The Leeds Teaching Hospitals NHS
NHS Trust

Thoracic injuries and the NEED for chest tubes

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Epidemiology of Thoracic Trauma

- **150 000 deaths in USA**
- **25% Thoracic injuries**
- **Cause of injuries leading to accidental death**

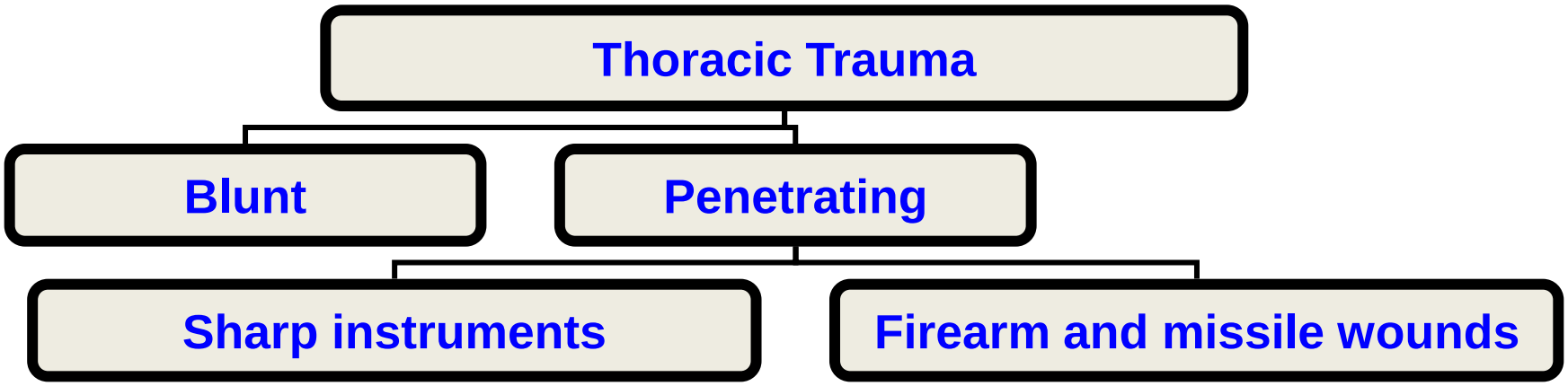
RTA 48%
Suicide 29%
Homicide 22%
Miscellaneous 1%

Epidemiology of Thoracic Trauma

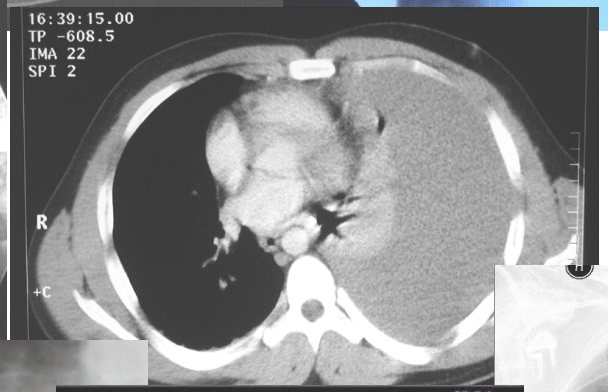
- **Specific types of Thoracic organ Pathology**

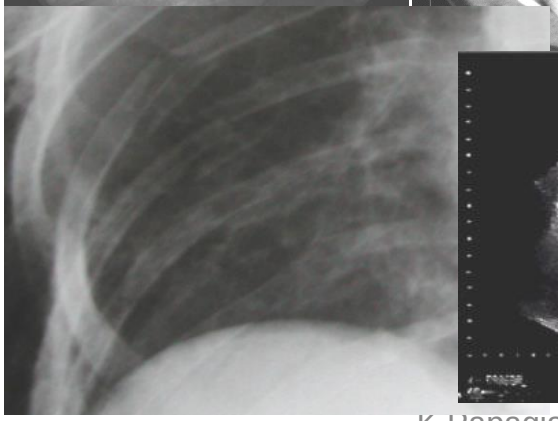
Chest wall	54
HT	21
Pulmonary	21
PT	20
Flail Chest	13
Miscellaneous	18

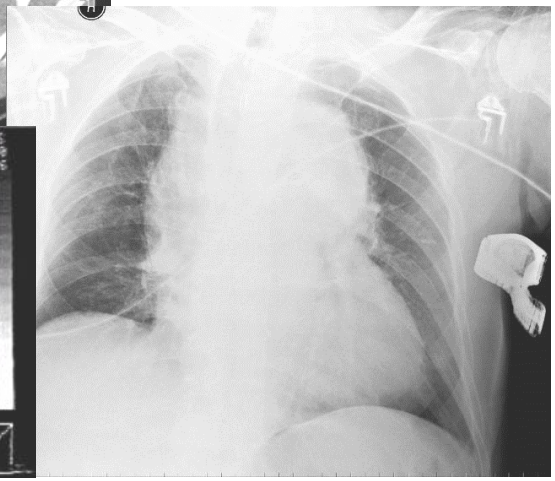
Classification of Thoracic Trauma



Useful tests in suspected Thoracic Injuries







- CxR
- CT
- MRI
- ANGIO
- US
- CONTRAST

Management

- Blunt

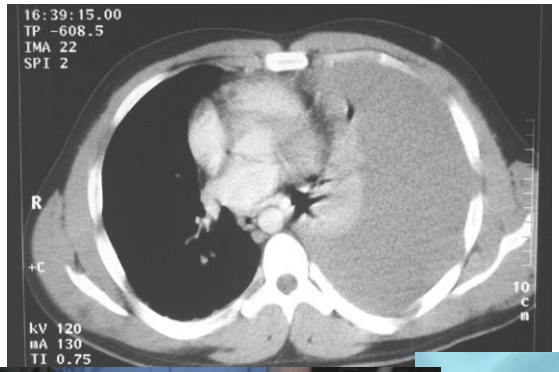
  Surgery required in 10% of cases

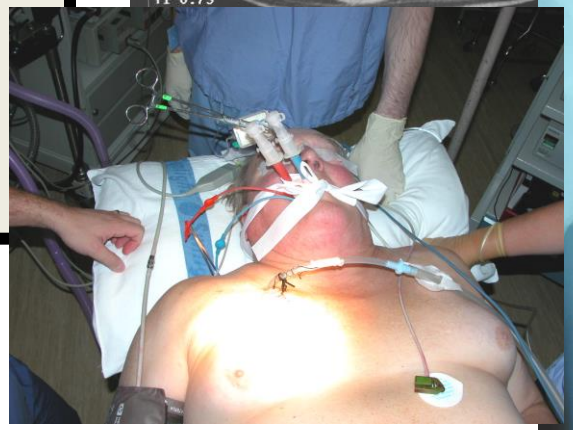
- Penetrating

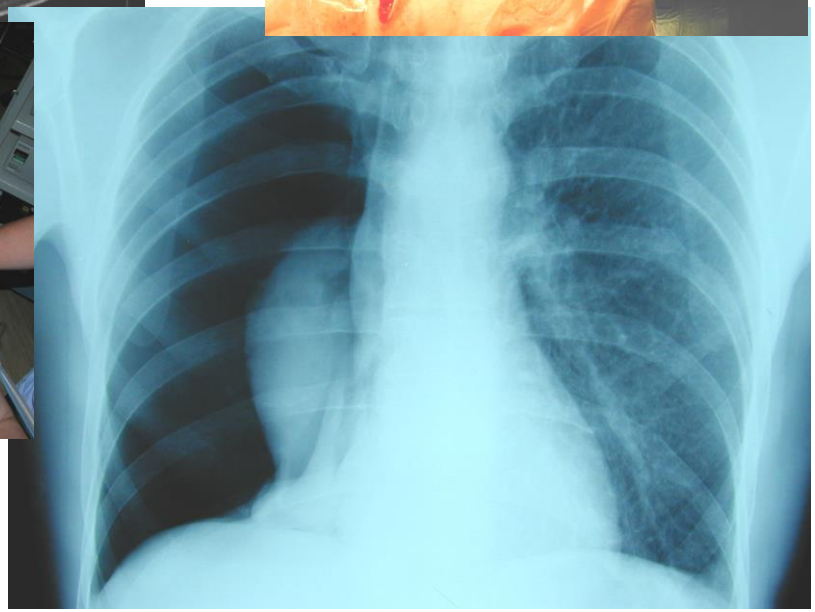
  surgery required in 15%-30% of cases

Immediately life threatening injuries

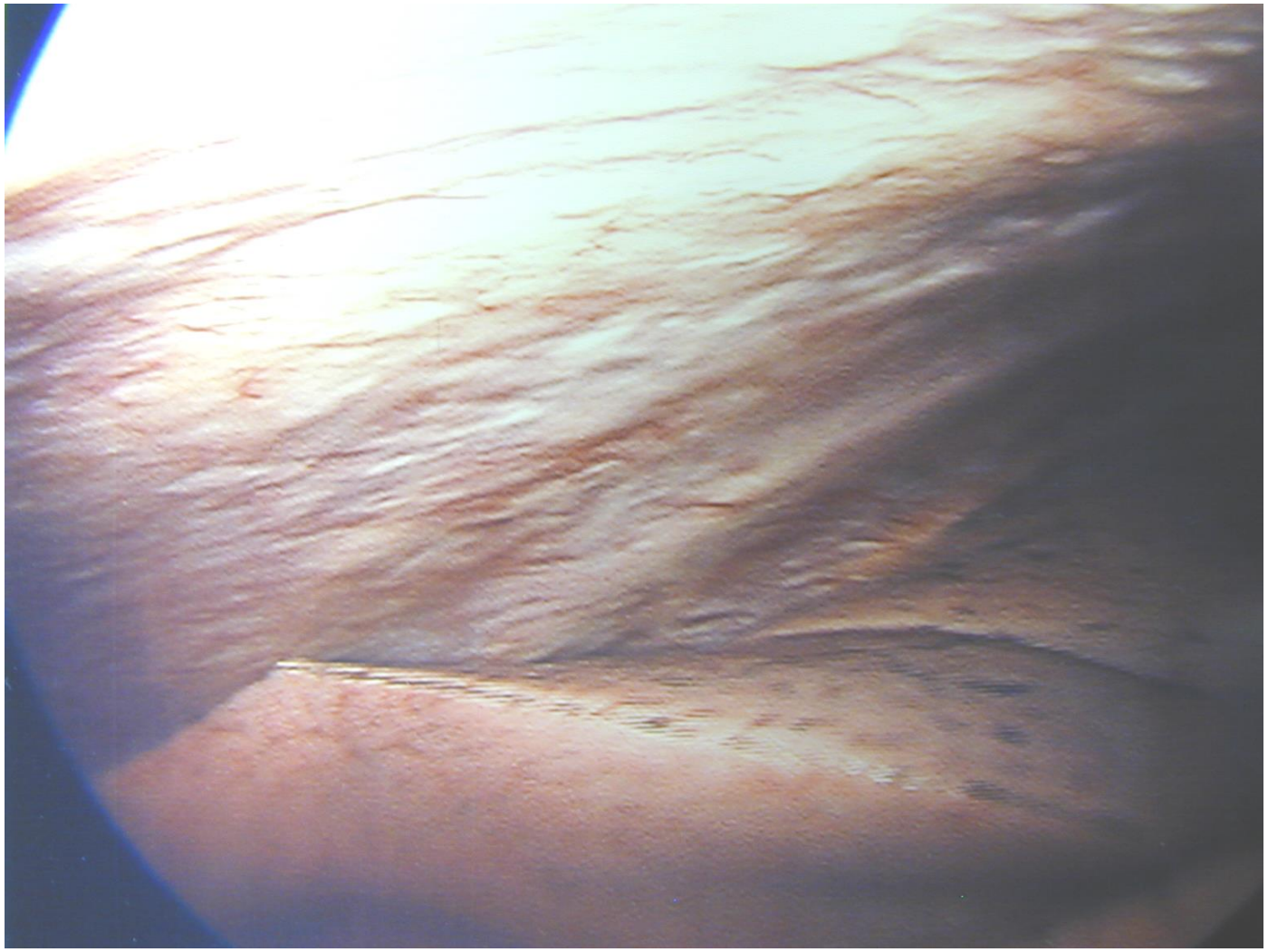
- Airway obstruction
- Tension PT
- Open PT
- Massive Hemothorax
- Flail chest
- Cardiac tamponade







Management of pleural space



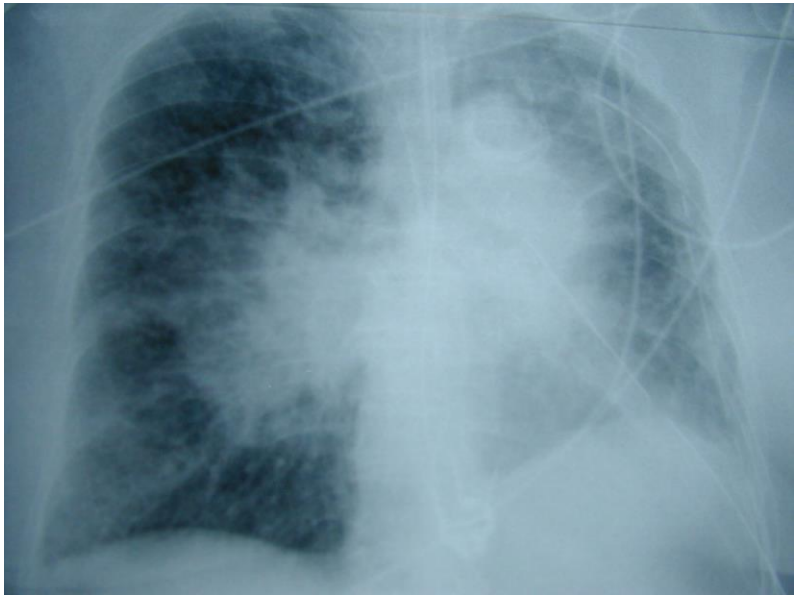
Overall indications for chest tube insertion in trauma patients

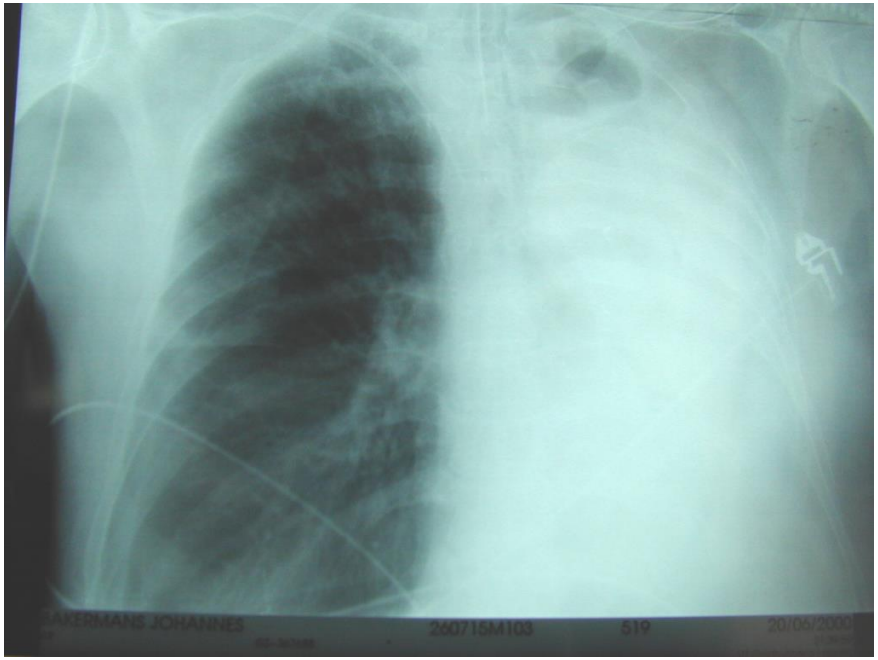
PLEASE EXERCISE COMMON SENSE

Pneumothorax	**Size?**
	Injury?
	Individual patient and condition
Haemothorax	Size?
	Individual patient and condition
Haemo Pneumothorax	Size?
	Consider different?
Chest injury with the above and	GA for surgery
	GA due to deterioration
Consider CONDITIONS	Aero med
	Profession

Exercise clinical judgment and avoid unnecessary actions

CRITICAL THINKING IS MORE IMPORTANT IN EMERGENCY CONDITIONS





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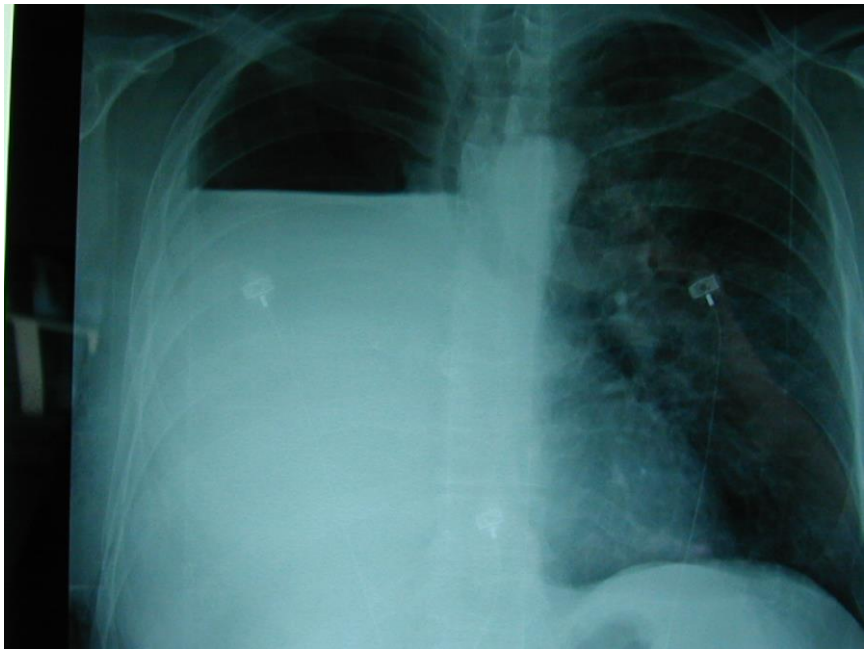
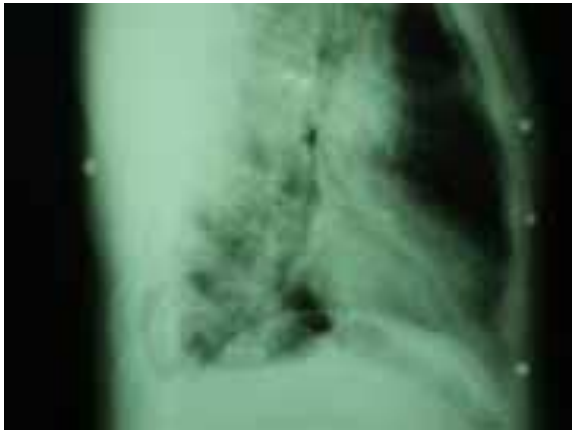


Pedestrian. RTA. Pain in right side. Has rib fractures.

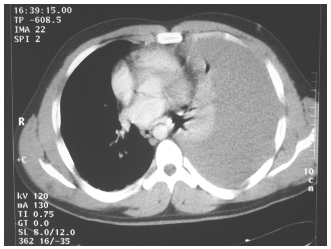
WHAT NEXT?

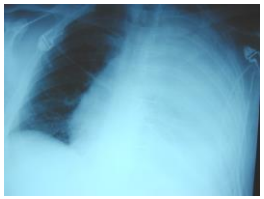


Large or Small Bore Drains?

- Does size matter in type of pathology?

YES!





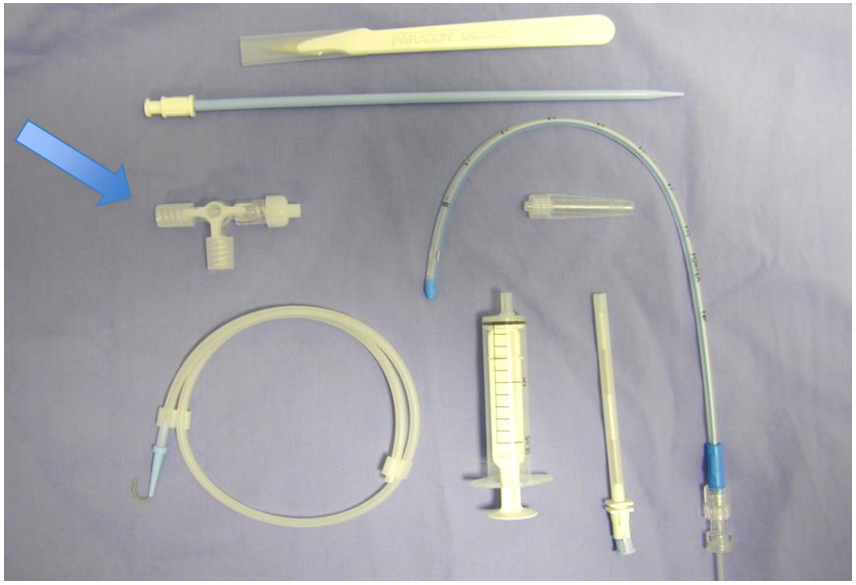
- What really matters is:

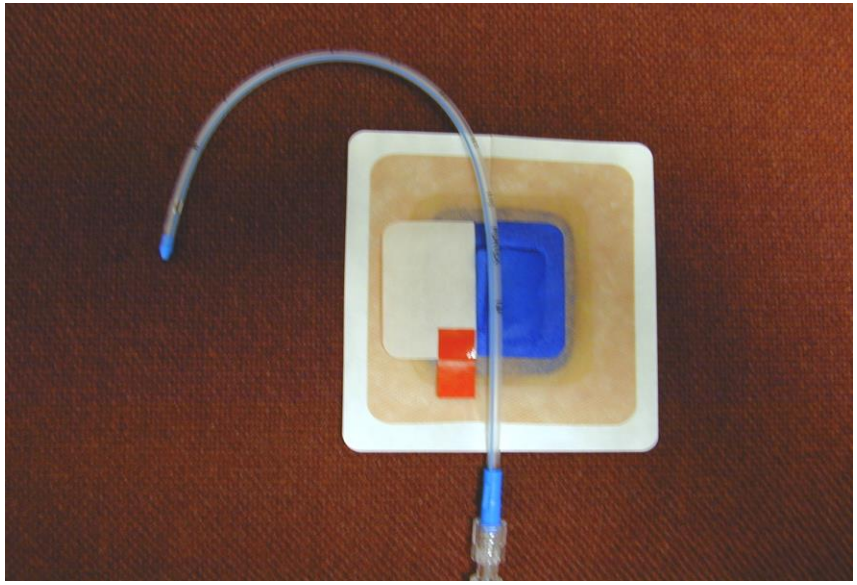
<u>Safe</u> placement and <u>Appropriate</u> position of the drain in the pleural space!

Large bore drains

- Most commonly used are: 28Fr, 32 Fr with or without trocar (28Fr has green tip, 32Fr brown tip)

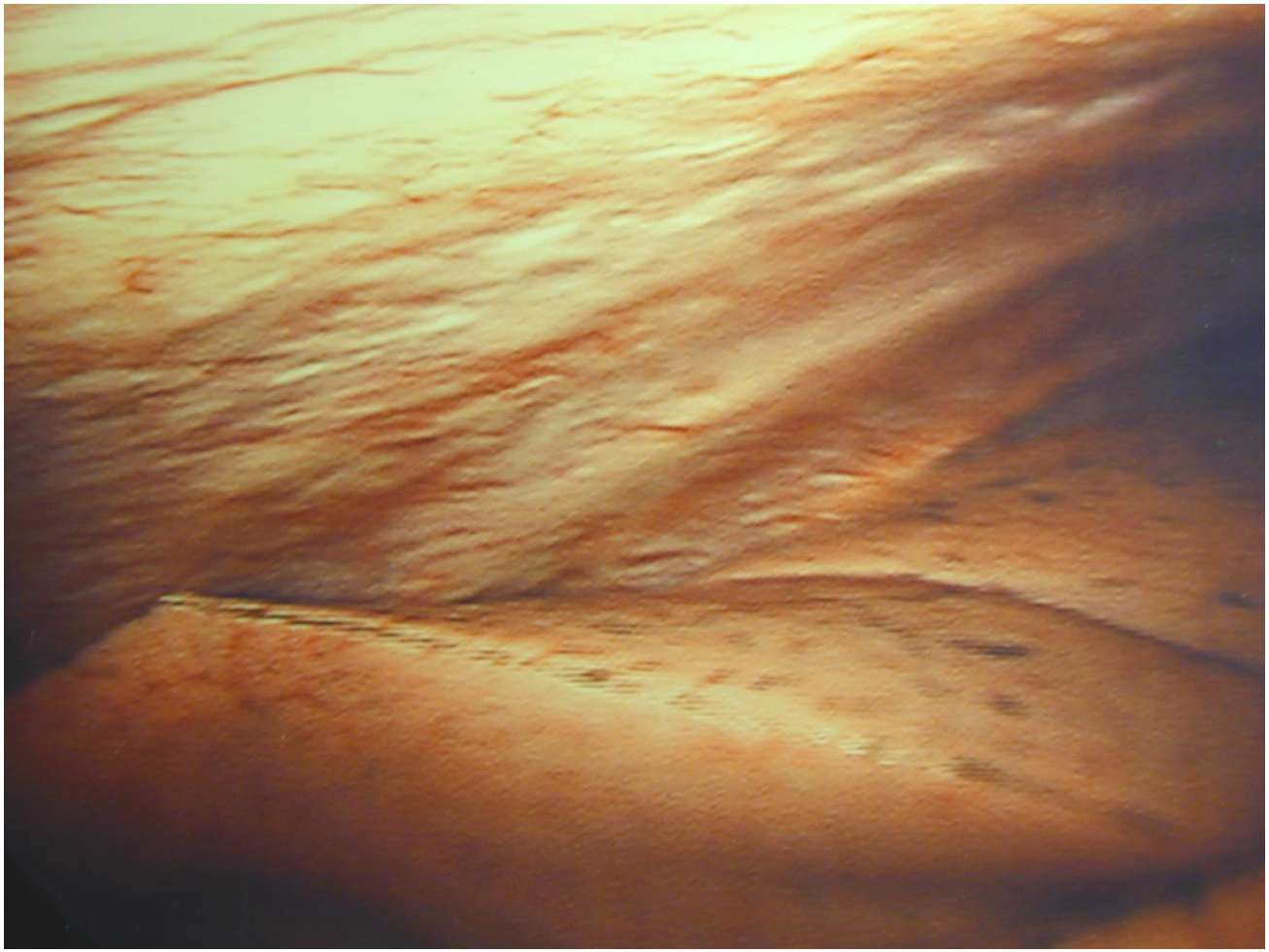
Small bore drains



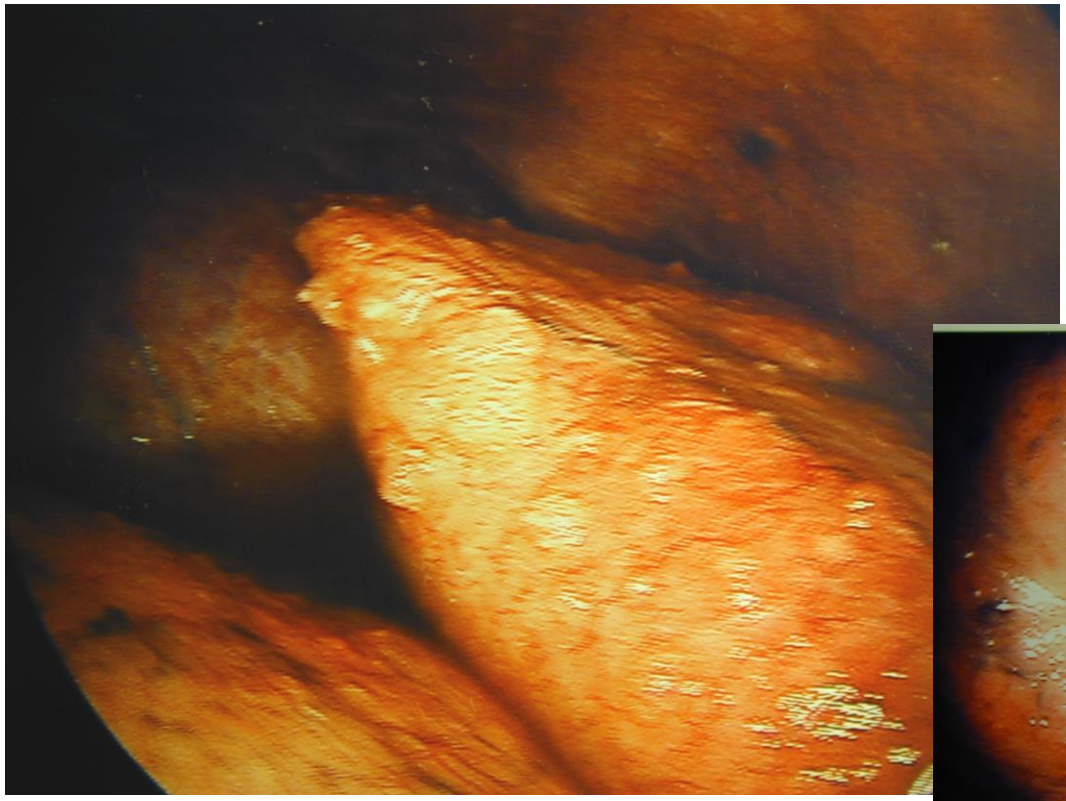


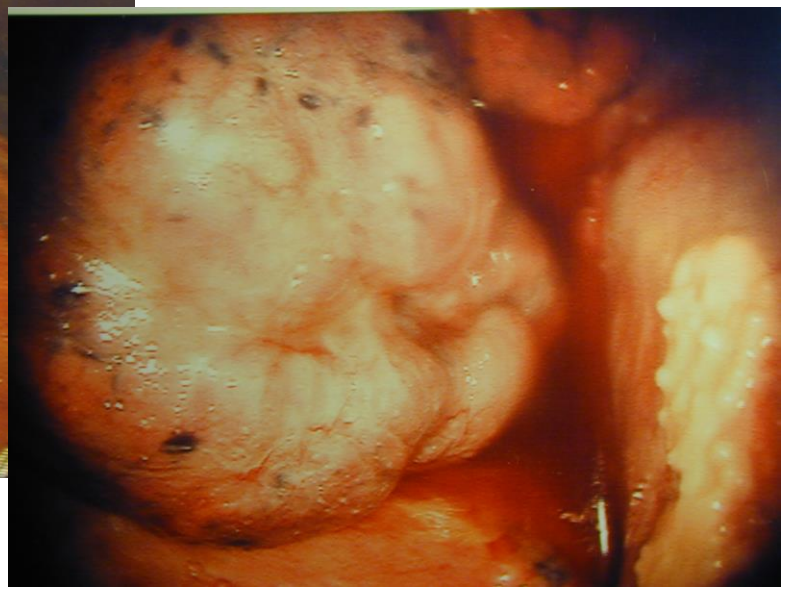
Is there a single safe technique for insertion of intercostal drains?

ARE YOU ABLE TO ‘SEE’ THE PLEURAL SPACE??????

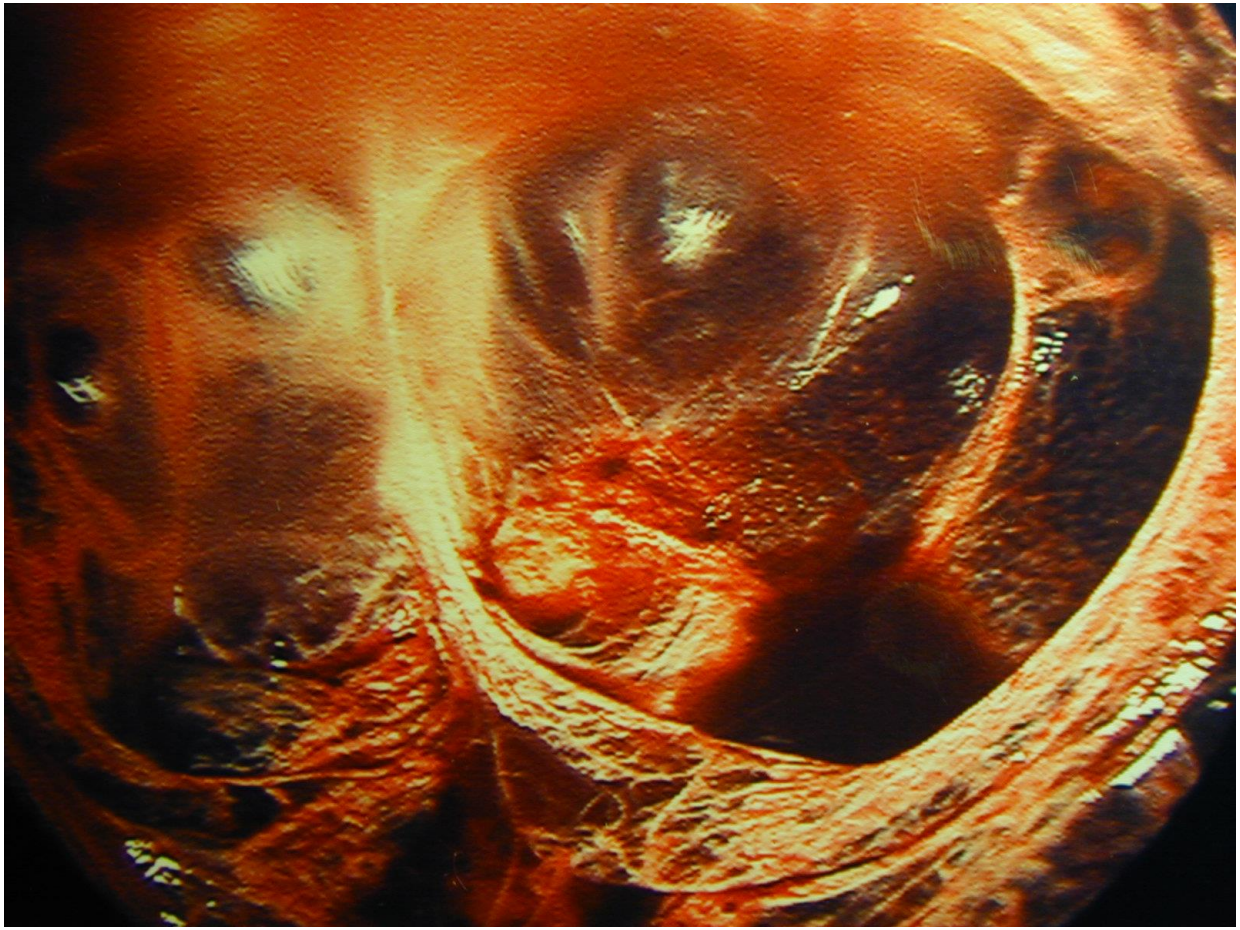


The Lung with the abnormal compliance





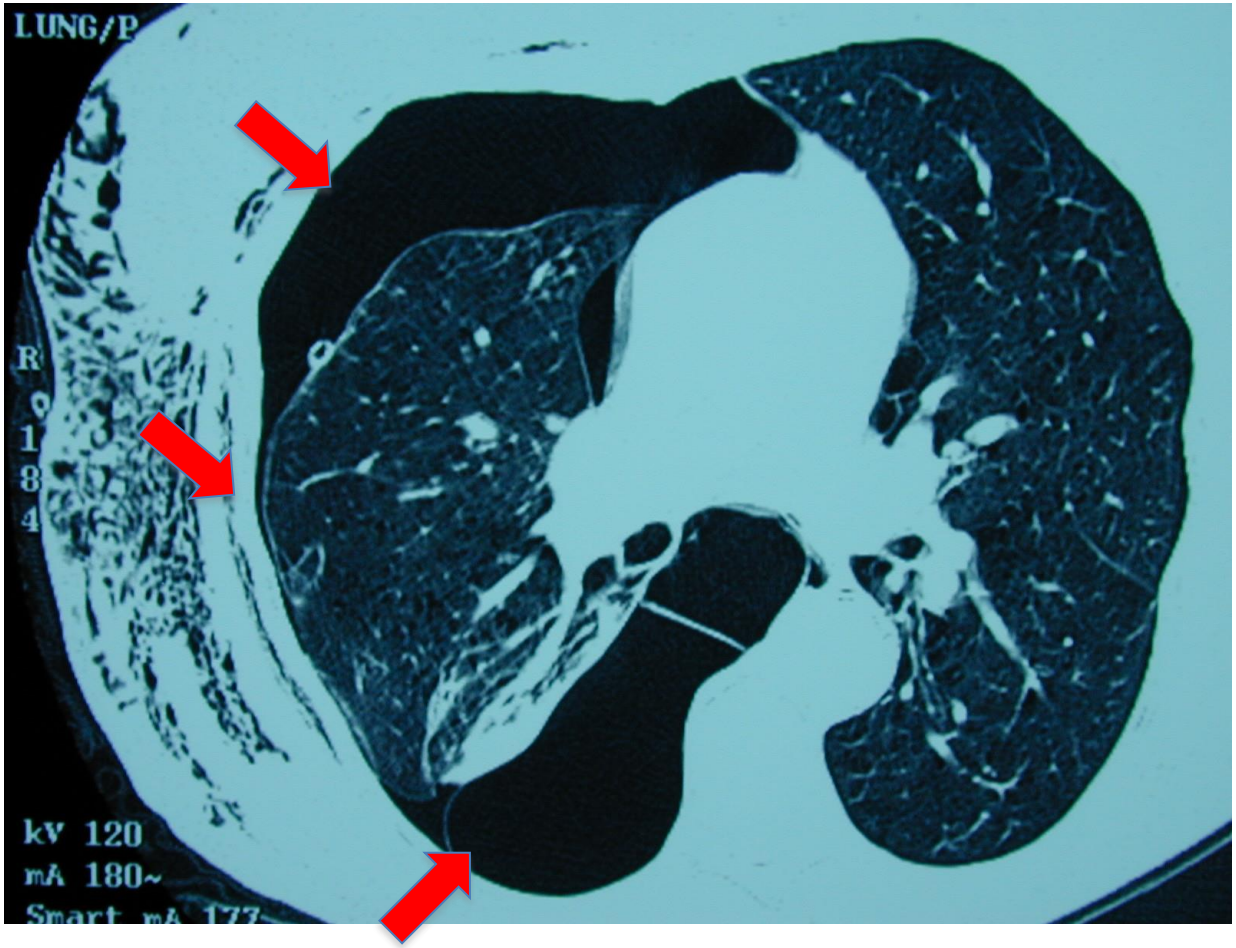
The compartmentalized space



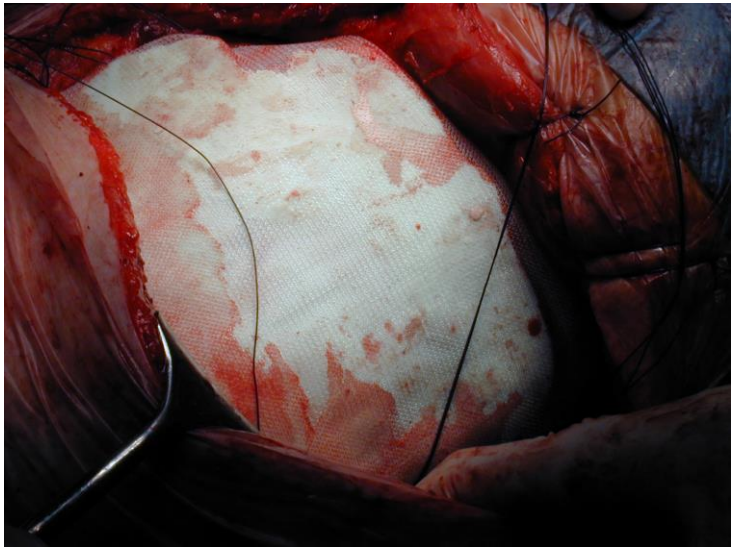
What is the best chest tube insertion point for this patient?

- CT of the chest is a good test if in doubt

Arrows define points of impact



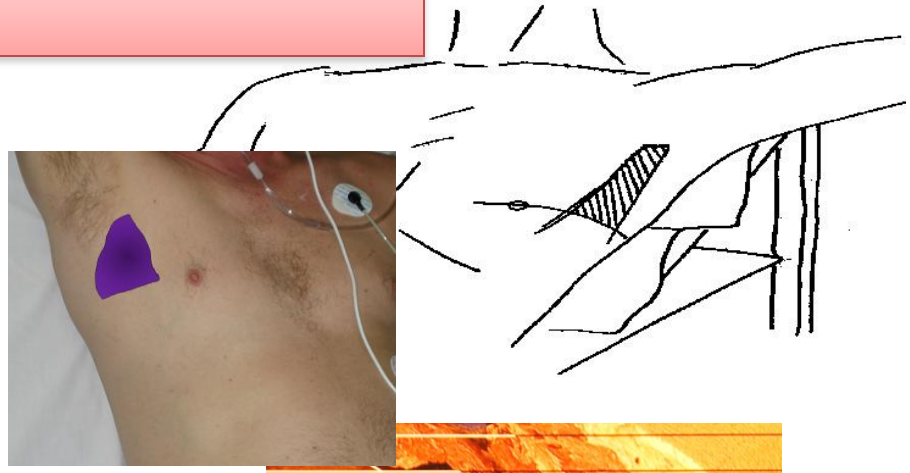
Please follow ATLS guidelines in these patients

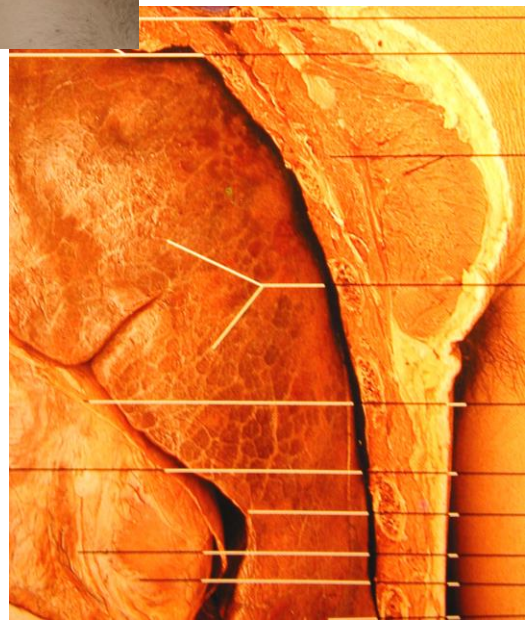


Position of patient

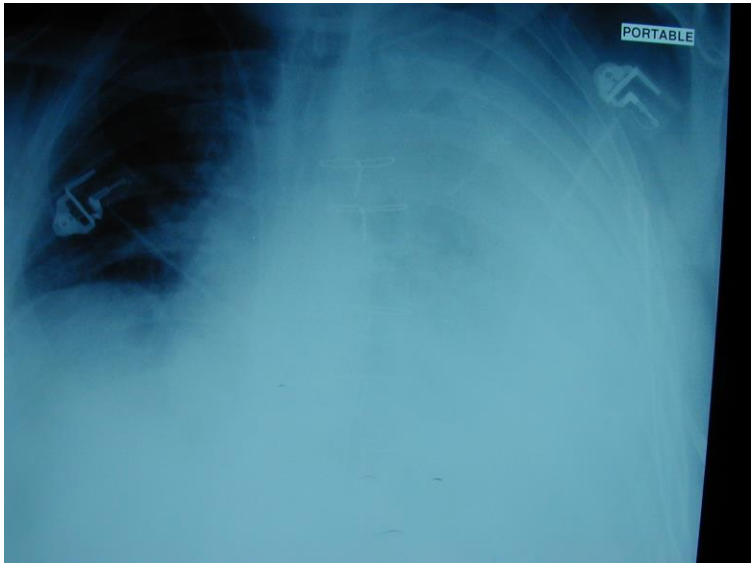
I USE THE NIPPLE LINE AS A GUIDE FOR CHEST TUBE INSERTION

- Arm abducted Why?
- Mid-axillary line
- Borders: Pec Major, Lat Dorsi, Axilla.
- Be aware of mammary gland size and position in female patients





Complications



- The drain is inserted and only 75ml of blood drained

BLOCKED DRAIN

KINKED DRAIN

DRAIN NOT IN PLEURAL SPACE

Complications

- Phone call:

50 years old

RTA

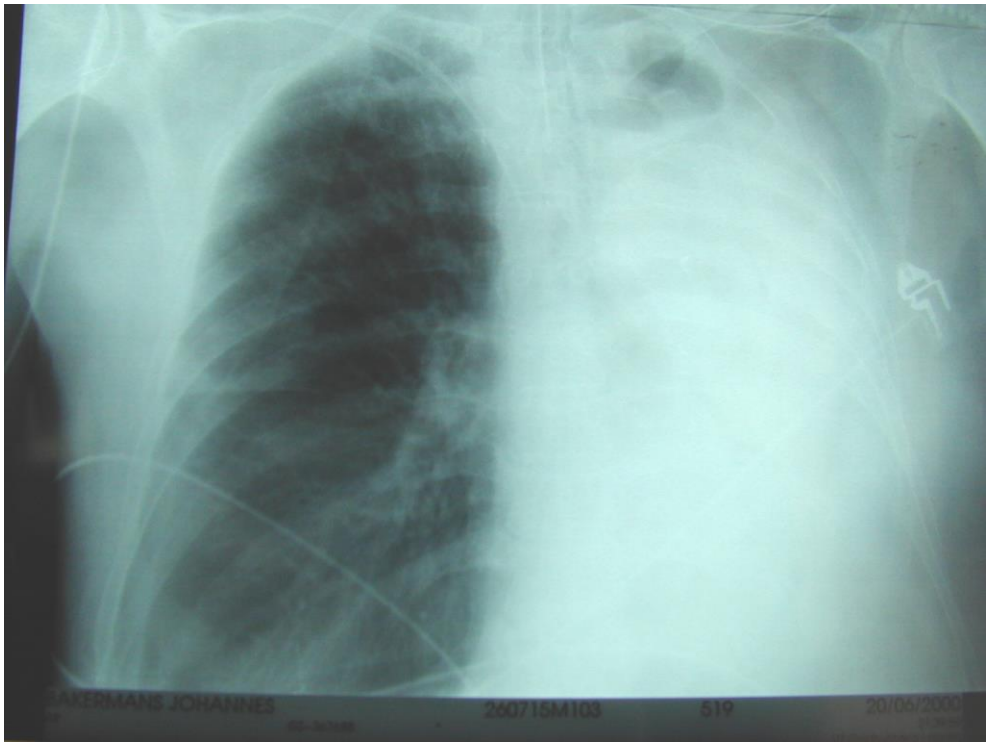
SOB

L Hemothorax

ICD: 100ml of cloudy fluid

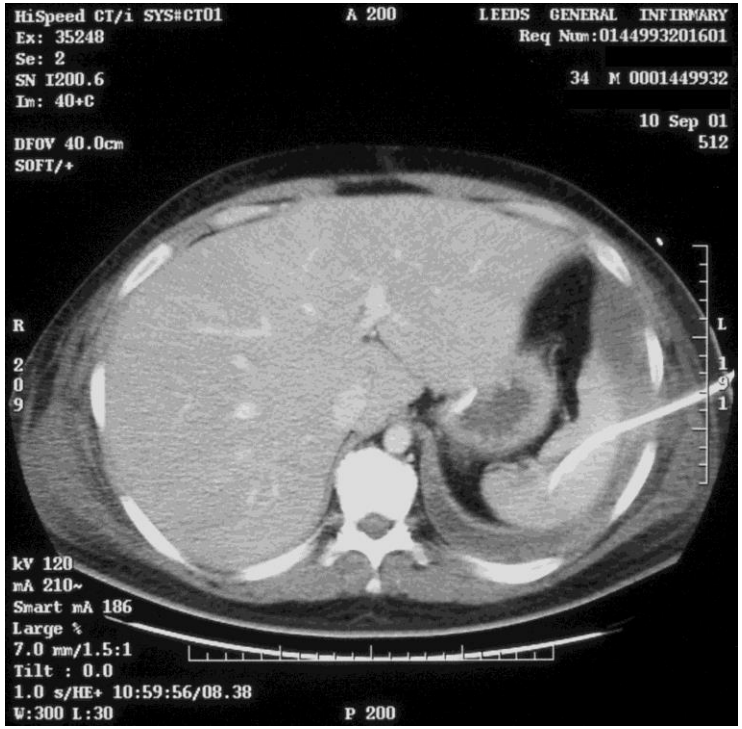
No significant improvement

Please advise



WRONG INDICATION WITH ORGAN INJURY

Complications



- RTA
- Moderate left effusion
- Chest tube insertion

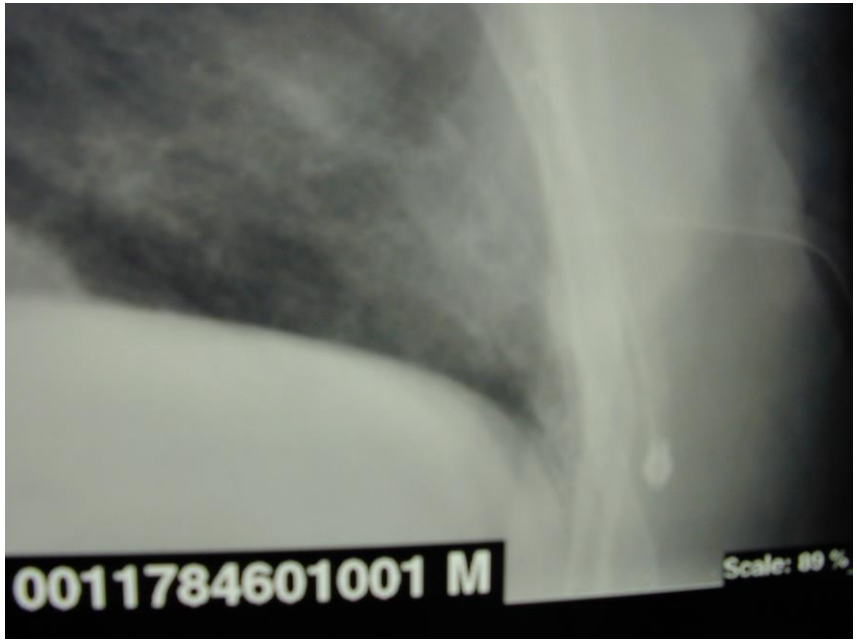
Please identify reasons for failure

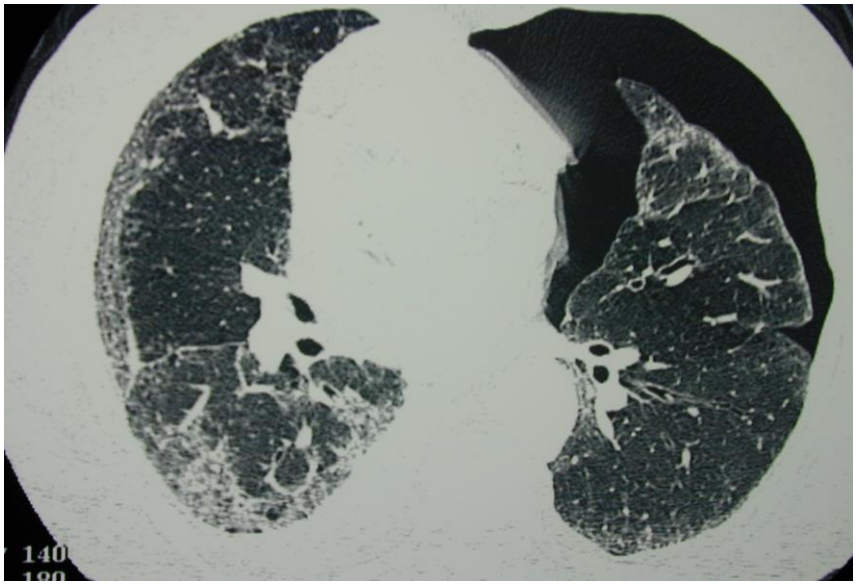
WRONG POSITION

WRONG INDICATION

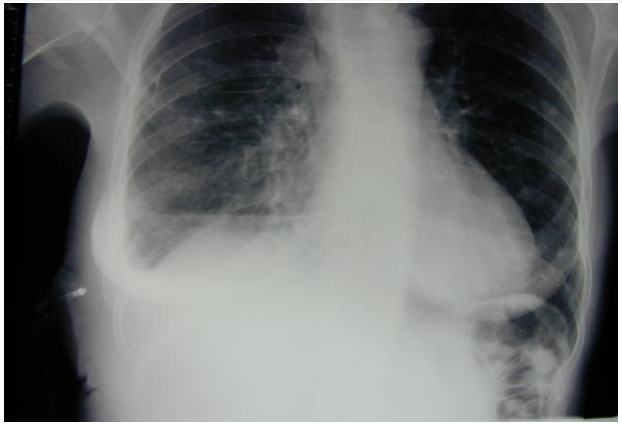
Complications

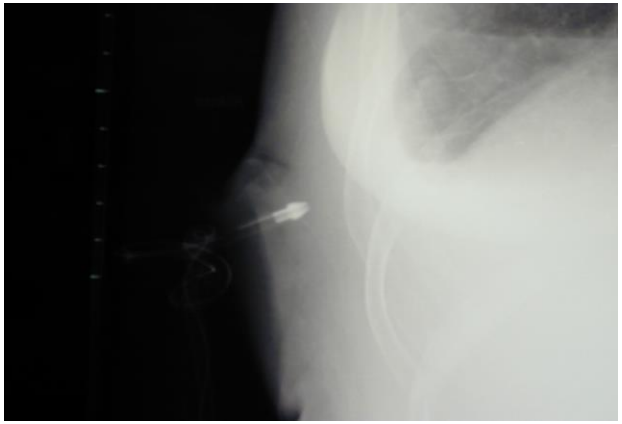
Hi. We have a patient with PT. Chest drain inserted but PT not resolved



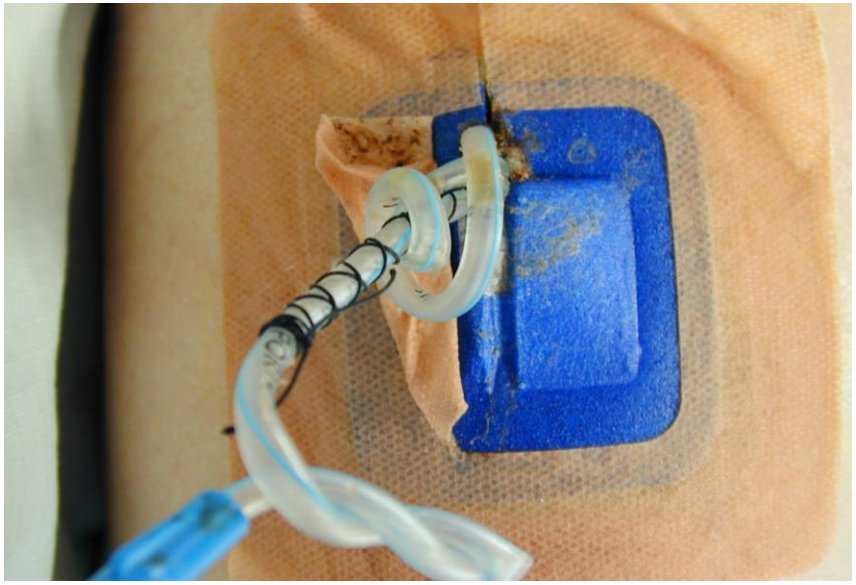


We also have a patient who's PT is not resolving. Please advise





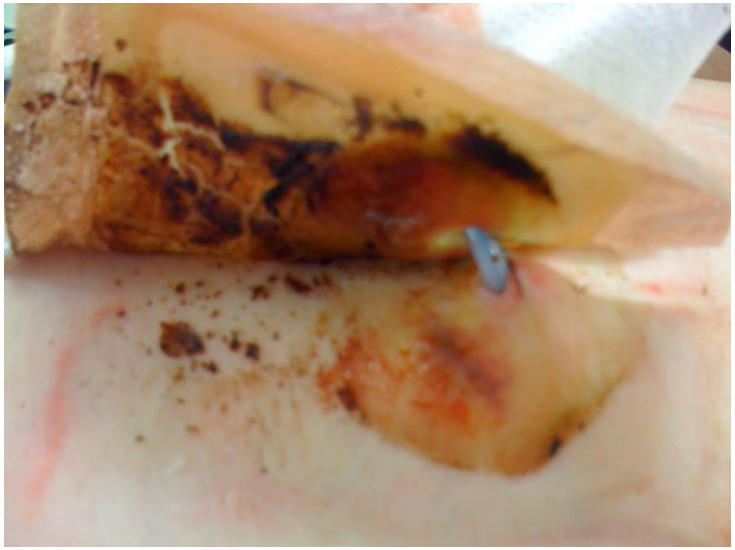
Ours is even worse. It was fine and now the lung has come down again



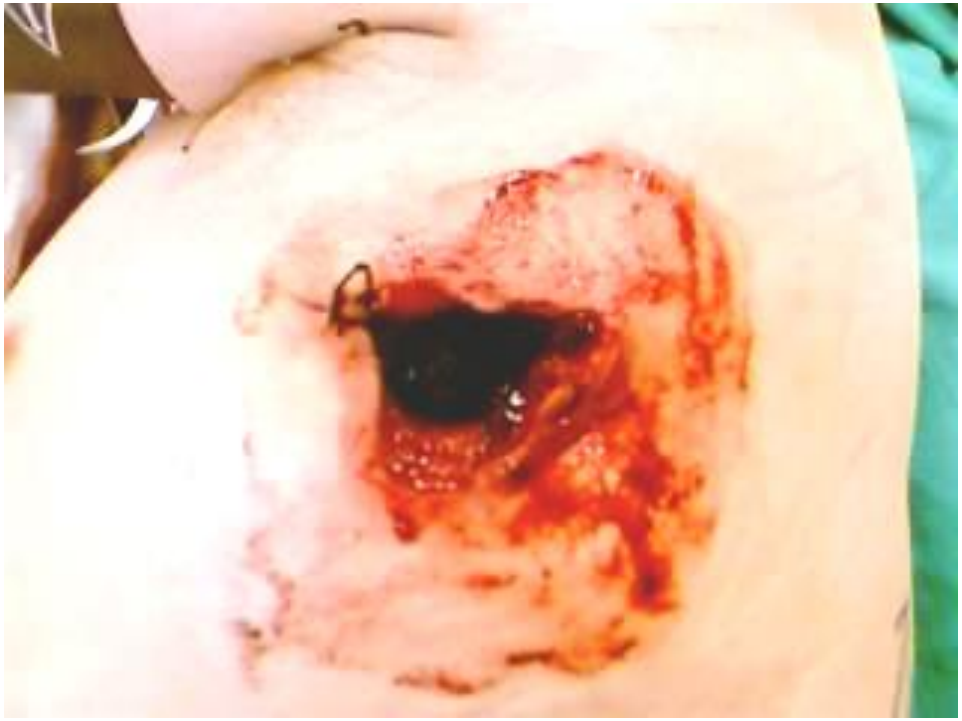
Hi The lung is not coming up and there is a large air leak. He needs surgery.

Trust policies or guidelines

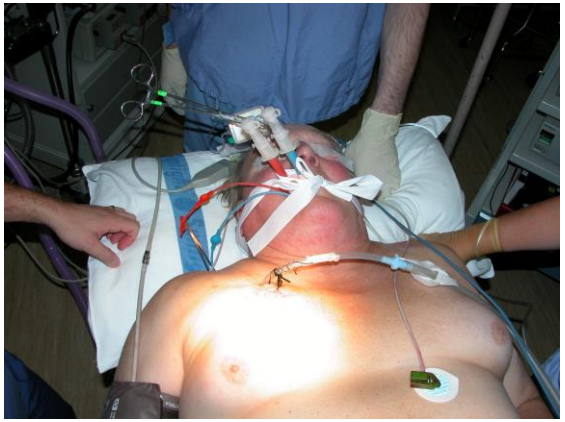
Keep dressings for 5 days?????????

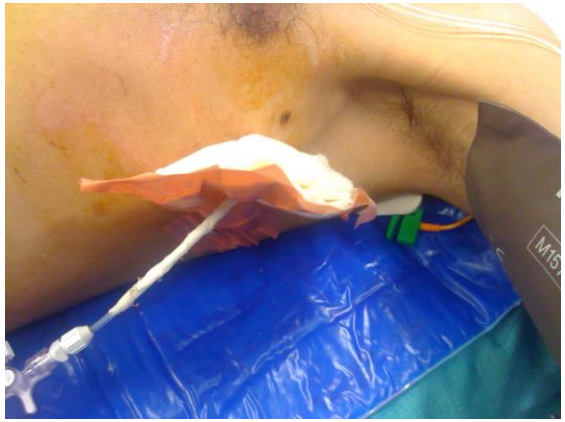


This is a chest drain insertion point. 10 days later referred as he has fever

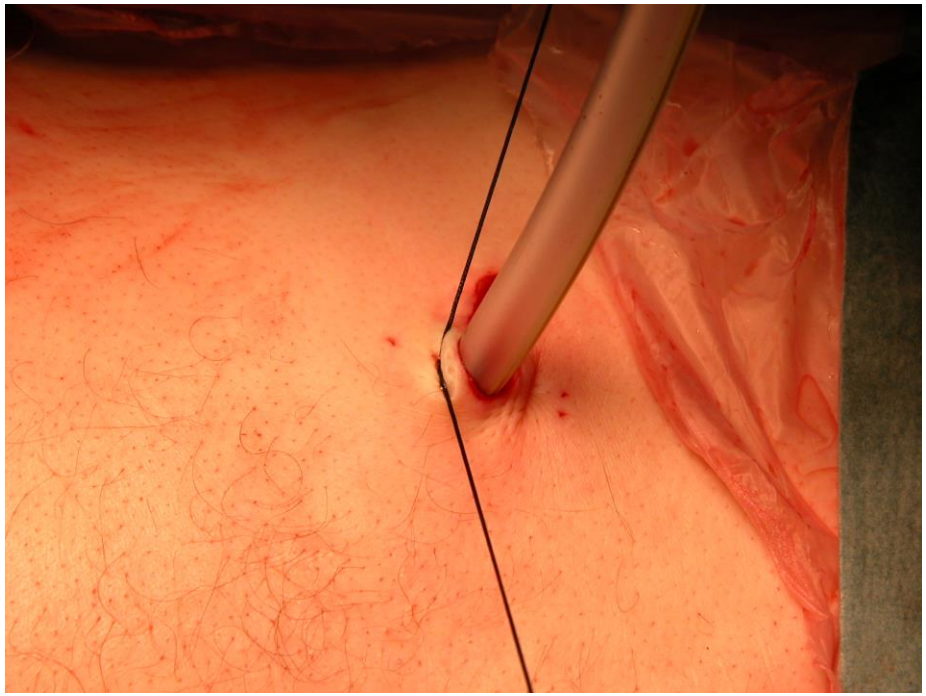


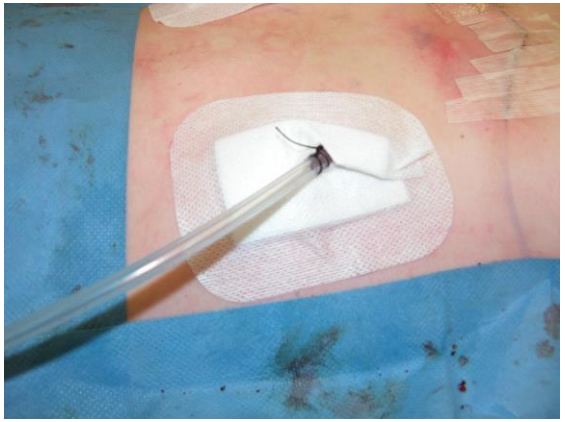
Position, inspection





Drain fixation

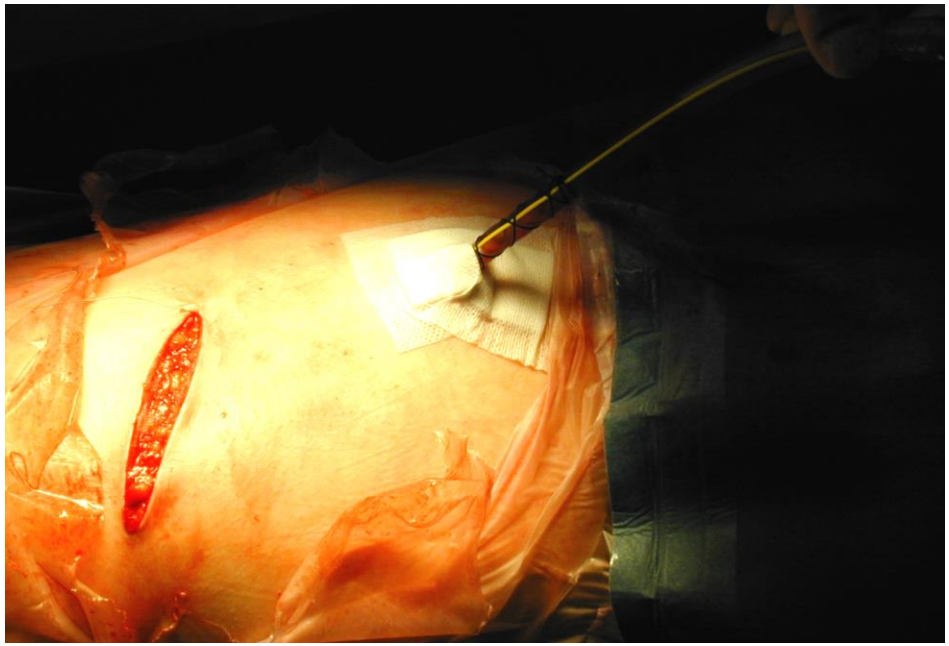




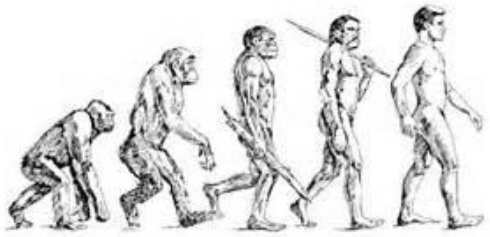
Post Insertion Management

- Simple dressing which allows inspection
- Change daily!
  WHY?

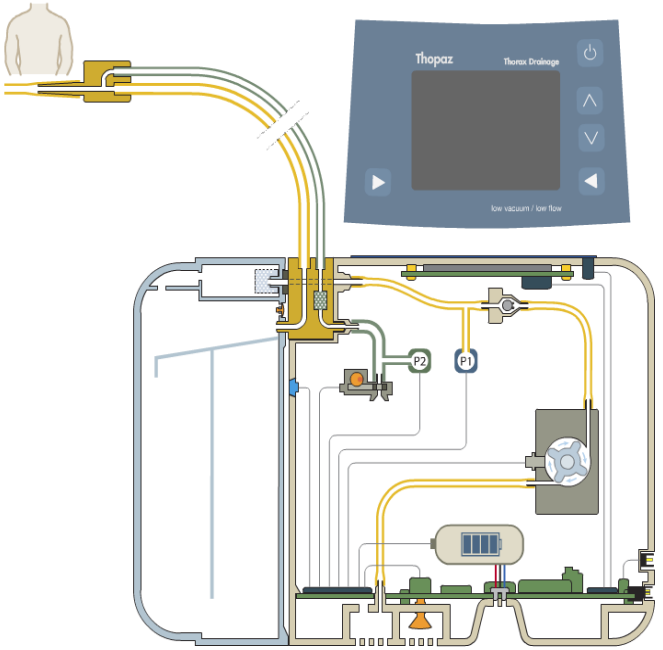
1. Moisture
2. Forces daily inspection



DIGITAL technology established in 2008.



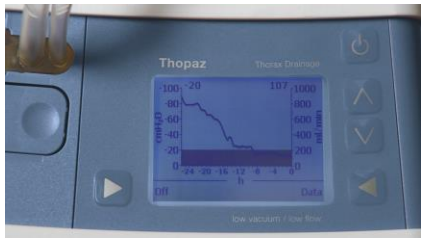
THE BIG LEAP



- An entirely new concept; from underwater seal to waterless.
- From visual to digital reading
- From a canister to a digital gadget with real time info and recording capability

Thopaz™

2008



2014

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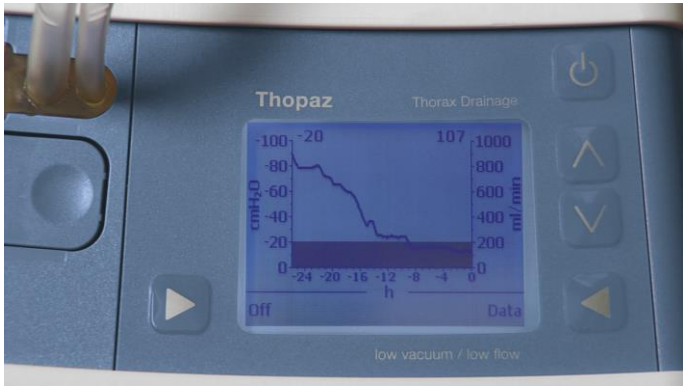
Benefits Patient

- Mobility
- Comfort
- Facility

Benefits STAFF

- MODERN NURSING CARE
- NO INTEROBSERVER VARIABILITY
- SAFE, CONFIDENT DECISION
- DISCHARGE PLANNING



Learning curve?