2-3 Port VATS Lobectomy

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VATS Lobectomy

- 1992-94 reports of series on vats lobectomy
- Non anatomic resections
- Wedge resections labeled as lobectomies
- Ralph CIS lobectomy etc
- Mini thoracotomies with Scope for light labeled as VATS

CALGB 39802

- USA National protocol 1998 run at Brigham and Women's Hospital/Boston
- Established standard definition and protocol for VATS lobectomy
  - 3-4 ports
  - Larger port (utility incision maximum length 4- 8cm)
  - No dissection or further extension below the skin edges
  - No rib retractor
  - Anatomic dissection and individual ligation of vein, artery and bronchus
  - Lymph node assessment (sampling or dissection) same as in thoracotomy

Current Technique

- VATS can be performed with the same instruments that are used for thoracotomy
- Full Lateral decubitus
- Monitor(s) near the head of the table
- Placement of incisions is key as in any VATS surgery

VATS Incision Placement

- Insicion 1
  - Approximately 6th intercostal space
  - 1 cm
  - in the mid clavicular line below the nipple
  - Inframammary crease
  - Instrument port
- Incision 2
  - 1cm
  - 7th or 8th intercostal space
  - Camera port

VATS Incision Placement

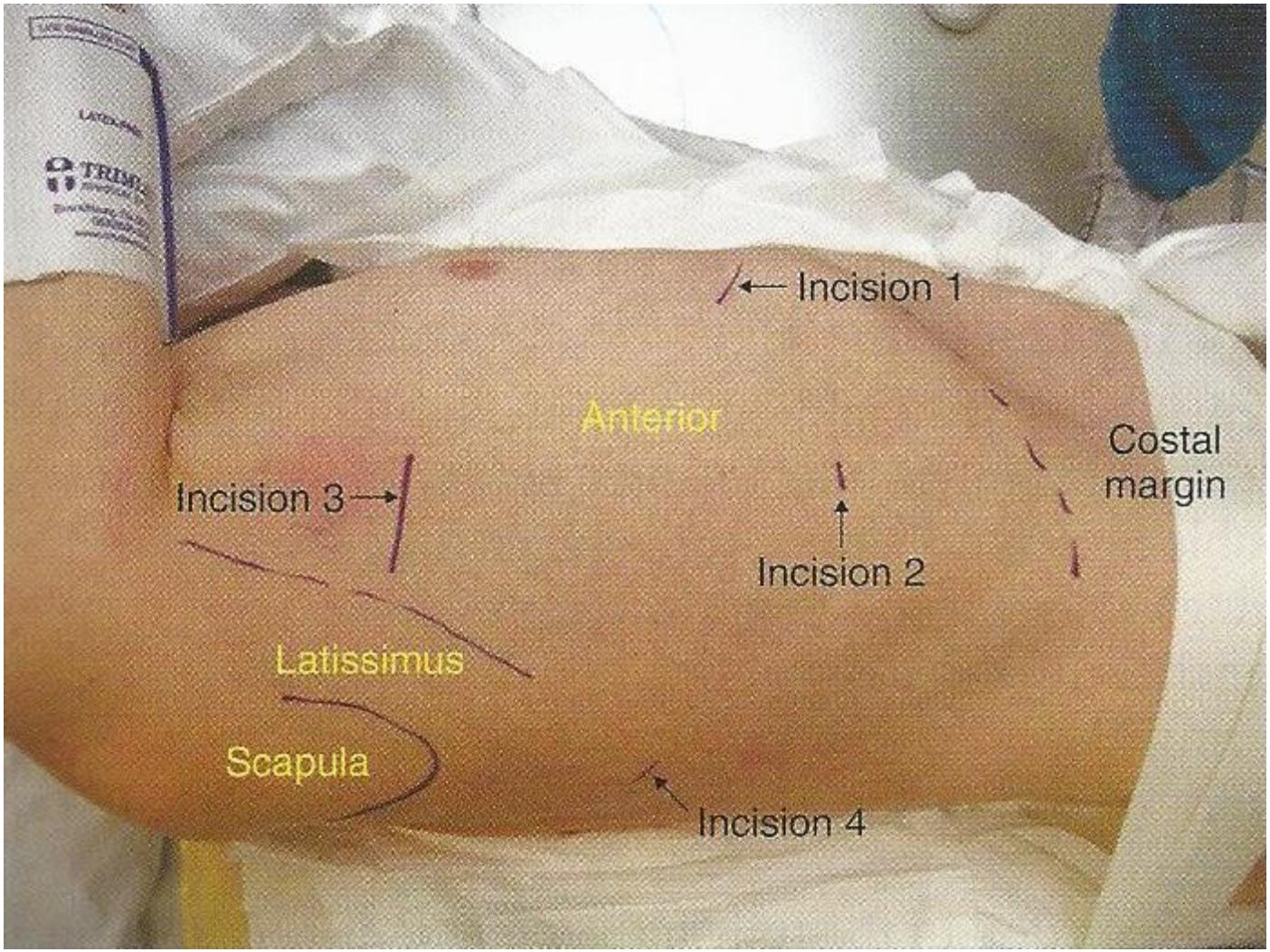
- Insicion 3
  - Utility port
  - 4-6 cm
  - Avoid lattissimus muscle
  - No extension below the skin
  - Placement depends on the lobe to be resected
    - About the 5th interspace
    - One rib lower for middle or lower lobe lobectomy

VATS Port Placement

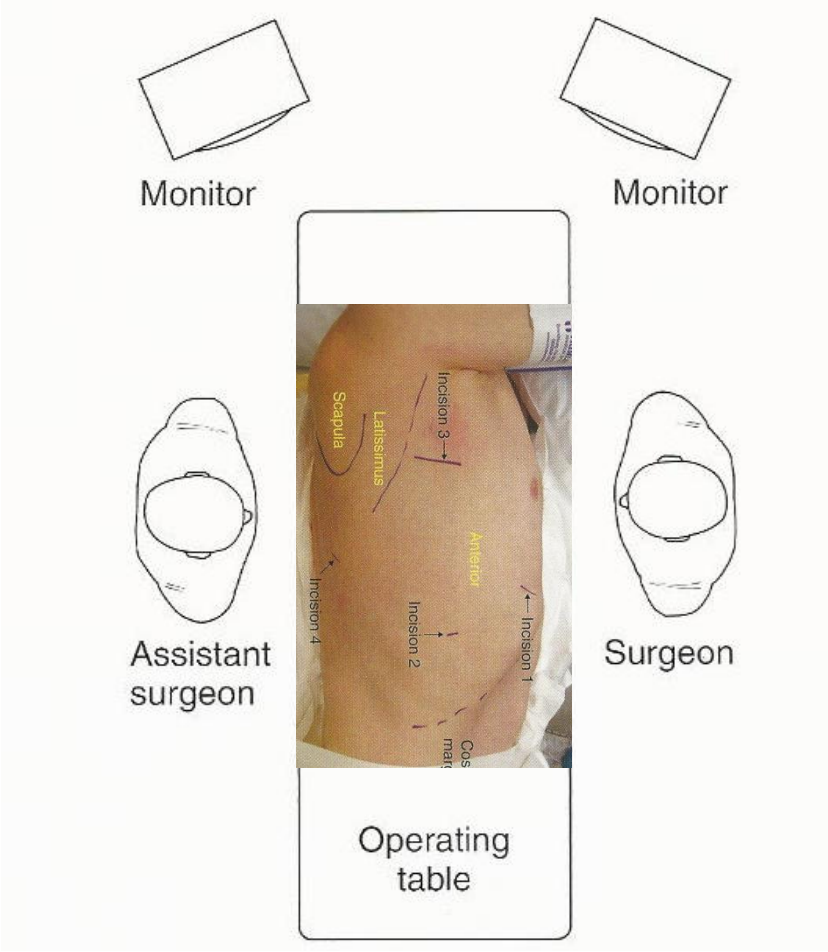
- 4th incision
  - 1 cm
  - 5 cm below scapular tip
  - Half way towards the spine
  - Useful for the stapler or nodal dissection
  - Optional (most surgeons in the USA do not use)

Instruments

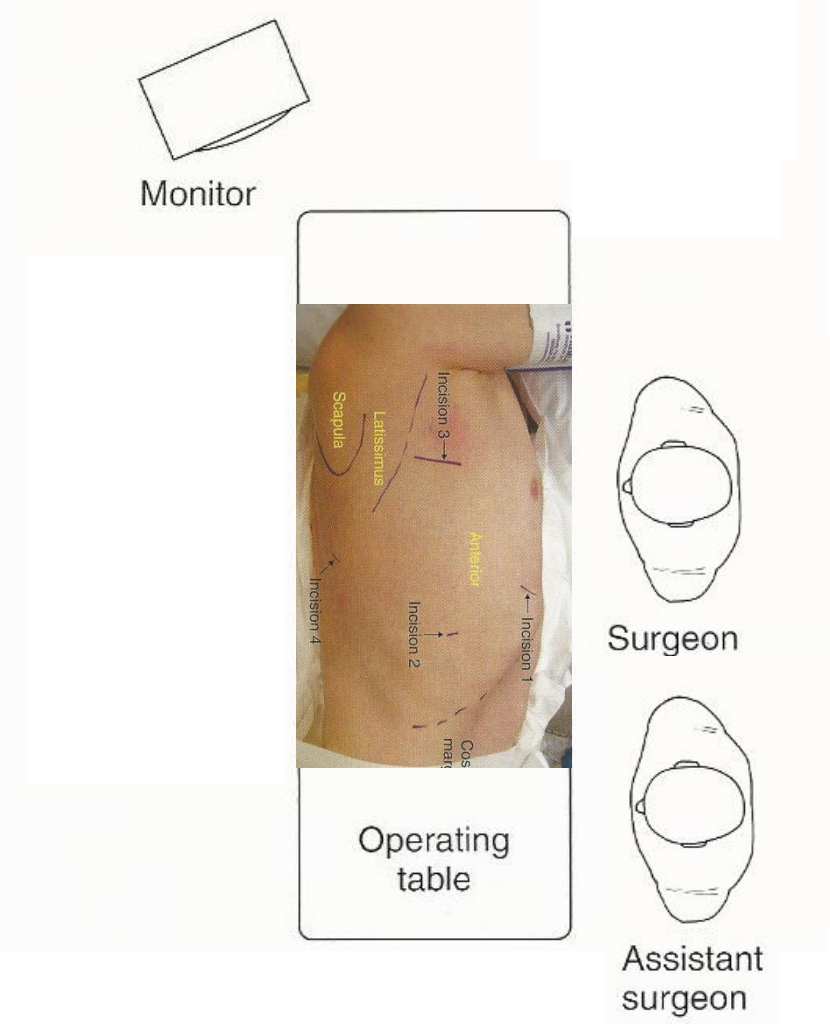
- 30 degree camera
  - 5 or 10mm camera
- Essentially the same instruments as in thoracotomy
- Endoscopic Staplers
- Energy Sources
- Bag for the specimen
- CO2 insufflations not needed


Incision 1
Anterior
Costal
margin
Incision 3
Incision 2
Latissimus
Scapula
Incision 4

Typical USA version

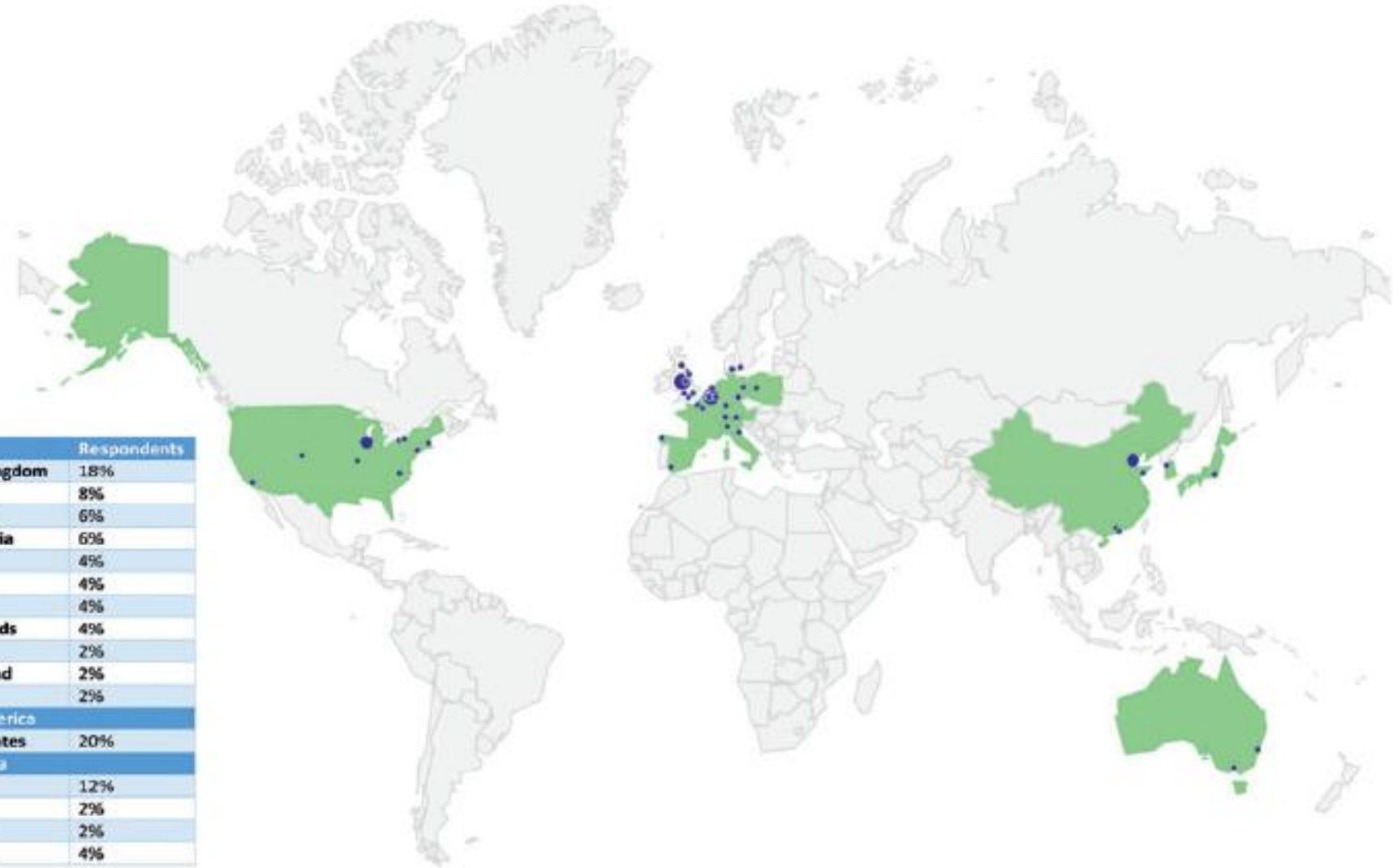


- Two monitors
- Assistant is opposite
- Less crowding
- More assistants



- One monitor
- Assistant has the same perspective and can assist better
- Nurse can hold camera
- More crowding

VATS Lobectomy at 20 years:
A consensus Statement 1993-2013



Europe	Respondents
United Kingdom	18%
Belgium	8%
Germany	6%
Scandinavia	6%
France	4%
Italy	4%
Spain	4%
Netherlands	4%
Austria	2%
Switzerland	2%
Poland	2%
North America	
United States	20%
Australasia	
China	12%
Japan	2%
Korea	2%
Australia	4%

VATS Lobectomy at 20 years: A consensus Statement 1993-2013

Indications and contraindications for VATS lobectomy	Number of respondents (%)
T status for tumour	
≤5 cm (T1 and T2a)	16 (32)
≤7 cm (T1, T2a and T2b)	31 (64)
None of above	3 (6)
N status for tumour	
N0 only	1 (2)
N0 + N1	28 (56)
N0 + N1 + N2	21 (42)
Chest wall involvement is	
A contraindication if involving parietal pleura	3 (6)
A contraindication if involving rib(s)	31 (62)
Not a contraindication for VATS lobectomy	16 (32)
Centrality of tumour is	
An absolute contraindication if invading hilar structure(s)	12 (24)
A relative contraindication if invading hilar structure(s)	32 (64)
Not a contraindication	6 (12)

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Previous thoracic surgery/pleurisy is	
An absolute contraindication	0
A relative contraindication	10 (20)
Not a contraindication	40 (80)
VATS lobectomy is contraindicated if FEV1 is	
<80% predicted	0
<70% predicted	1 (2)
<60% predicted	0
<50% predicted	5 (10)
<40% predicted	6 (12)
<30% predicted	38 (76)
VATS lobectomy is contraindicated if DLCO is	
<80% predicted	0
<70% predicted	0
<60% predicted	0
<50% predicted	8 (16)
<40% predicted	10 (20)
<30% predicted	32 (64)

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Preoperative investigation for N-status should include	
PET/CT and sampling of positive mediastinal lymph nodes	40 (80)
PET/CT and routine sampling of mediastinal lymph nodes	9 (18)
PET/CT only	1 (2)
Your preferred approach to sample mediastinal lymph nodes	
EBUS/EUS	30 (60)
Mediastinoscopy	18 (36)
VAMLA	1 (2)
I do not sample lymph nodes preoperatively	1 (2)
Would you undertake VATS assessment routinely at the time of surgical resection?	
Yes	38 (76)
No	12 (24)

The most appropriate management of mediastinal lymph nodes is:	
Total ipsilateral lymph node dissection	33 (66)
Lobe specific lymph node dissection	6 (12)
Systematic lymph node sampling	11 (22)
Lobe specific sampling	0
Random/no sampling	0
Which group(s) would you recommend to have total ipsilateral lymph node dissection?[a]	
All patients	33 (66)
Central tumour	13 (26)
Patients unfit for adjuvant chemotherapy or radiotherapy	5 (10)
N1-positive disease	15 (30)
N2-positive disease	14 (28)
None of above	1 (2)

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Under which of the following clinical situation(s), would you recommend conversion to open thoracotomy?[a]	
Pneumonectomy	17 (34)
Bronchial sleeve	27 (54)
Vascular sleeve	48 (96)
Broncho-vascular sleeve	48 (96)
Pleural adhesions	2 (4)
Absence of fissure	1 (2)
Poor lung deflation	12 (24)
Major bleeding	46 (92)
Broncho-pleural fistula	18 (36)
Chest wall involvement	30 (60)
Operating theatre time pressure	2 (4)
None of above	0
Your preferred loco-regional postoperative pain management is	
PCA only	6 (12)
Epidural	17 (34)
Paravertebral	10 (20)
Intercostal nerve block	17 (34)
Others	0

[a]More than one answer option allowed.

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Advantages/Disadvantages 3-port technique

- Easy to learn
- Easier for assistants to help you
- Essentially no special instruments needed
- Does have the same oncologic efficacy as thoracotomy
  - All nodal stations can be assessed
  - Vein is divided First
    - Less systemic spilage
- Two more insicions than Uniport
  - No extension of dissection under the skin
- Robotic uses more incisions
- Proven track record 25 years


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