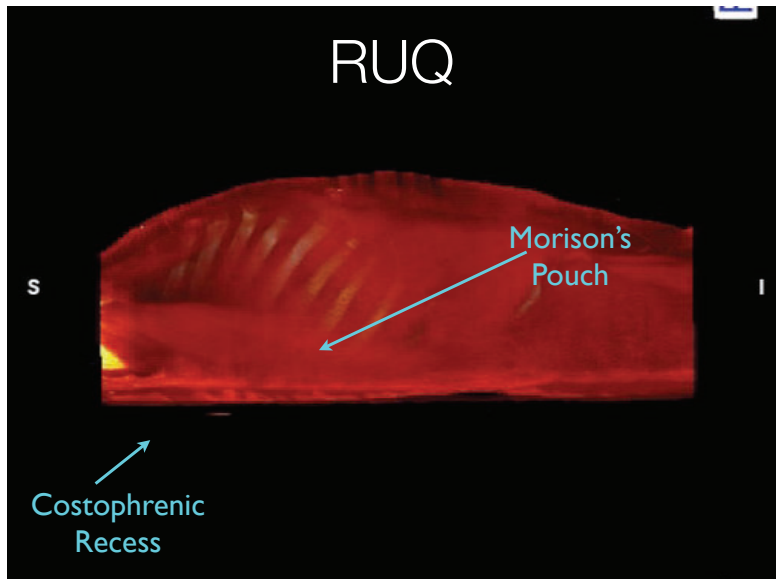
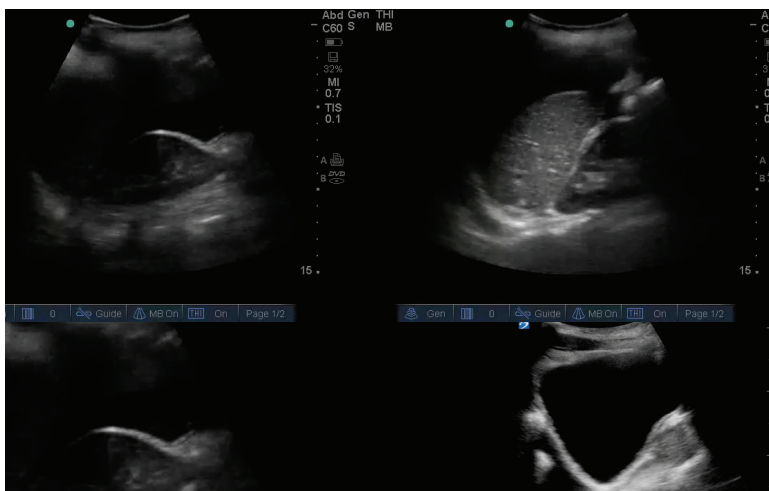
VS: 37.0 131/70 115 20 96%RA

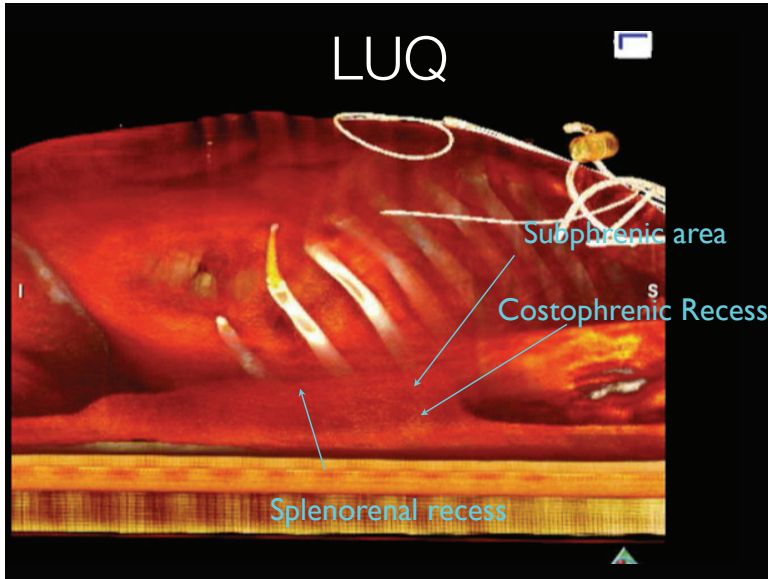


30 minutes

VS: 37.0 84/50 140 24 96%RA

# Repeat POCUS 30 min later



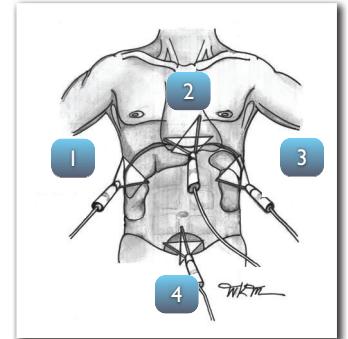


## Secondary/Serial FAST

### FAST Exam

- Increase Test Accuracy

- Sensitivity
- Specificity
- PPV
- NPV



gnbubnppic  
M. J. K. M. D. M. D. M. D. M. D.

The Journal of TRAUMA® Injury, Infection, and Critical Care

### Secondary Ultrasound Examination Increases the Sensitivity of the FAST Exam in Blunt Trauma

Lorne H. Blackbourne, MD, Dror Soffer, MD, Mark McKenney, MD, Jose Amortegui, MD, Carl I. Schulman, MD, Bruce Crookes, MD, Fahim Habib, MD, Robert Benjamin, MD, Peter P. Lopez MD, Nicholas Namias, MD, Mauricio Lynn, MD, and Stephen M. Cohn, MD

### Diagnostic Performance of Trauma US in Identifying Abdominal or Pelvic Free Fluid and Serious Abdominal or Pelvic Injury<sup>1</sup>

Linda White Nunes, MD, MPH, Salmi Simmons, MD, Michael J. Hallowell, MD  
Rita Kinback, MD, Stanley Trooskin, MD, Rosemary Kozar, MD

#### ABDOMINAL IMAGING

Iran J Radiol. 2014 August; 11(3): e21010.

DOI: 10.5812/iranjradiol.21010

Published online 2014 July 20.

Research Article

#### Diagnostic Accuracy of Secondary Ultrasound Exam in Blunt Abdominal Trauma

Alireza Rajabzadeh Kanafi<sup>1</sup>; Masoumeh Giti<sup>2</sup>; Mohammad Hossein Gharavi<sup>1</sup>; Ahmad Alizadeh<sup>1</sup>; Ramin Pourghorban<sup>3</sup>; Babak Shekarchi<sup>4\*</sup>

Jagjit et al. *Ultrasound J*. (2020) 12:48  
<https://doi.org/10.1186/s13089-020-00194-3>

The Ultrasound Journal

#### ORIGINAL ARTICLE

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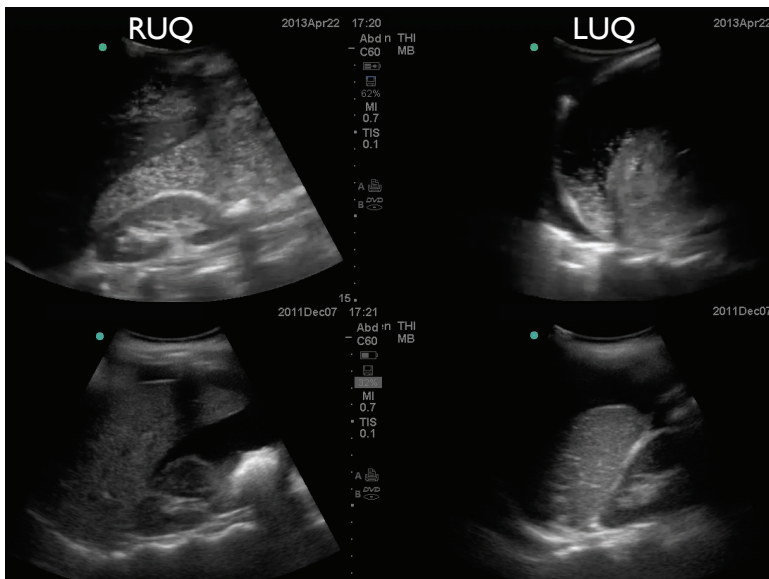
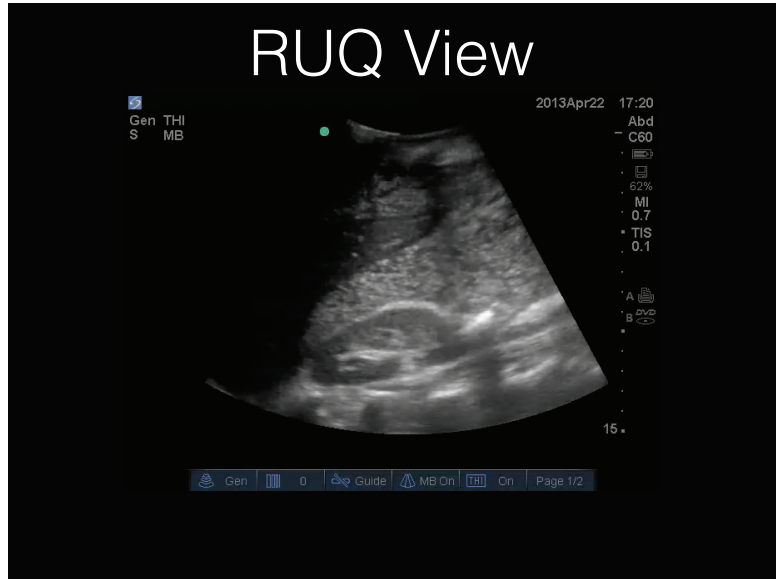
### Systematic Sonography Looking for Occult Wounds: accuracy of an abdominal ultrasound adjunct in penetrating trauma

Sri Devi Jagjit<sup>1</sup>, Jordan Rupp<sup>2\*</sup>, Robinson M. Ferre<sup>3</sup>, Mary Kate Jordan<sup>2</sup> and Brian Bales<sup>2</sup>



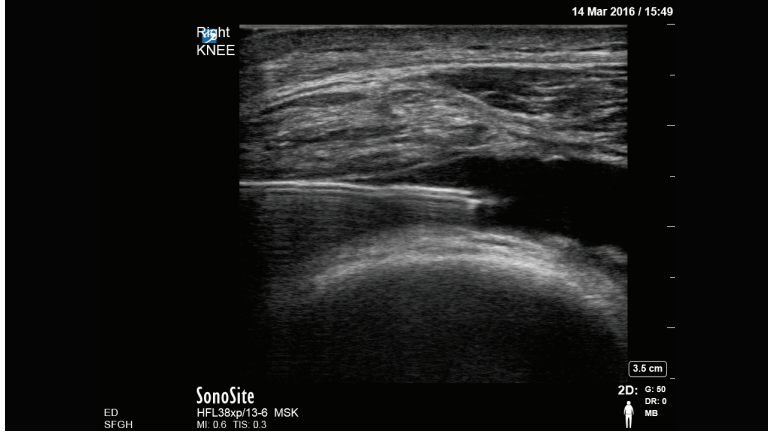
# Case

28 Male Trauma Activation with Abd Pain  
s/p GSW to Abdomen

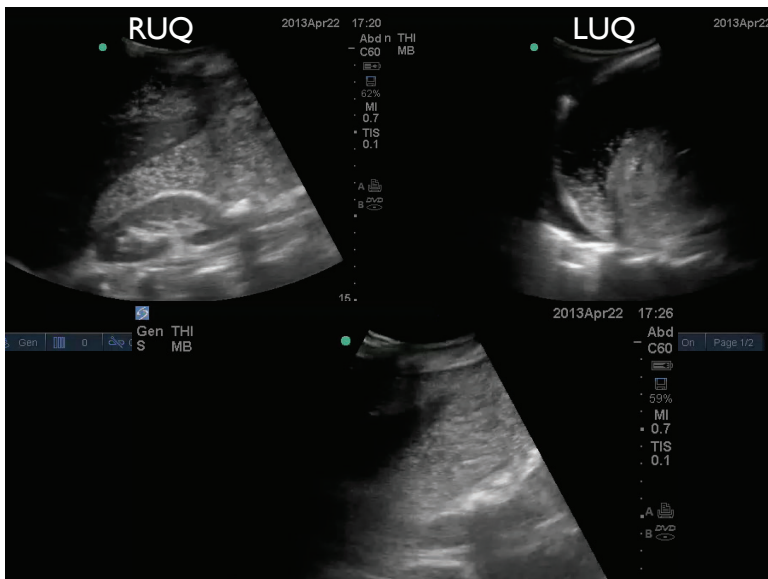




# Reverberation



# Back To Our Patient



# Fecal Peritonitis 2/2 Bowel Injury



## Take Home Points- Thoracic Trauma

- Prioritize Cardiac and Lung Views
- Linear Probe for patients at ↑ risk for PTX
- Low Frequency Probe for lung parenchyma
- Prioritize Cardiac and Lung Views
- SubQ Emphysema + Thoracic Trauma = PTX
- SubQ Emphysema obliterates your US Views

## Take Home Points- Abdominal Trauma

- Serial FAST exams improve test accuracy
- Recognize pattern of Free Air on POCUS
- RUQ & LUQ Views for Hemothorax Evaluation
- SubQ Emphysema obliterates your US Views

Thank You

