



Setting up a thoracoscopy service

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Why do I need a thoracoscopy service?

- Malignant pleural disease common
- Cytology not very good esp in mesothelioma
- Thoracic surgery in regional centres
- Can diagnose and treat in one go
- Shortens diagnostic pathway
- Other tumour sites

How do I get one?

- Invest in a lead for pleural diseases
- Develop a business case
- Other developments
 - Ambulatory services
 - Pleural nurse
 - GIRFT recommendations

BTS statement on medical thoracoscopy 2010

- ‘...increasing burden of disease...’
- ‘...technique of highest diagnostic yield for both malignant and benign conditions...’
- ‘...high diagnostic yield and effective pleurodesis in a single procedure.’

Local audit

	KMH	Derby
Mean time to diagnosis	19 days (11-52)	35 days (14-20)
Mean inpatient stay	4.5 days	7 days

Diagnostic rates

- Thoracoscopy – 95%
- Image-guided biopsy – 88%

Who might benefit?

- Need a diagnosis and suspicious of malignancy or infection ✓
- Need more tissue for molecular testing (✓)
- Need a diagnosis and to manage fluid ✓
- Staging of lung malignancy ✓
- Biopsying pleural nodules ✓

- Just need to manage fluid ✗
- Just need to get a pleurodesis ✗
- Management of pleural infection ✗

What sort of patient?

- Good performance status (2 or better)
- No significant underlying respiratory disease (type II resp failure)
- No intractable cough
- Beware CKD and CCF
- Can access pleural space
 - body habitus
 - location of fluid
 - presence of fluid

What do you need?

- Equipment
- Protocols (procedure, bleed)
- A room (endoscopy/theatre/procedure room)
- Capable staff (assistant)
- Workup and follow-up mechanism

Before the procedure

- Workup
 - FBC
 - coagulation if abnormality suspected
 - [ECG, group and save]
 - Consent (pain, infection, bleeding)
 - Information leaflet
 - [Diagnostic pleural tap in clinic to confirm exudate]
 - [procedure proforma]



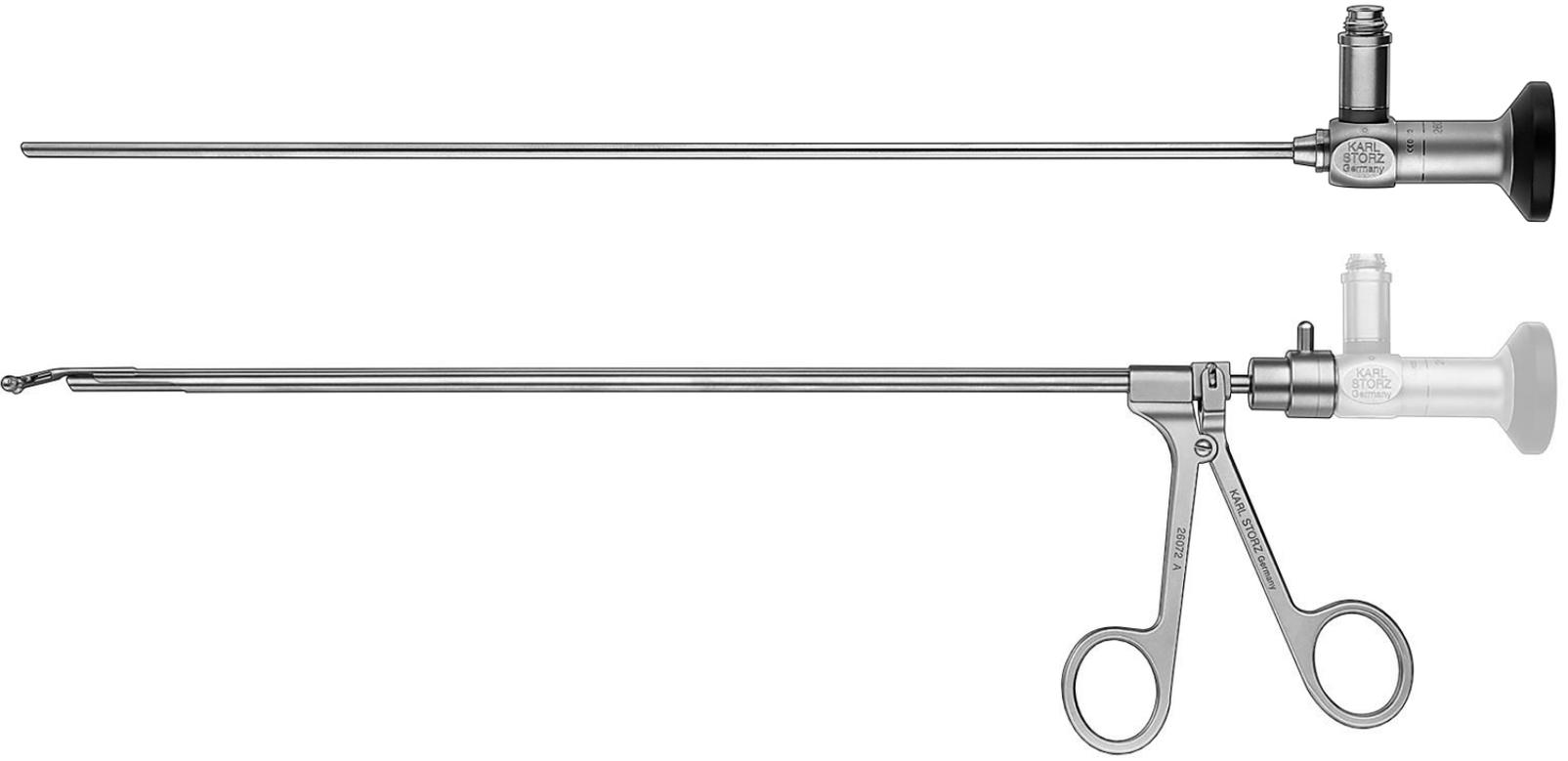
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INFORMATION FOR PATIENTS

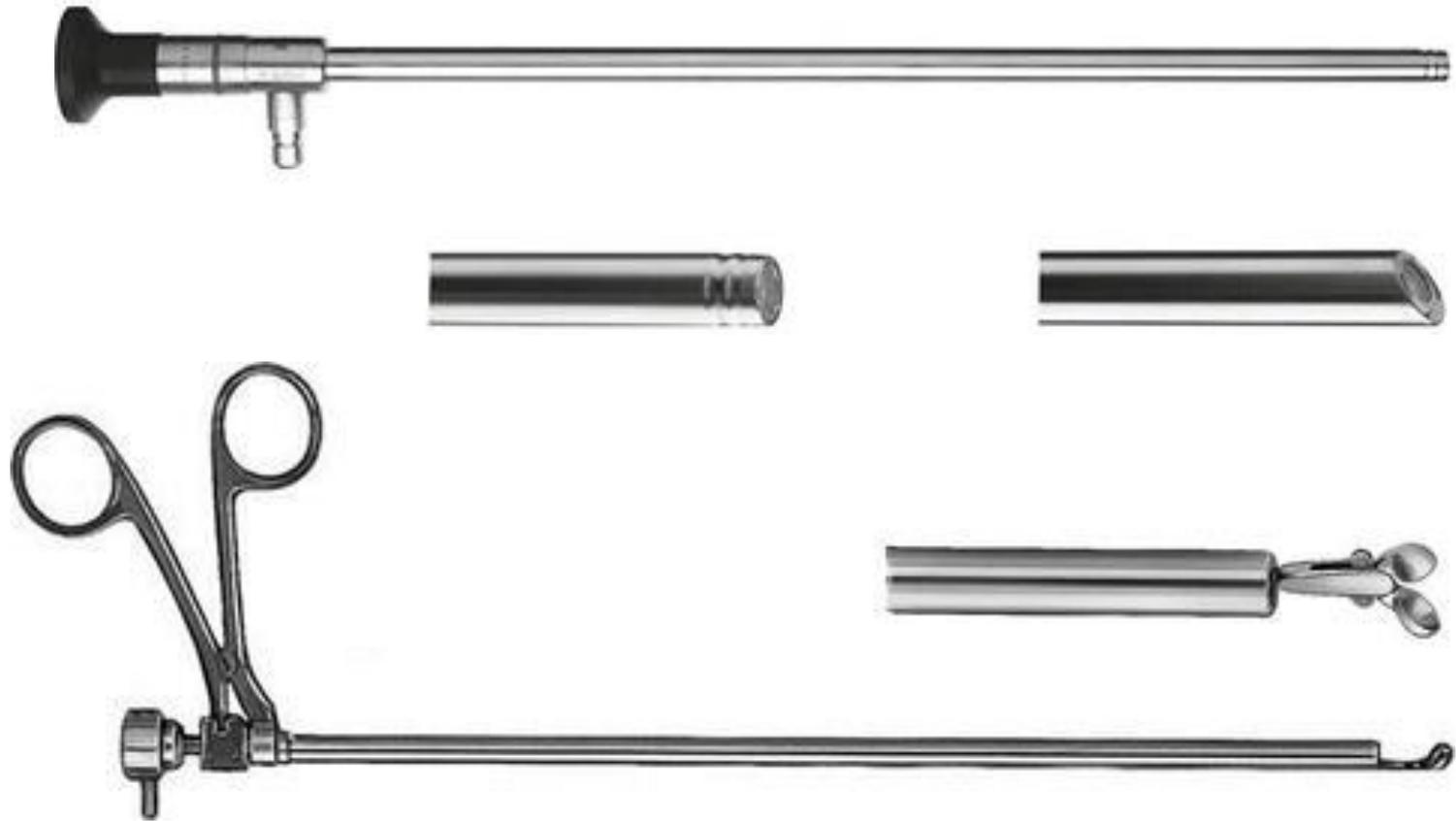
Thoracoscopy

Equipment

Storz, 30 degree scope



Richard Wolf, 50 degree and 0 degree scopes



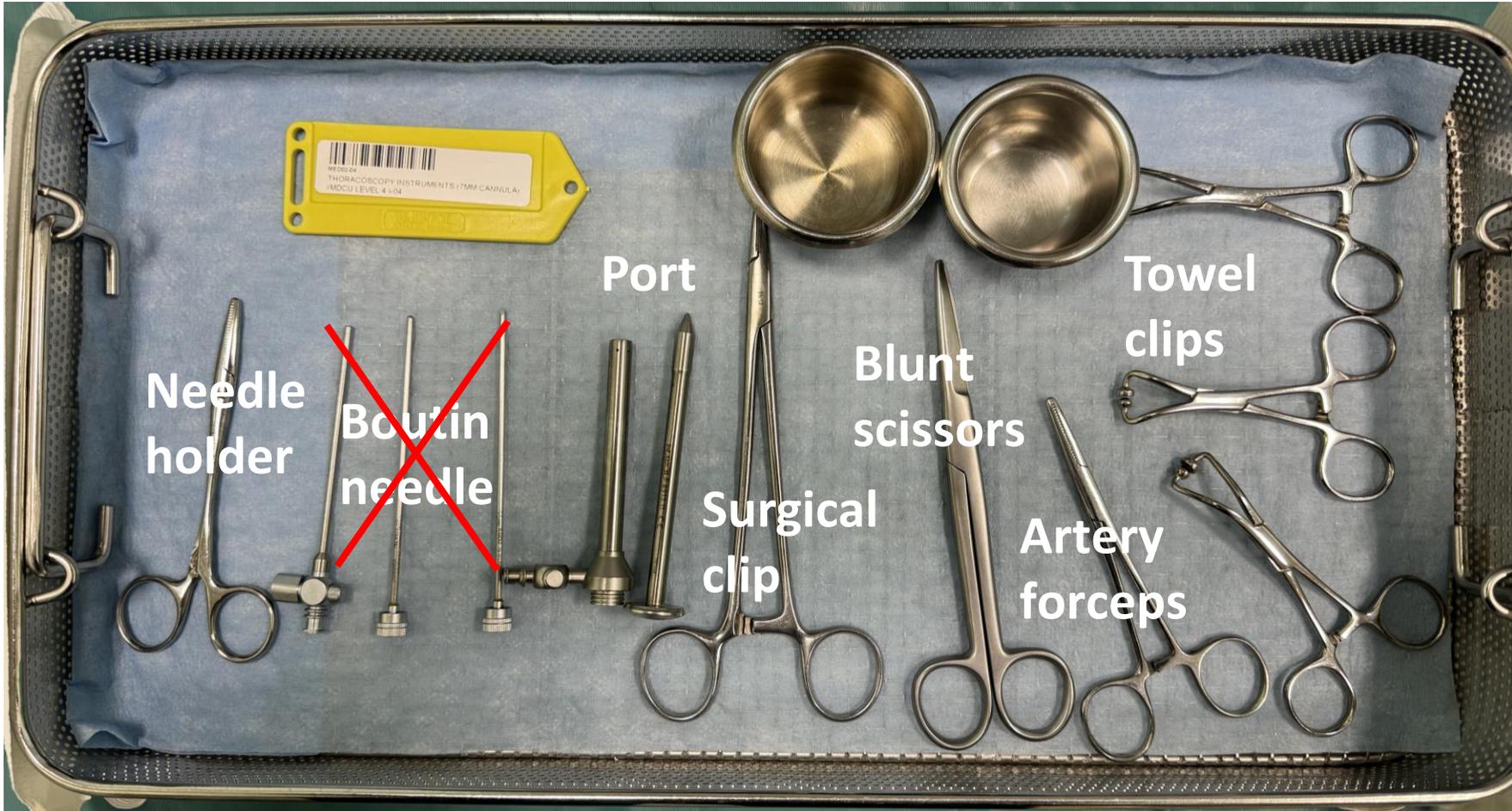
Richard Wolf mini-thoracoscope



Olympus semi-rigid thoracoscope



The tools



Needle holder

~~Boutin needle~~

Port

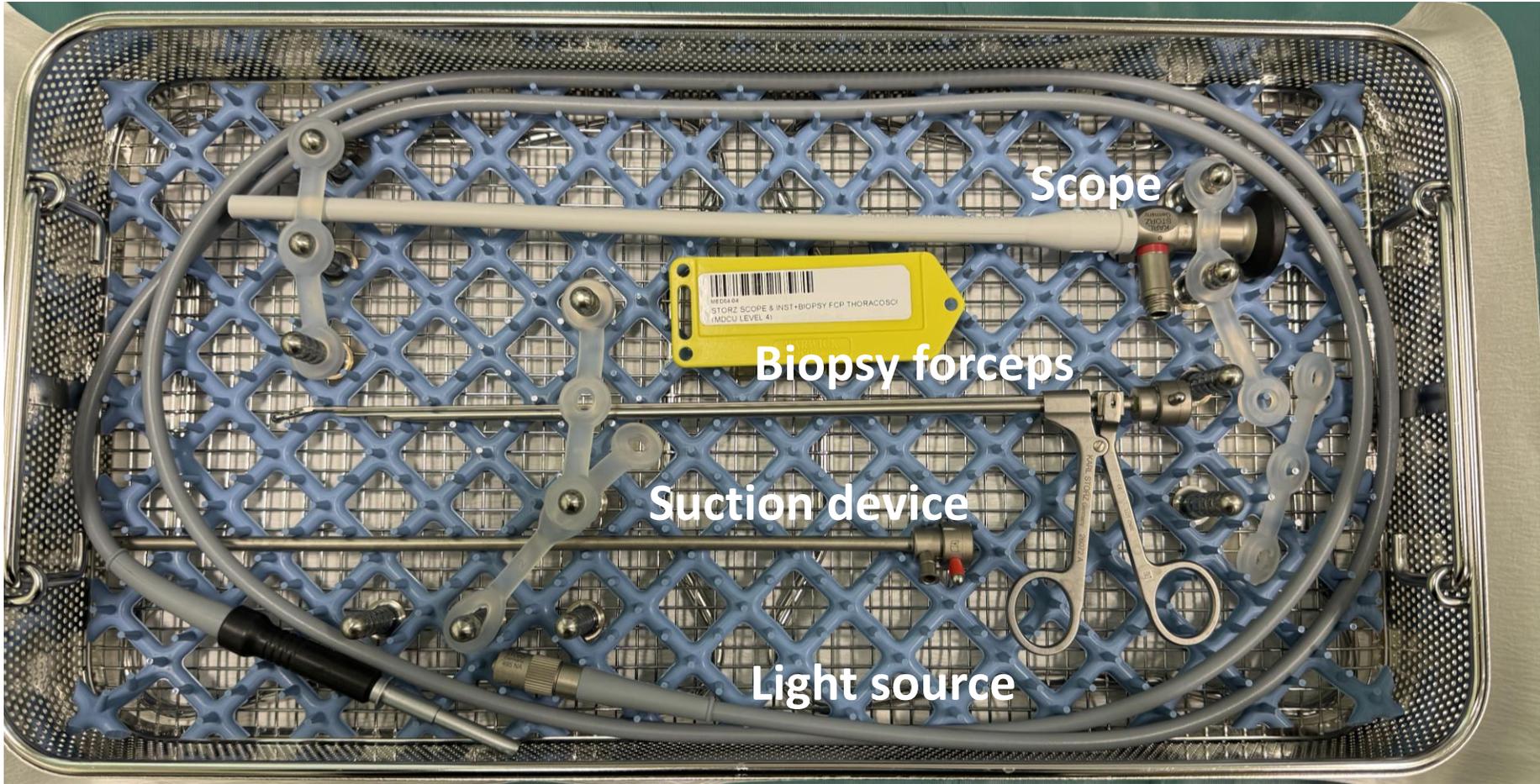
Surgical clip

Blunt scissors

Artery forceps

Towel clips

The scopes



Paperwork

Documentation

Information

INVASIVE PROCEDURE SAFETY CHECKLIST – PLEURAL PROCEDURE TO BE READ ALOUD

SIGN IN
On arrival at the procedure area
Must include at least two people involved in the procedure

TIME OUT
Immediately before the start of the procedure
All team members involved in the procedure should be present

SIGN OUT
Before handover to the post-procedure care team
All team members involved in the procedure should be present

Have the patient's identity and consent been confirmed?
 Yes
 The site of the procedure has been decided (usually triangle of safety)
Has the side of the procedure been confirmed on imaging, and marked?
 Yes Side: _____
Does the procedure need to be performed now?
If out of hours: patient breathless, raised respiratory rate, reduced oxygen saturation
 Yes No
If there is to be a chest tube, is the patient on respiratory

Have the team members involved in the procedure been identified by name and role?
 Yes
Confirm with the team:
 the patient's name, DOB & ID number
 the procedure, site and position planned
 observations checked and acceptable
Are there any contraindications?
(known abnormal coagulation, low platelets)
 Yes No
Is the patient appropriately positioned?
Usually lateral decubitus position for drain, can be sitting upright for aspiration

Has the procedure been documented in the notes?
Date, time, side, location, amount of local anaesthetic, ease of procedure, fluid appearance, size of tube, immediate complications
 Yes
Post-procedure care documented in case notes?
Drainage within first hour (usually <1500ml, then clamp for 1 hour for fluid). Suction for pneumothorax if required. Triggers for drain closure.
 Yes N/A
Tube securely fastened with a suture and connections secure?
 Yes N/A
Samples sent as appropriate?

Local Anaesthetic Thoracoscopy Admission Pack
Name: Click or tap here to enter text.
Hospital no: _____
Allergies: _____
Procedure: _____
Side of procedure: _____
DoB: _____
Yes: Specify: _____
Explain Procedure and answer any questions
Confirm Consent – complete separate consent form
Mark side
Signature: _____
Name: _____
Job title: _____

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INFORMATION FOR PATIENTS
Thoracoscopy

A: Assess severity of patient's circulatory status
Has the patient suffered, or appear close to, cardiac arrest, or are they suffering from severe hypotensive shock?
Yes (if no, go section B):
1. Summon cardiac arrest team and initiate resuscitation if needed.
2. Activate major haemorrhage protocol.
3. Insert >24F chest tube through thoracoscopy insertion site and connect to chest drain via underwater seal.
4. Consider thoracic surgeon and anaesthetist to discuss need for immediate thoracic surgical intervention.
B: Locally assess and manage the bleeding
Is the bleeding very severe/torrential such that it is considered imminently life-threatening (or is thoracic visual inspection

WHO Checklist

The room



Options for the room

- Theatres
- Endoscopy
- Dedicated pleural procedures room
- Room on the ward

Staff

- Theatres
 - Endoscopy
 - Dedicated respiratory nurses
 - Pleural nurse specialists
-
- How do you train them?

Scheduling

- Regular sessions or ad-hoc
- Impact on bronchoscopy
- Inpatient bed post-procedure

Getting ready for the unexpected

- No/little fluid – ?induce a pneumothorax
- Lung won't go down
- Benign appearances
- Biopsies not tolerated
- Haemorrhage
- Won't wake up

Follow-up – options

- Pleural clinic
- Dedicated outpatient slots
- Medical daycase unit
- Pleural nurse

The business case

- Quality of patient experience
- Reduce LoS for 'undiagnosed' effusion
- Ambulatory management
- Local data:
 - bed days for pleural effusion diagnosis
 - number of interventions to get to diagnosis
 - number of external referrals

Cost of the kit

- Rigid kit – Wolf/Storz circa £80k
- Semi-rigid – depends on need for stack. Scope circa £30k
- Bid ready for any circumstances:
 - capital planning
 - end of year surplus
 - charitable fund/League of Friends
 - Cancer Alliance funding

Before the first patient

- ?visit a friendly local provider
- dummy run with whole team and whole kit
- focus on:
 - equipment availability
 - patient access and positioning
 - sterile field
 - operating the kit
 - dealing with complications (bleeds)

When you're ready...

- Big effusion for the first few
- Ideally younger patients, few comorbidities
- Good performance status
- Prognosis >3/12
- Beware anticoagulation/ antiplatelets



Complications

- Mortality 0.3%
- Major complications 1.8%
 - bleed
 - empyema
 - port site or tract metastasis
 - bronchopleural fistula/air leak/'pneumothorax'
 - pneumonia
- Minor complications 7.3%
 - bleeding/hypotension./fever/AF/subcutaneous emphysema/wound infection

KMH experience

- Pleurodesis rate 80%
- Service has adapted over time
 - C19
 - Patient preferences
 - TAPPS/IPC-Plus studies

Conclusion

- Useful tool
- Undiagnosed exudative pleural effusions
- Think about:
 - location
 - staff
 - equipment
 - workup and follow-up
 - complications

Shameless plugs

- UK Thoracoscopy Course 2025, 24 April 2025 at King's Mill Hospital
- Access to documentation
- www.pleura.uk



UK Pleural Society