VATS
AN IMPORTANT TOOL FOR TRAUMA SURGEONS ?

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UCT

Historical

- Thoracoscopy , first performed by Jacobeus in 1910
- First series published in 1921 (diagnosis of tuberculous and malignant effusions)
- In the following 5 decades limited use , mostly for adhesiolysis in patients with TB
- The 90’s brought a resurgence of the technique , with the advent of endoscopic video systems: VATS(Video-assisted Thoracoscopy)

Indications

Table 1: Indications of video-assisted thoracoscopic surgery in trauma patients
Chylothorax
Diagnostic
Diaphragmatic injuries
Empyema
Foreign body in pleural space
Pericardial effusion
Persistent pleural effusion
Persistent bleeding from chest
Large haemothorax
Retained haemothorax

Contraindications

- Absolute:
- Markedly unstable or shocked patient
- Extensive adhesions
- Prior pleurodesis

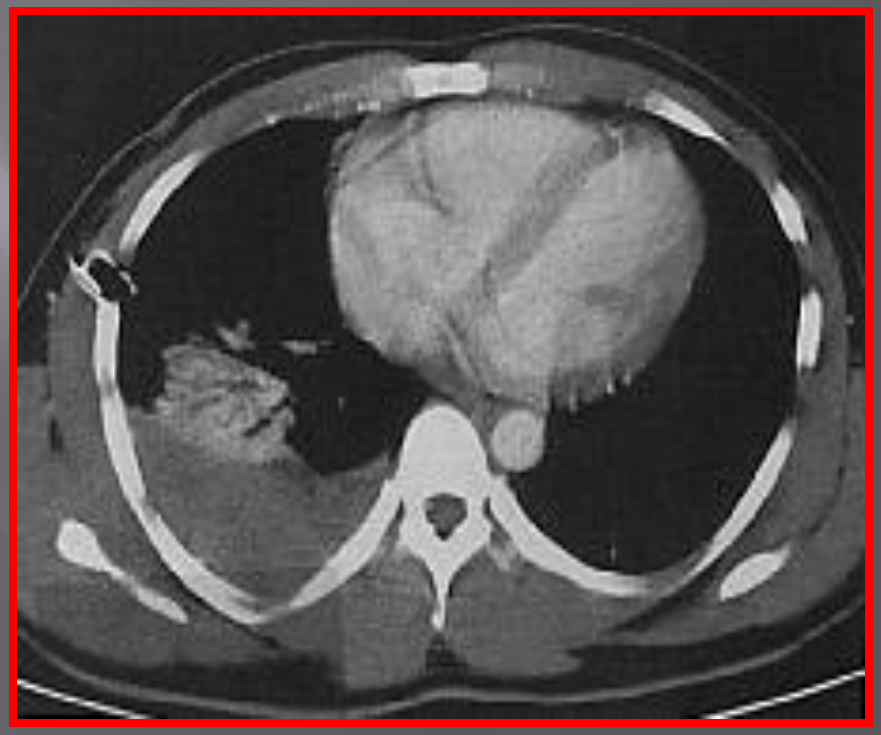
Contraindications

- Relative:
- Inability to tolerate single lung ventilation
- Previous thoracotomies
- Extensive pleural diseases
- Coagulopathy
- Prior radiation

Retained Haemothorax !

- Retained haemothorax after trauma is common(1-20 %)
- Causes of RH:
- Misplacement of ICD
- Displacement of ICD
- Blockage of ICD
- Lack of physiotherapy/mobilization

Retained Haemothorax



Retained Haemothorax

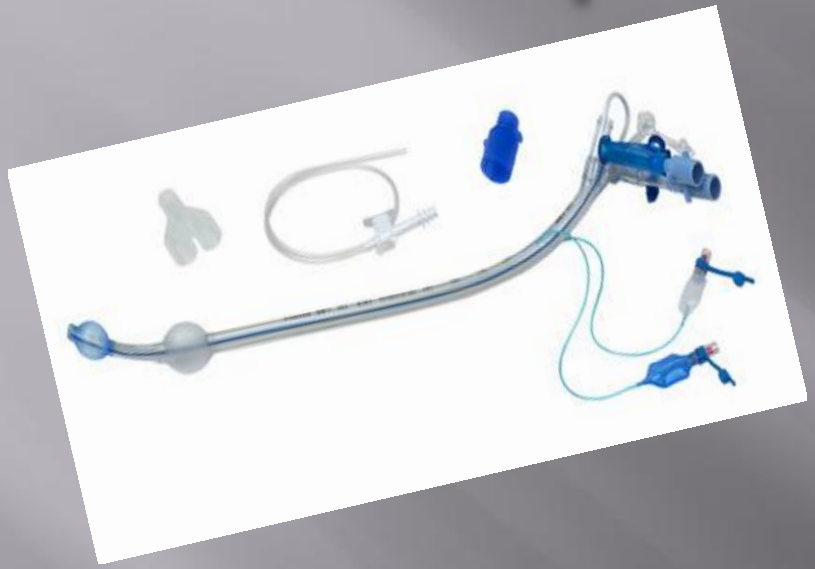
VATS for RH

- Numerous articles in the literature supporting the use of VATS(> 400)
- 1 prospective randomized study and X 2 large (n>100) prospective studies
- Consensus: VATS better than ICD reinsertion, less complications, shorter hospital stay
- Timing of VATS ? Earlier better than late(< 5 days from injury)

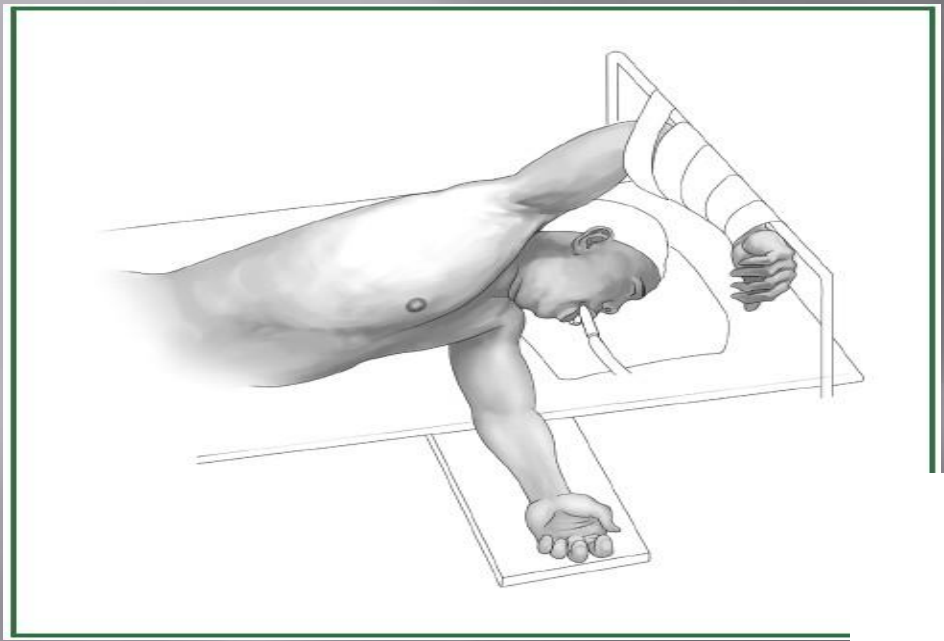
Requirements

- GA(experienced anaesthetist for single lung ventilation)
- Double lumen endotracheal tube
- Laparoscopic stack (monitor/s +light source)
- (2)10 mm ports +/- 1 extra port
- Suction Apparatus
- 0 degree lens
- Ring forceps(or laparoscopic forceps/grasper)
- No + pressure insufflation required

Requirements Cted



Technique



Patient positioned in lateral decubitus with the arm abducted

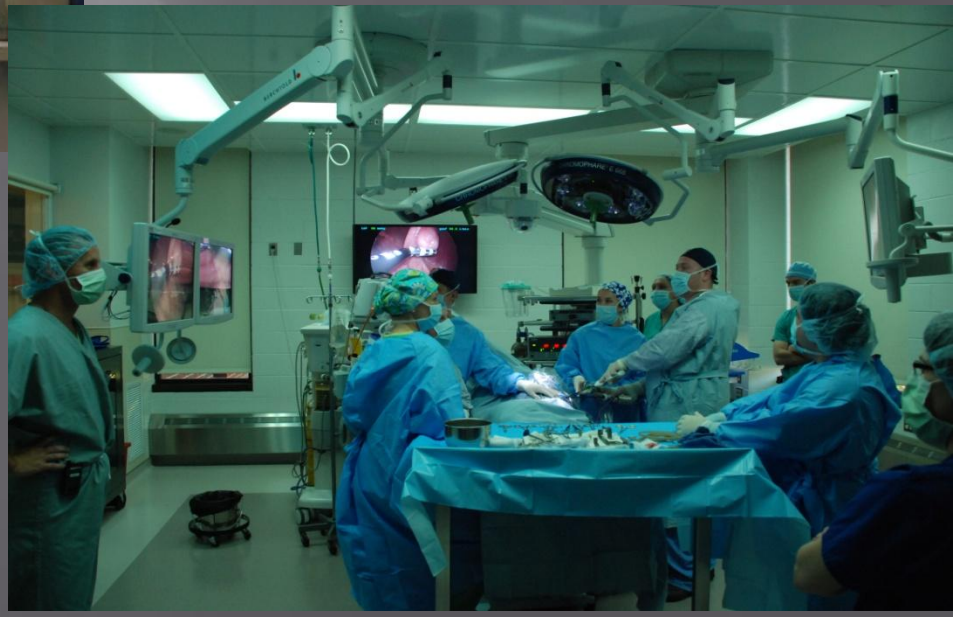
Fig (4) Patient position for thoracoscopy (left lateral decubitus)

Technique Cted

- The entire hemithorax is cleaned
- The surgical team is positioned according to existing resources(same side of patient/both sides of patient)
- The lung is deflated by the anaesthetist
- A 2 cm incision is placed over the site of the loculated haemothorax (as determined by CT scan)

Technique Cted

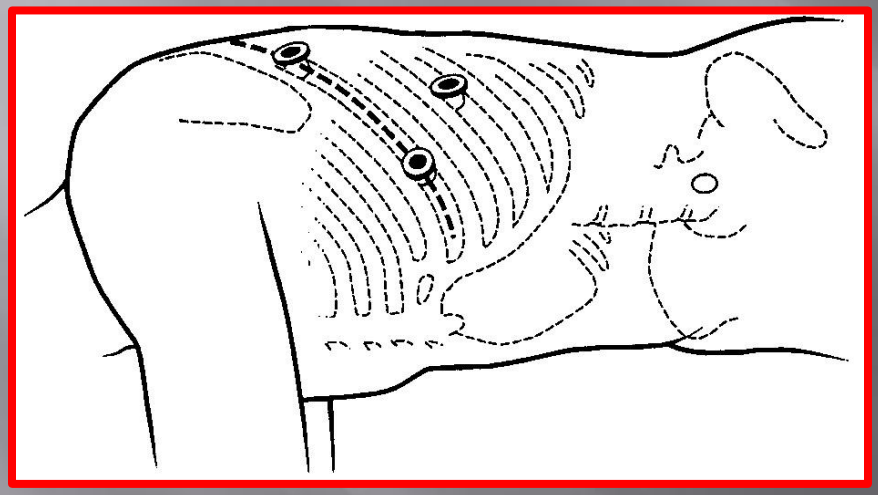
Placement of surgical team



Technique Cted

- A suction catheter is inserted into the loculated collection
- Specimen is sent for mc&s
- Another 2 cm incision is placed 8-10 cm away , in the same i.c. space, further evacuation of pleural contents done under direct vision with the camera

Technique Cted

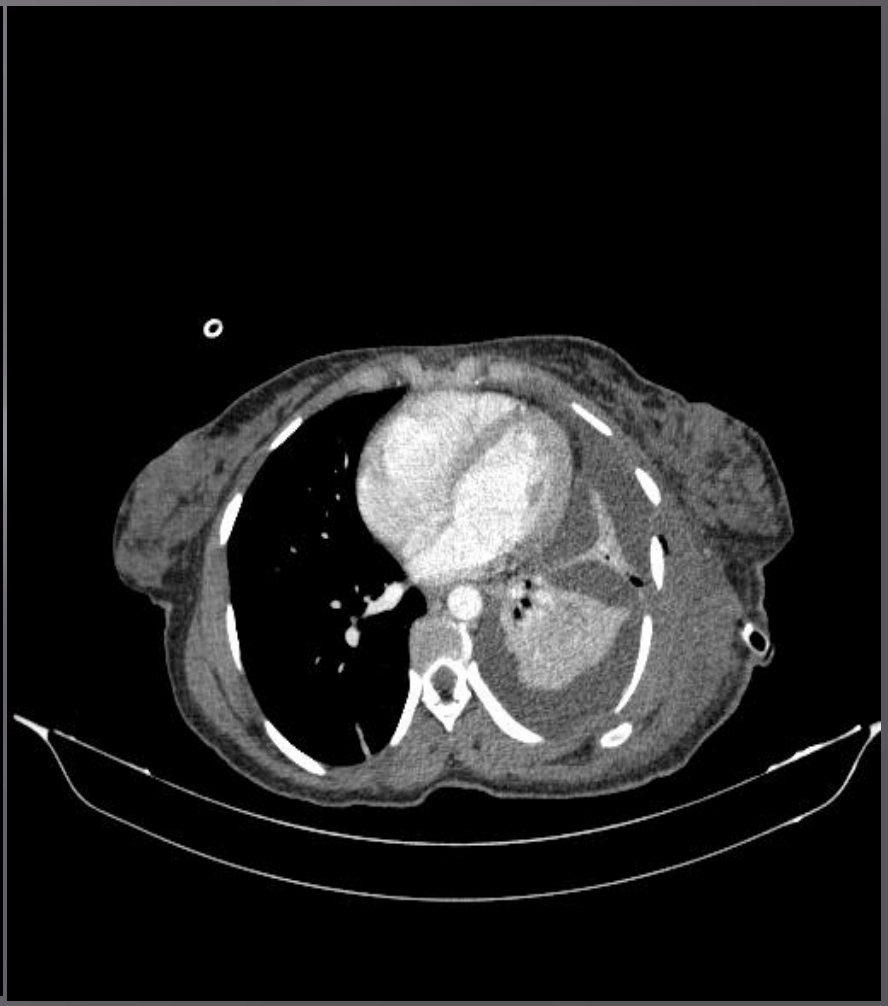


- Forceps is used to remove rind/fibrine from visceral and parietal pleura
- Gentle dissection under direct vision with sponge sticks and forceps to release trapped lung

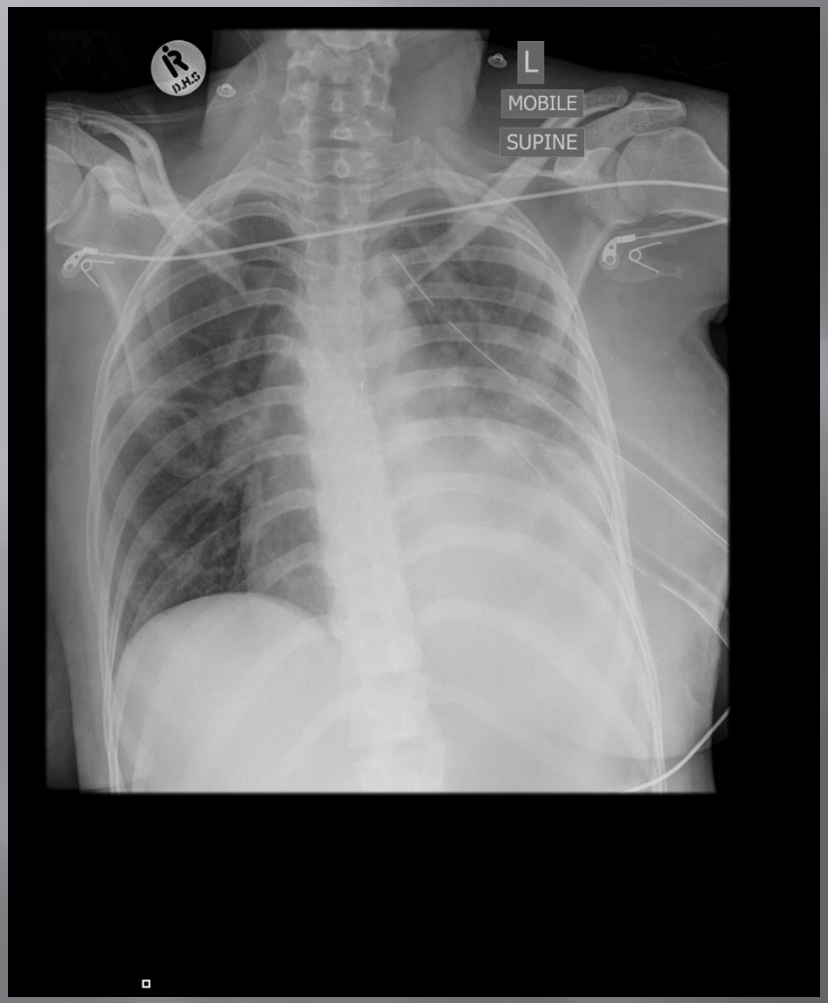
Technique Cted

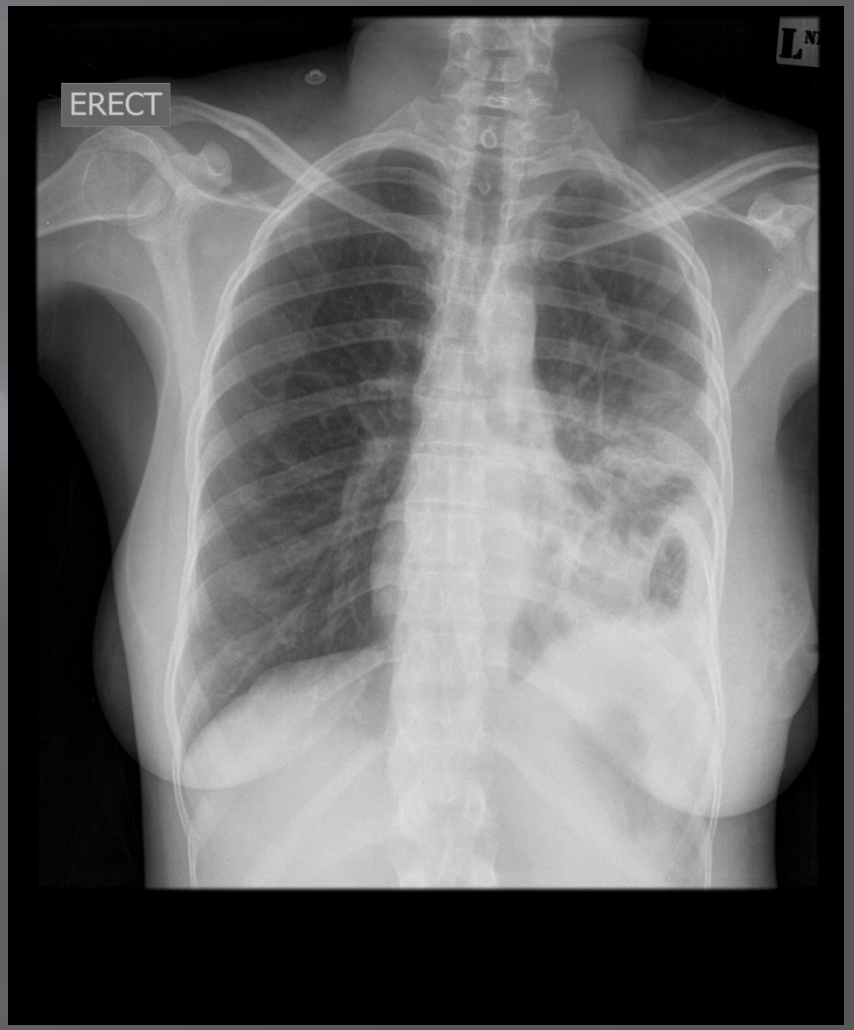
- Once all the pleural fluid and fibrine is evacuated , adequate lung expansion is observed by ventilating the ipsilateral lung
- X2 thoracostomy tubes are placed into the port sites
- Patient is admitted to HCU where drains are placed on low pressure suction
- CxR, ABG and routine monitoring
- Drains are removed according to protocol(< 50mL/12 hours, no air leak)

Results(pre-op)



Results(post-op)





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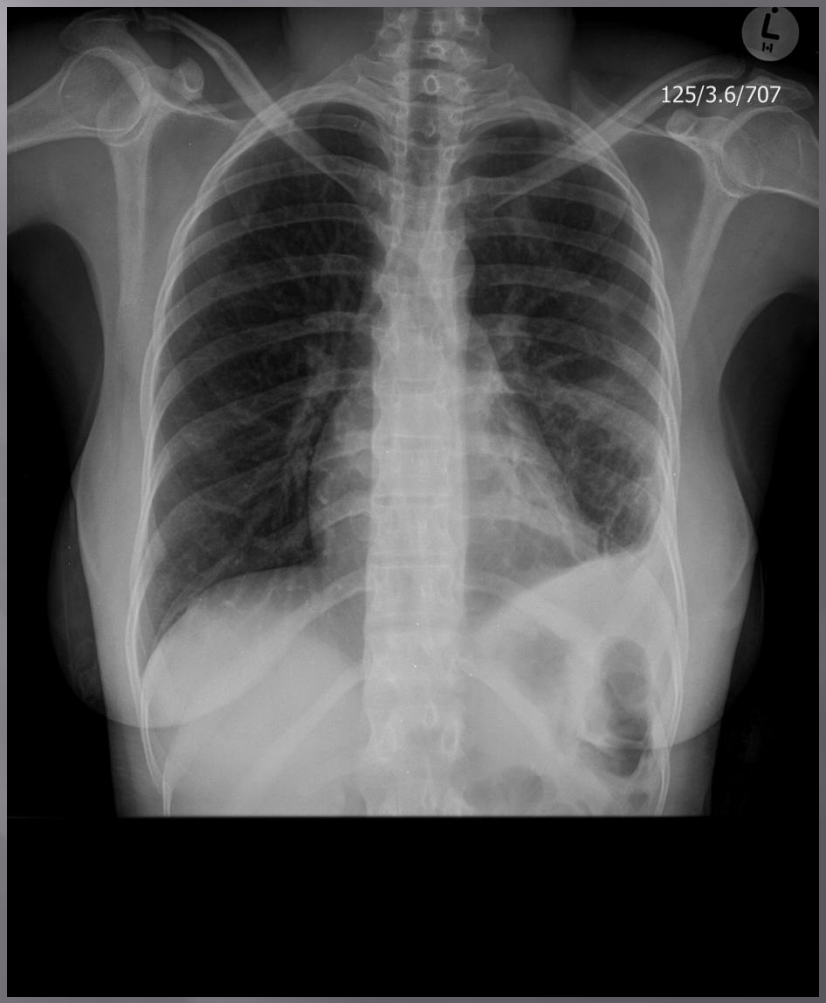


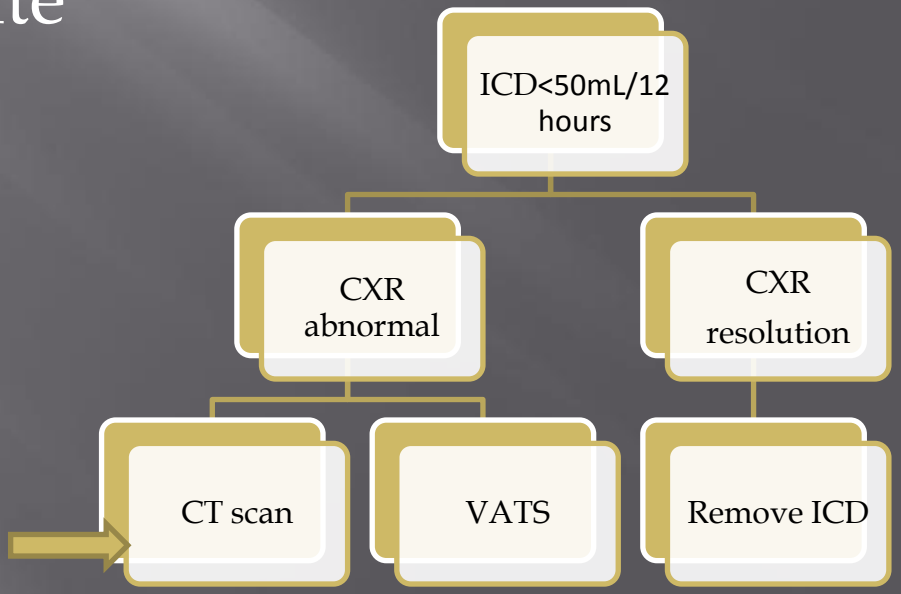
GSH Experience with VATS

- Thoracoscopic evacuation of retained posttraumatic hemothorax.
- Navsaria PH, Vogel RJ, Nicol AJ.
- Ann Thorac Surg. 2004 Jul

- Our experience with VATS to manage retained thoracic collections is safe, effective and reliable.
- VATS should be the first-line of treatment in all retained thoracic collections regardless of the time interval between injury and surgery

NOW ?

- Ongoing prospective randomized trial for Retained Haemothorax
- 2 ARMS : 1. ICD reinsertion , 2. VATS
- End points: empyema rate, length of hospital stay, thoracotomy rate
- Algorithm:



Conclusions

- VATS is an important tool for the Trauma Surgeon
- It's feasible in any institution with laparoscopic equipment and adequate anaesthetic support
- Should be the first surgical option for a Retained Haemothorax , even beyond the 5 day ("ideal") interval