Thoracic SAQ
Endoscopic Thoracic Sympathectomy
N R Burri
Endoscopic Thoracic Sympathectomy

Anaesthesia for endoscopic thoracic sympathectomy

CEACCP | Volume 9 Number 2 2009
a) List the indications for endoscopic thoracic sympathectomy (ETS). (25%)

b) Outline the general (30%) and airway (15%) implications of managing a patient for ETS under general anaesthesia.

c) What are the most likely problems to be encountered in the intraoperative (15%)

d) and postoperative period? (15%)
WEIGHTING

• a) Indications.........................................................25%........5
• b) General implications GA..................30%.........6
• Airway implications GA...................15%.........3
• c) Intraoperative problems...............15%.........3
• d) Post operative problems...............15%.........3
INDICATIONS.....5 marks

- **Mainly**: Palmar Hyperhidrosis

- **Also for**:
  - Craniofacial hyperhidrosis
  - Facial blushing
  - Chronic Regional Pain Syndromes
  - Ischaemic Upper Limb Syndrome
  - Angina Pectoris
  - Congenital long QT syndrome

- **No longer** used for uncomplicated Reynaud’s
ANATOMY

- T1 – L2: Paravertebral sympathetic chains.
- Short Pre & Long Post Ganglionic Fibres.

- **T1-2**: H&N, **T1-4**: Thoracic Viscera, **T2-5**: UL
- Run behind parietal pleura in upper chest.

- Over the rib necks close to CostoVertebral Jn.
- Rib seen upper most in Thoracoscopy: 2\textsuperscript{nd}
SYMPATHTIC CHAIN

COLLAPSED LUNG
GENERAL IMPLICATIONS - 6 marks

Pre Op Assessment:
• Generally fit & Young but assess CVS in angina

Monitoring:
• Standard monitoring / invasive if unstable CVS/ increase NIBP frequency.
• Large bore IV access to cope with catastrophic bleeding

Position:
• Supine & Reverse Trendelenberg, Arms abducted
• Prone & lateral positions described.
• Pressure areas & nerve injuries
• Port @ 4/5 ICS AAL: Avoids damage to Long Thoracic nerve of Bell

Surgical Technique:
• Extensive sympathectomy- compensatory sweating (50%) / limit the extent.
AIRWAY IMPLICATIONS - 3 marks

TECHNIQUES: LA, SLT, DLT & Lung Isolation

i. **Original description under LA by Kux:**
   Needle 5/6 ICS / Pneumothroax/ GA with SV /Prone position (in 1978 !!!!)

ii. **GA with DLT for Lung Isolation/FOI check**
   Isolation - gas insufflation is unnecessary / keep < 1 ltr of CO₂ insufflation.

iii. **GA with SLT without lung isolation:**
   Necessary to insufflate CO₂ to visualize SC.
   Limit insufflation pressure to 5-10 mmHg.

iv. **Other options:**
   Proseal LMA & IPPV / SLT+Blocker.

**NOTE:** Use of DLT has replaced SLT use, worldwide.
INTRAOPERAIVE PROBLEMS

• Positioning: Brachial plexus Injuries (arm abduction)
• OLV: Shunt up to 35%
• Hypoxia: $2^0$ Atelectasis & impaired HPV

Management:
• Airway positioning / Gas/ FiO$_2$ / PEEP
• CPAP isolated lung. intermittent coordinated ventilation.
• Use air instead of N$_2$O
• Minimal VA (Iso @1 MAC=20% impaired HPV)
• TIVA: less impairment of HPV

• Sudden cardiovascular collapse: $2^0$ CO$_2$ insufflation.
• Lung collapse on initial side: Reinflate under vision

Preparedness:
To manage vascular trauma & emergency Thoracotomy
**POST OPERATIVE PROBLEMS**

- Analgesia for Chest pain (Multimodal LA /Opiate/Paracetamol/NSAID)
- Hypoxia: Residual Pneumothorax CXR
- Compensatory sweating
- Gustatory sweating
- Horner’s syndrome
- Subcutaneous emphysema
- Haemothorax
- Pleural effusion
- Bleeding
Endoscopic transthoracic sympathectomy

26.5% pass rate.

- Universally answered badly.
- Never anaesthetized a patient for the procedure.
- No knowledge about the procedure despite being part of the syllabus.
- Knowledge of OLA.
- Effects of a capnothorax.
- Indications for a sympathectomy.
- Pass mark to reflect the level of difficulty ("hard").
10 key facts out of 23 facts required to pass.
Mean score 7.7/20 & SAQ WAS A STRONG DISCRIMINATOR

a) Indications for transthoracic sympathectomy
   • Hyperhidrosis
   • Chronic pain/upper limb regional pain syndrome

b) General Implications
   • Large bore IV access
   • Potential for major haemorrhage
   • May need arterial line

Airway implications
   • May need double lumen tube

c) Intraoperative problems
   • Hypotension from capnothorax, Hypoxia

d) Postoperative problems
   • May have residual pneumothorax
   • May be painful
THANK YOU ALL
&
WISH YOU ALL THE BEST