



Challenging Cases in Torso Stab Wounds

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Case #1

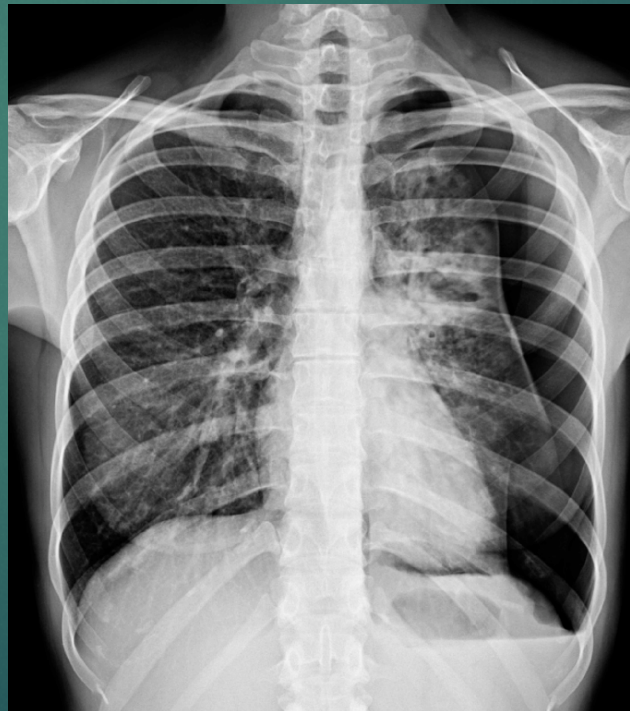
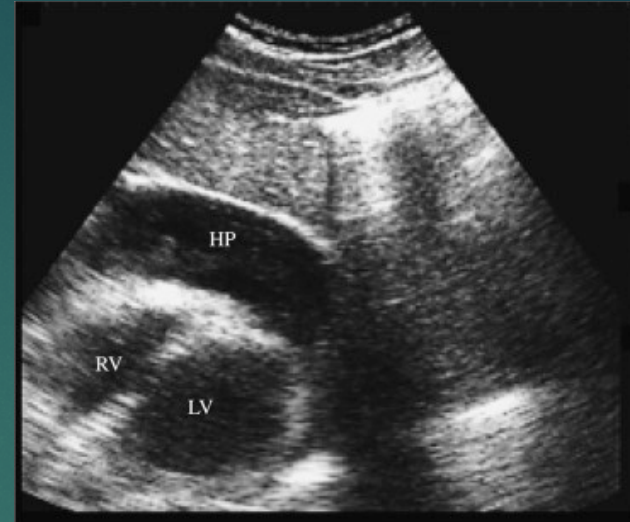
- ▶ 25 year old male, stab wound to the chest
 - ▶ Ambulance is 3 minutes out
 - ▶ 82/40, 128, 24, 91%
 - ▶ Patient is agitated and pulling the oxygen mask off





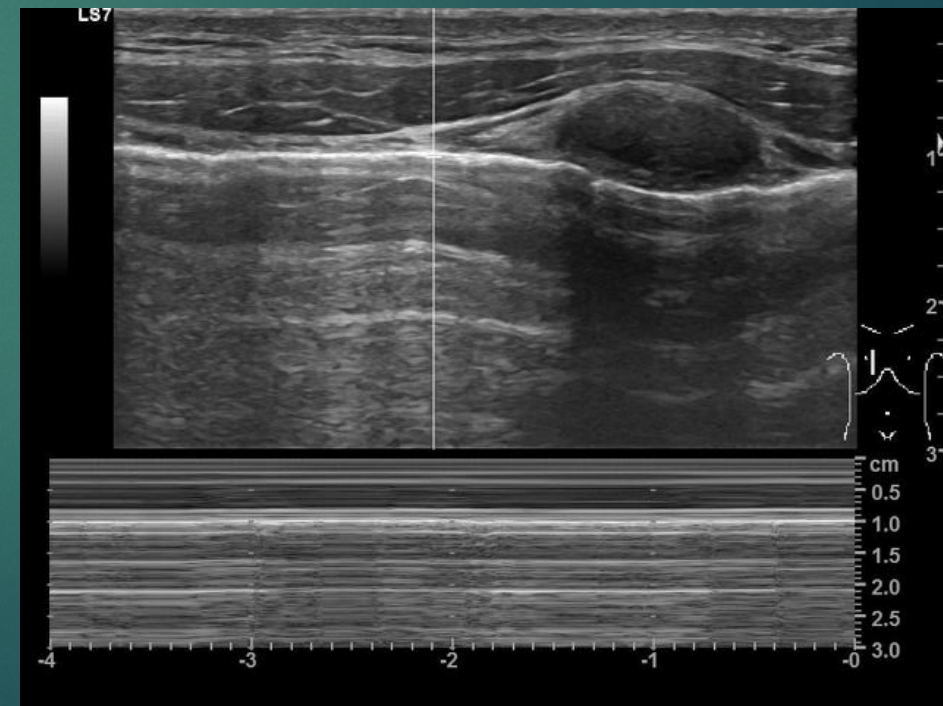
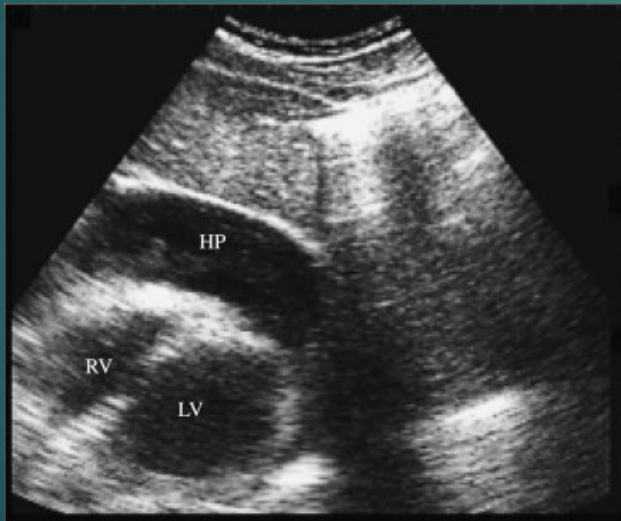
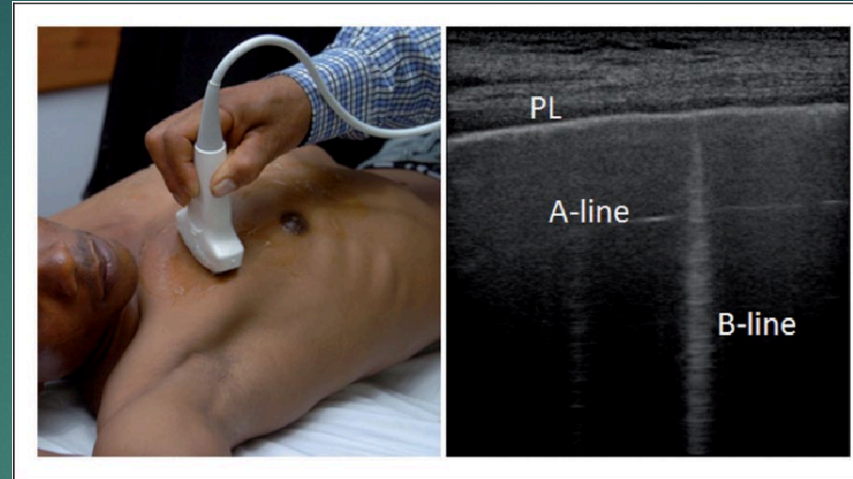
Case #1

- ▶ Ultrasound
- ▶ Chest decompression
 - ▶ Needle versus finger
- ▶ Chest tube
 - ▶ Pigtail?
 - ▶ Sedation
- ▶ Pericardiocentesis?
- ▶ Intubation?



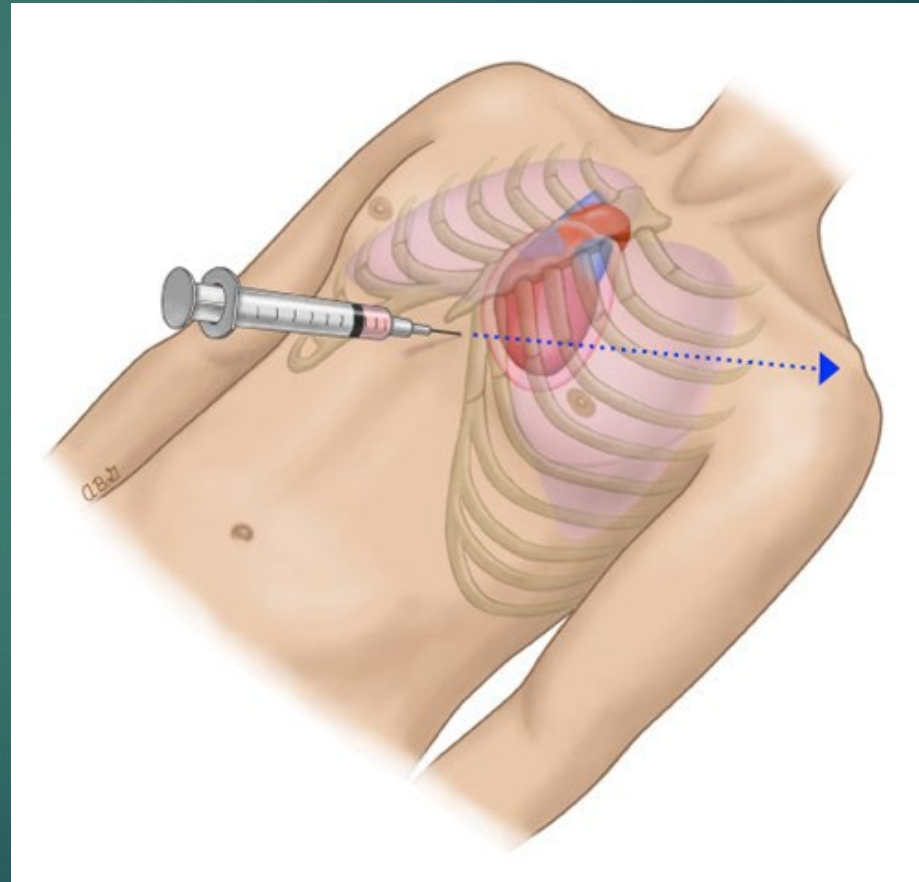
Ultrasound

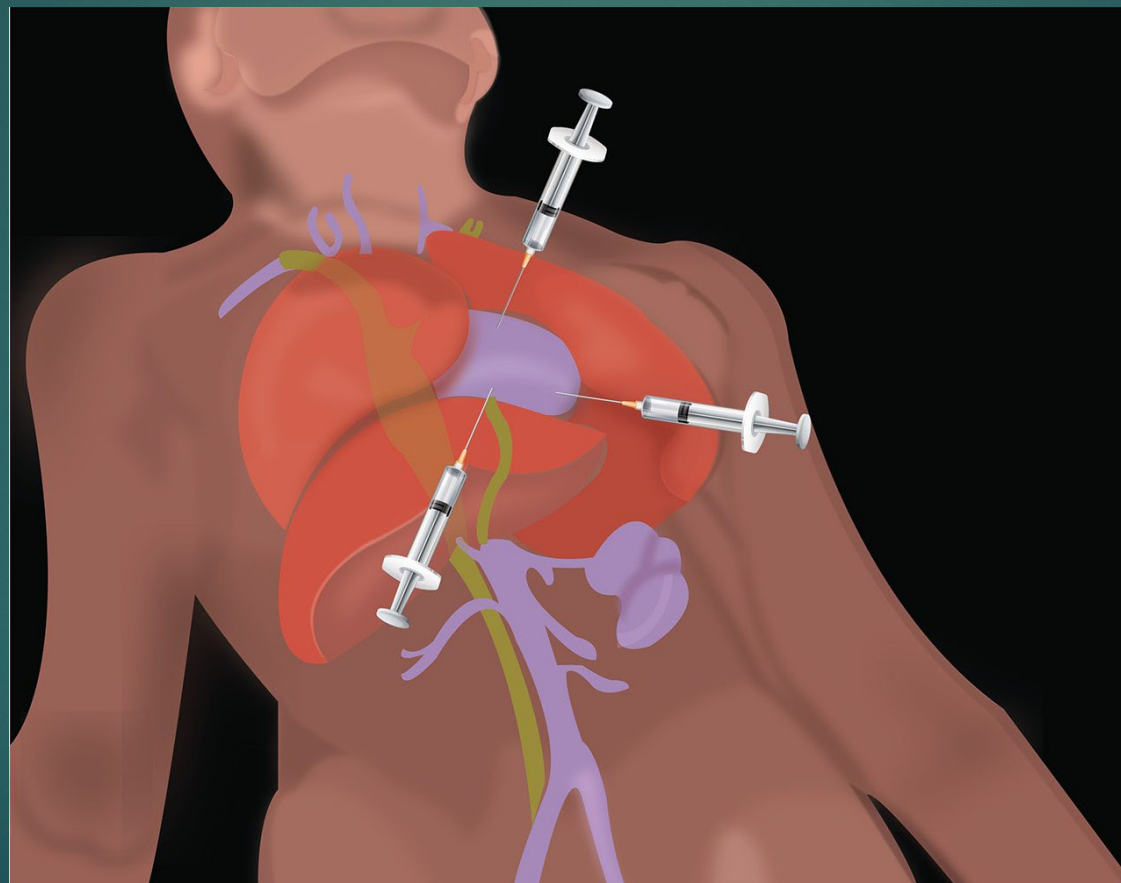
- ▶ Start with the chest
 - ▶ Pericardial fluid?
 - ▶ Lung sliding?



Pericardiocentesis

- ▶ Subxiphoid approach
 - ▶ Anatomic landmarks
 - ▶ 30-45 degrees
- ▶ Ultrasound
 - ▶ Can reveal the ideal entry site
 - ▶ Ultrasound assisted
 - ▶ Ultrasound guided
 - ▶ Alerhand et al
 - ▶ Amer J Emerg Med, 2022



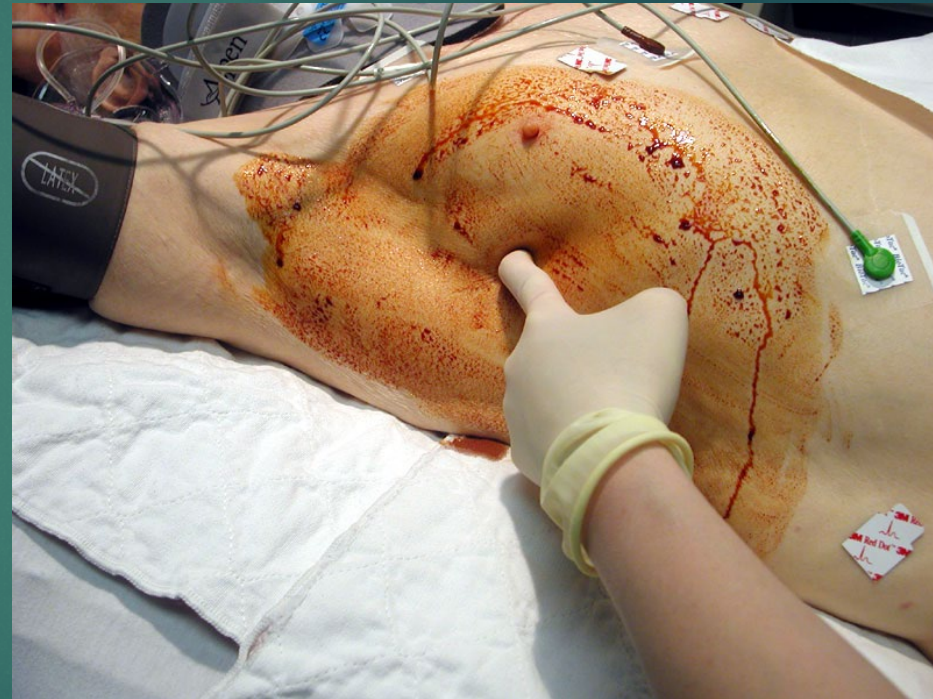


Pericardiocentesis



Tension Pneumothorax

- ▶ Penetrating injuries account for the majority
 - ▶ Kong et al
 - ▶ Eur J Trauma Emerg Surg, 2016
- ▶ Decompression
 - ▶ Needle decompression
 - ▶ Anterior versus lateral
 - ▶ Both fail commonly
 - ▶ Sanchez et al
 - ▶ Acad Emerg Med, 2011
 - ▶ Needle versus simple (finger) thoracostomy



Pneumothorax

- ▶ Chest tubes
 - ▶ Size matters!
 - ▶ The small (14Fr) percutaneous catheter (P-CAT) versus large (28-32 Fr) open chest tube for traumatic hemothorax: A multicenter randomized clinical trial
 - ▶ Kulvatunyou et al
 - ▶ J Trauma Acute Care Surg, 2021
 - ▶ Equally as effective in draining htx
 - ▶ No difference in complications
 - ▶ Better tolerated



Hemo/Pneumothorax

- ▶ Pigtail vs. chest tube
 - ▶ Outcomes of pigtail catheter placement versus chest tube placement in adult thoracic trauma patients: a systematic review and meta-analysis
 - ▶ Beeton et al
 - ▶ Am Surg, 2023
 - ▶ 7 studies
 - ▶ Pigtails were associated with
 - ▶ Higher initial output volume
 - ▶ Reduced risk of needing a second intervention
 - ▶ Shorter tube duration



No Chest Tube?

- ▶ Observational management of penetrating occult pneumothoraces
 - ▶ Genna et al
 - ▶ J Trauma Acute Care Surg, 2021
 - ▶ Majority can be safely observed
- ▶ Western Trauma Association Algorithm
 - ▶ < 20% on CXR and stable, observe
 - ▶ de Moya et al
 - ▶ J Trauma Acute Care Surg, 2021



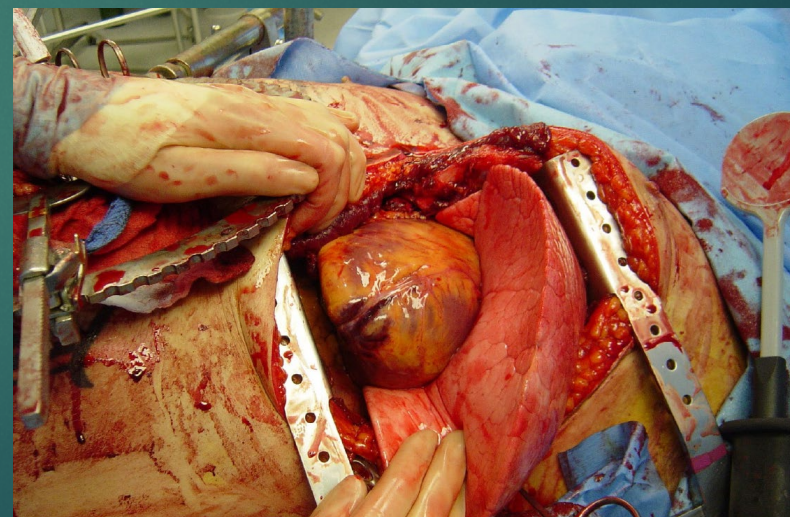
Transfers

- ▶ Should decompress prior to transfer
 - ▶ Decompression in route
- ▶ Lung re-expansion attenuates bleeding
- ▶ 90% need no further intervention
 - ▶ Tran et al
 - ▶ J Emerg Med, 2021



Additional Considerations

- ▶ Sedation
 - ▶ Ketamine
- ▶ Intubation
 - ▶ Resuscitate first when possible
 - ▶ Duggan et al
 - ▶ Emerg Med Clin North Amer, 2023
- ▶ ED Thoracotomy
 - ▶ Resuscitative thoracotomy
 - ▶ May not be practical in many settings
 - ▶ Best survival has been reported from stab wounds to the chest



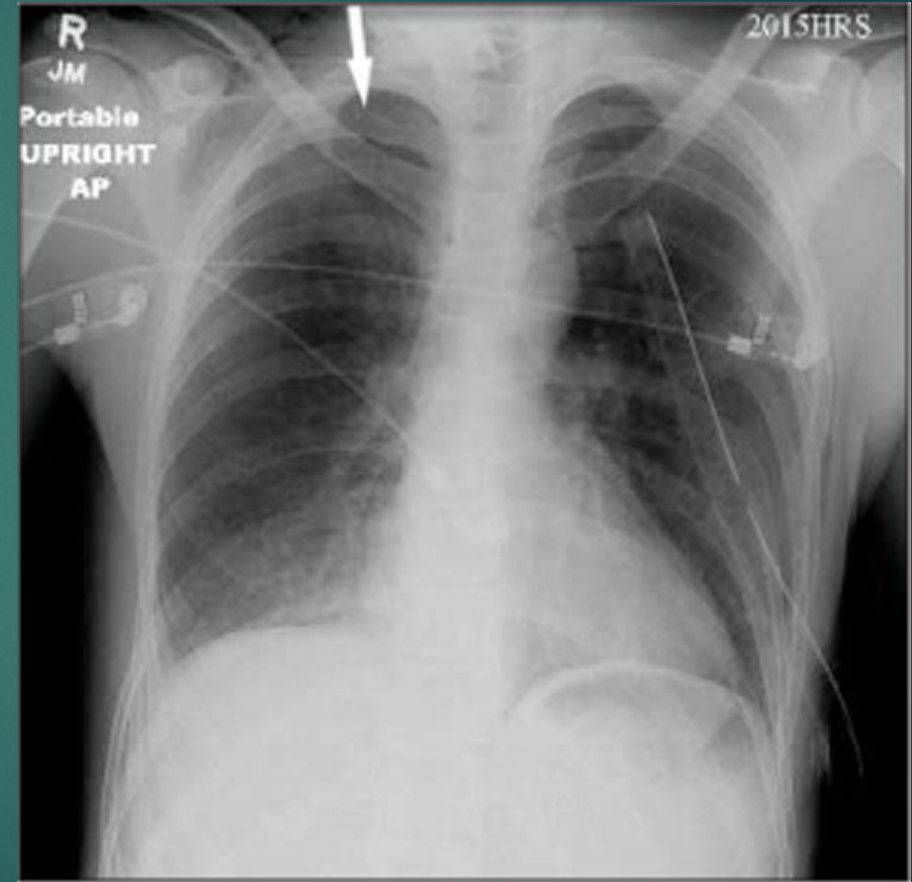
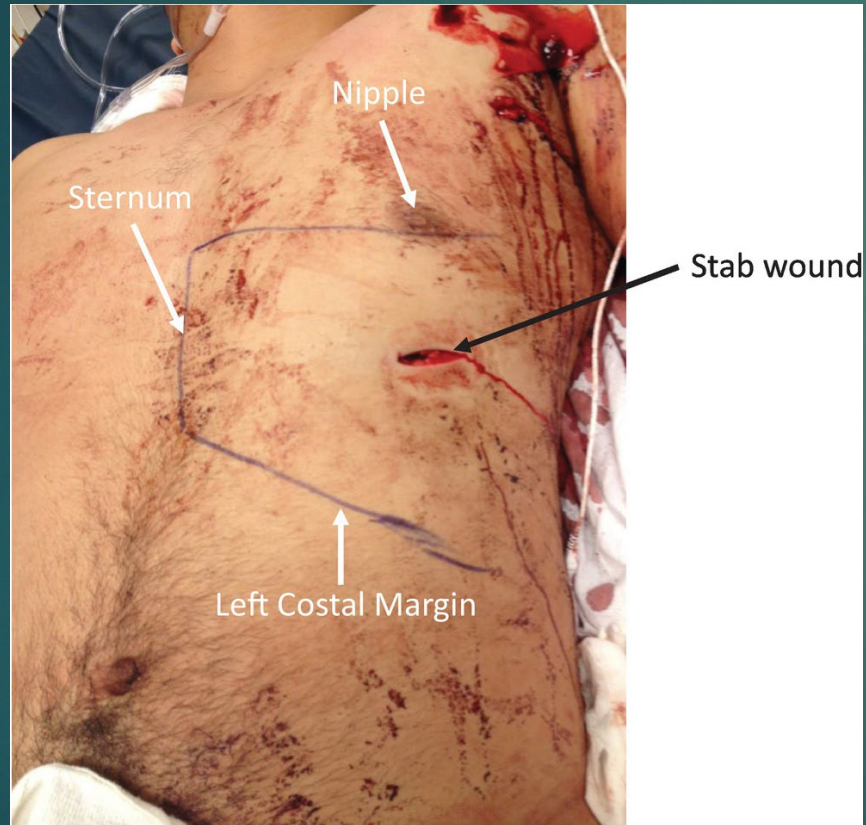
Left Diaphragm Injury

- ▶ Sits near the 5th and 6th intercostal space at rest
- ▶ Can occur from penetrating or blunt trauma
- ▶ Frequently missed
 - ▶ May not present for years after the initial injury





Diaphragm Injury



Stab Wound to the Chest – Diaphragm Injury



Case #2

- ▶ 32 year old male with a stab wound to abdomen
 - ▶ 138/80, 96, 98%
 - ▶ Normal ultrasound
 - ▶ Normal CXR
 - ▶ What now?



Case #2

- ▶ Pertinent negatives
 - ▶ Not unstable
 - ▶ No peritonitis
 - ▶ No evisceration
- ▶ Probe?
- ▶ Local wound exploration
 - ▶ 100% sensitivity verses 95% for CT scan
 - ▶ Sarici, Kalayci
 - ▶ Am J Emerg Med, 2018



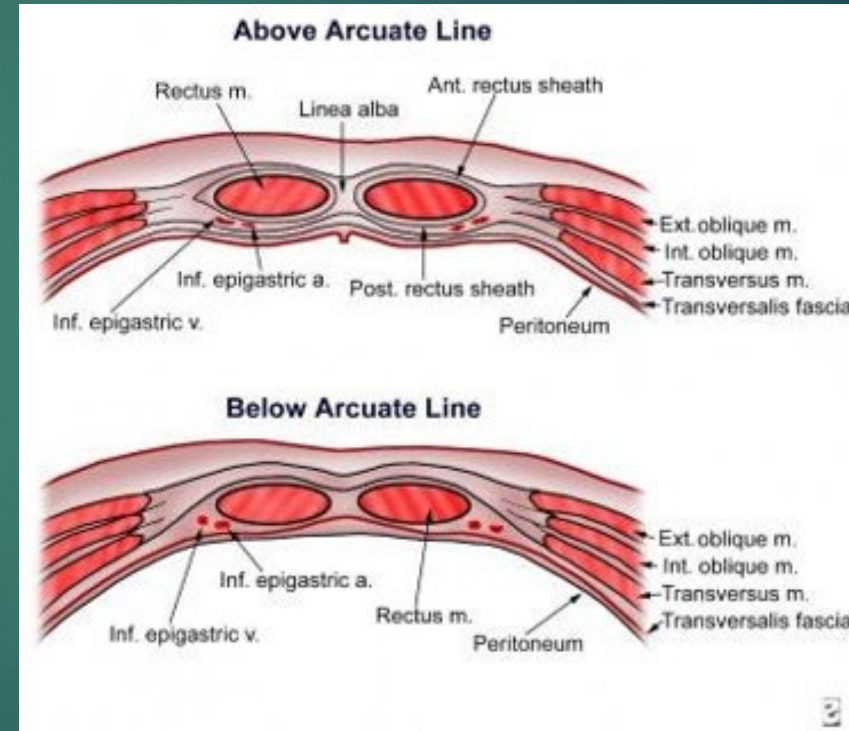
Anterior Abdominal Stab Wound

- ▶ More than 25% do not penetrate the peritoneal cavity
 - ▶ Cothran et al
 - ▶ Am J Surg, 2009
- ▶ Only half that penetrate the peritoneum require surgery
 - ▶ Leppaniemi et al
 - ▶ Br J Surg, 1999
- ▶ Most common organs injured
 - ▶ Small bowel
 - ▶ Liver
 - ▶ Colon



Anterior Abdominal Stab Wounds

- ▶ Local wound exploration with negative findings is sensitive and reliable
 - ▶ Biffl et al
 - ▶ J Trauma, 2009
- ▶ Intact posterior rectus fascia (above the arcuate line) or transversalis fascia allows safe discharge
 - ▶ Sugrue et al
 - ▶ ANZ J Surg, 2007



Case # 3 – Stab Wound to the Back

- ▶ Challenges in stab wounds to the back
 - ▶ Remove?



Case #3a – Stab Wound to the Back

- ▶ 28 year old male with a stab wound to the back
- ▶ Probe?
- ▶ Local wound exploration?
- ▶ CT scan



Summary

- ▶ Ultrasound the chest first
- ▶ Think pig tails whenever you can
- ▶ Decompress and resuscitate before you intubate
- ▶ No wound probing
- ▶ Explore anterior abdominal wounds
- ▶ CT back wounds if you are not sure

