Medical Thoracoscopy
When to Choose Over a General Anaesthetic VATS

SpR Training Day
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“Medical” Thoracoscopy?

No… Just Thoracoscopy

Invented by a Swedish Physician – Jacobeus in 1910
Once you can perform Thoracoscopy….

…for what indications would you then refer for VATS?
A Little History…

• 15 years ago – BTS gave very little time to Pleural disease…..
• This Winter all sessions had standing room only…
• What has changed?
Thoracoscopy for SpRs

• 7 years ago 11 hospitals in UK offered service - Number now? But rapidly expanding…. As is training….

• Most hospitals still have to rely on VATS

• Much more common in Europe and USA

• Expanding service and training in the UK

• NB Do not need thoracic surgeons on site
Work Up

• Medical History
• Physical examination
• Laboratory values
• Chest X-ray
• Pleural Ultrasound
• Guided Pleural Aspiration
• CT Chest (±Abdo/Pelvis)
Pleural Ultrasound

- NPSA and new BTS guidelines now recommended for all pleural procedures
- **Essential** Pre Thoracoscopy
- Loculations…
- Visceral pleural thickening
- Also guide you – Pleural thickening amenable for US Guided Trucut Biopsy
Undiagnosed Unilateral Pleural Effusion - Aspiration

• Confirm Exudate
• Exclude pleural infection –
• (NB AFB in fluid rarely helpful)

• Cytology….  
• Positive in 30-50% Metastatic cancers?  
  • Mesothelioma – Cytology rarely helpful
If You Suspect TB…

Abram’s Needle Biopsy
Light’s Criteria

- Fluid is an exudate if 1 or more are met:
  1. Pleural fluid protein divided by total serum protein > 0.5
  2. Pleural fluid LDH divided by serum LDH > 0.6
  3. Pleural fluid LDH > two-thirds the upper limits of normal serum LDH

LDH implies a level of pleural inflammation
~ 95% sensitivity and specificity
Indications

• **Diagnosis of unexplained Exudate**

When you are starting off….Procedures under LA should be limited to…

1. Complete aspiration of effusion
2. PARIETAL pleural biopsy under direct vision
3. Break down of simple loculations
4. Talc poudrage and drain placement or IPC
Contra-indications for Thoracoscopy

**ABSOLUTE**
- respiratory insuff
- bleeding disorders
- end stage fibrosis
- pulm. hypertension

**RELATIVE**
- general health status
- no pleural space(?)
- fever
- uncontrolled cough
- unstable cardiovasc status
- hypoxaemia
The Procedure Set Up

- Where? – Bronch Suite – why not theatre?
- Sterile environment - fully
- Local Anaesthetic – Simple Lignocaine
- Sedation – Midazolam, Fentanyl
- Sats/BP monitoring
Thoracoscopy – patient’s view and consent

• Provides 3 functions at one time
  – Removes fluid and reduces SOB
  – Biopsy under direct vision – make a diagnosis
  – Pleurodesis - to prevent recurrence

Complications – Bleeding, Infection, Persistent Pneumothorax

• For many this will be the first and may be the only “treatment”
Case

• 84 yo male
• Polish
• AF, on warfarin
• CCF, COPD
• Increasing/persistent Right effusion
• Exudate, negative cytology
• CT – effusion, no other diagnosis
Post Procedural Care

- Respiratory Ward – trained staff
- Suction – 5, 10, 20cm H2O pressure for 48 hours for best pleurodesis with talc
- Analgesia – paracetamol, opioids,
  - (Lignocaine down the drain)
- Avoid NSAIDS (TIME 1 Trial)
“Ultrasound Confirmed Pleurodesis”
Progress

• Day 3 confirmed Ultrasound pleurodesis
• Home with OP FU

• Diagnosis – Epithelioid Mesothelioma
Potential Complications

- Infection – single dose of Augmentin 1.2g iv pre procedure?
- Bleeding – rare
- Persistent pneumothorax
- Surgical Emphysema
- Infection – Site or Empyema
- Mesothelioma – tract recurrence – Prophylactic radiotherapy
Results ("mine")

- 200+ procedures
- ~98% diagnostic rate
- Mesothelioma – 40%
- Metastatic Cancers – Lung, Breast
- Lymphomas
- Few TB
- Up to 20% - “Benign” – Follow up for 2 years....
TALC
Graded, French

70% Success rate for slurry pleurodesis
NB TAPPS Study…
Challenging to pre-diagnose trapped lung...
- CT
- Pleural Manometry
- Visual....?
Trapped Lung....

Can be hard to predict visually.....
Indwelling Pleural Catheter - IPC

- Tunnelled drains for recurrent pleural effusion that have failed pleurodesis
- **Or** for trapped lung at thoracoscopy (Pleural Manometry, CT findings, Visually)
- Separate hole/Tunnel
- Allows Day Case Procedure
- Subsequent Outpatient Talc Slurry Pleurodesis
- May well undergo “auto-pleurodesis”
- Can remain in permanently but often pleurodesis obtained in weeks – months
So who should go for VATS?

NB – We do run a joint clinic weekly with Thoracic Surgery…
Indications for VATS

• They need to be fit enough for GA
• Patient “Choice” – anxiety, poor compliance
• Malignant trapped lung for decortication
• ?Complex Empyema – NB Intrapleural tPA and DNase…..
• Recurrent pneumothorax
• Visceral biopsy/wedge etc
Advantages of Thoracoscopy

• Day Case – (with IPC or no drain?)
• Short Stay - Talc poudrage 2 days
• VATS – 4-5 days
• Frail/Elderly – well tolerated
“Advanced” Thoracoscopy

• Minimal or No effusion – induce pneumothorax, Boutin needle
• Complex/multiloculated effusions
How to Learn?

- Thoracic Ultrasound and course
- Recommend “Lille” Course
- Increasing training at regional hospitals
- Worth attending theatres with thoracic surgeons at teaching hospitals
- Number needed?
Thank You

Any Questions?