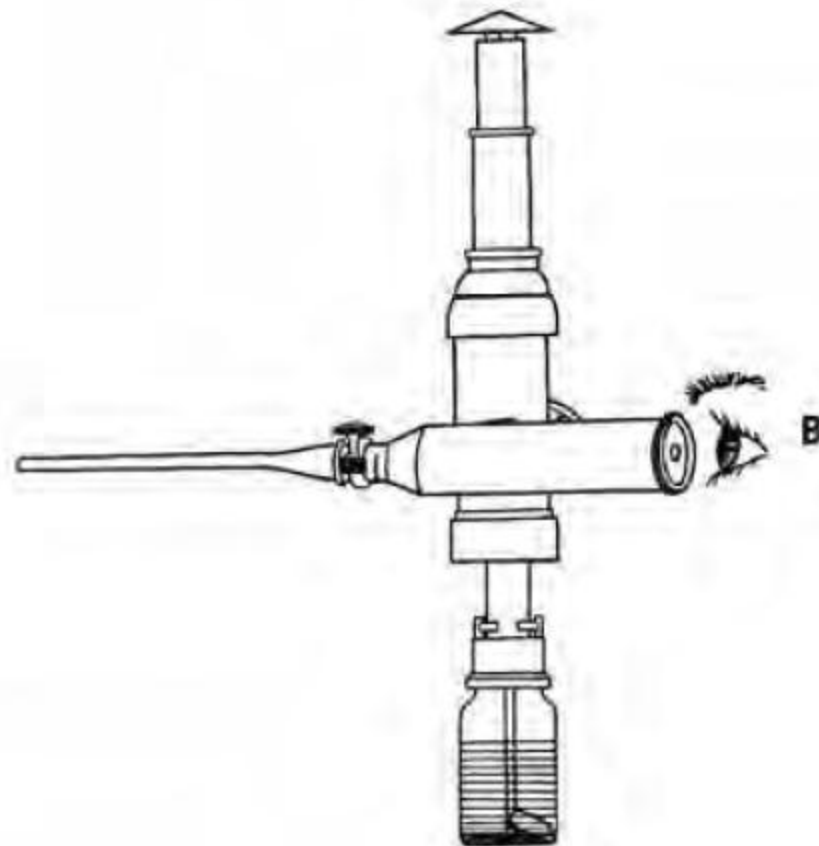
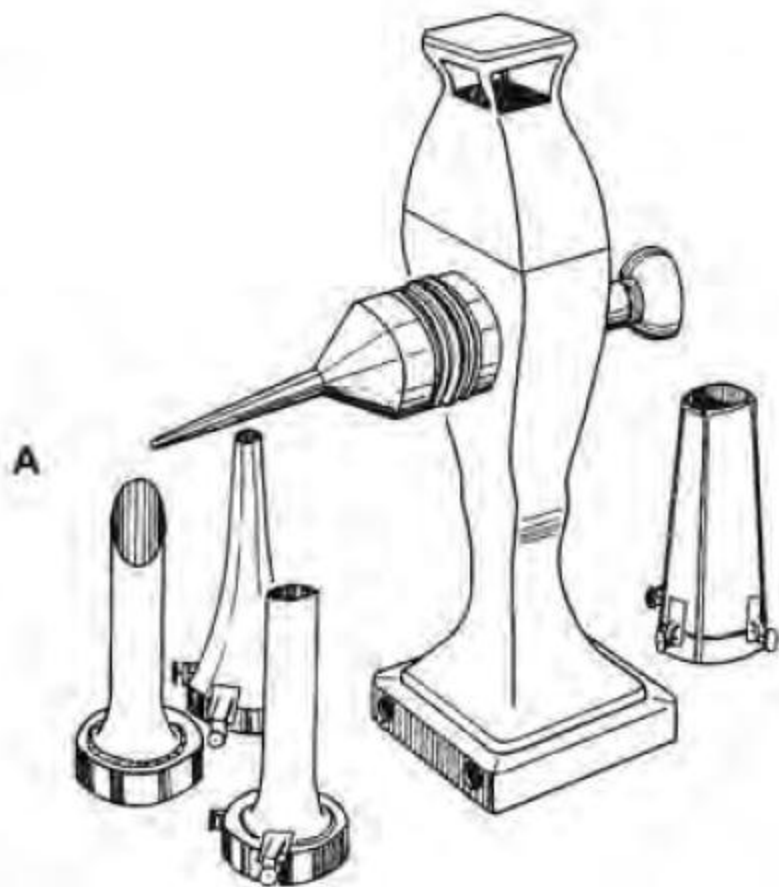


General Principles of Laparoscopic Abdominal Surgery

Presentation Outline

- Background
 - Historical perspective
 - Laparoscopy in general surgery
- Patient Selection and Preparation
- Pre-operative Preparation
 - Basic equipment
 - Patient Positioning
- Anaesthetic Issues
- Access and Port Placement
- Complications of Laparoscopic Surgery
- General Post-operative Care
- Summary

Background



Advantages

- Rapid recovery time
- Minimal immune response
- Minimal scar tissue formation
- Decreased post-operative pain
- Reduction in the incidence of post-op ileus
- Early mobilisation

Contraindications

- Absolute (rare):
 - Unfit for general anaesthesia
 - Pregnancy
- Relative:
 - Severe ischaemic or valvular heart disease
 - Increased intracranial pressure
 - Hypovolemia / shock

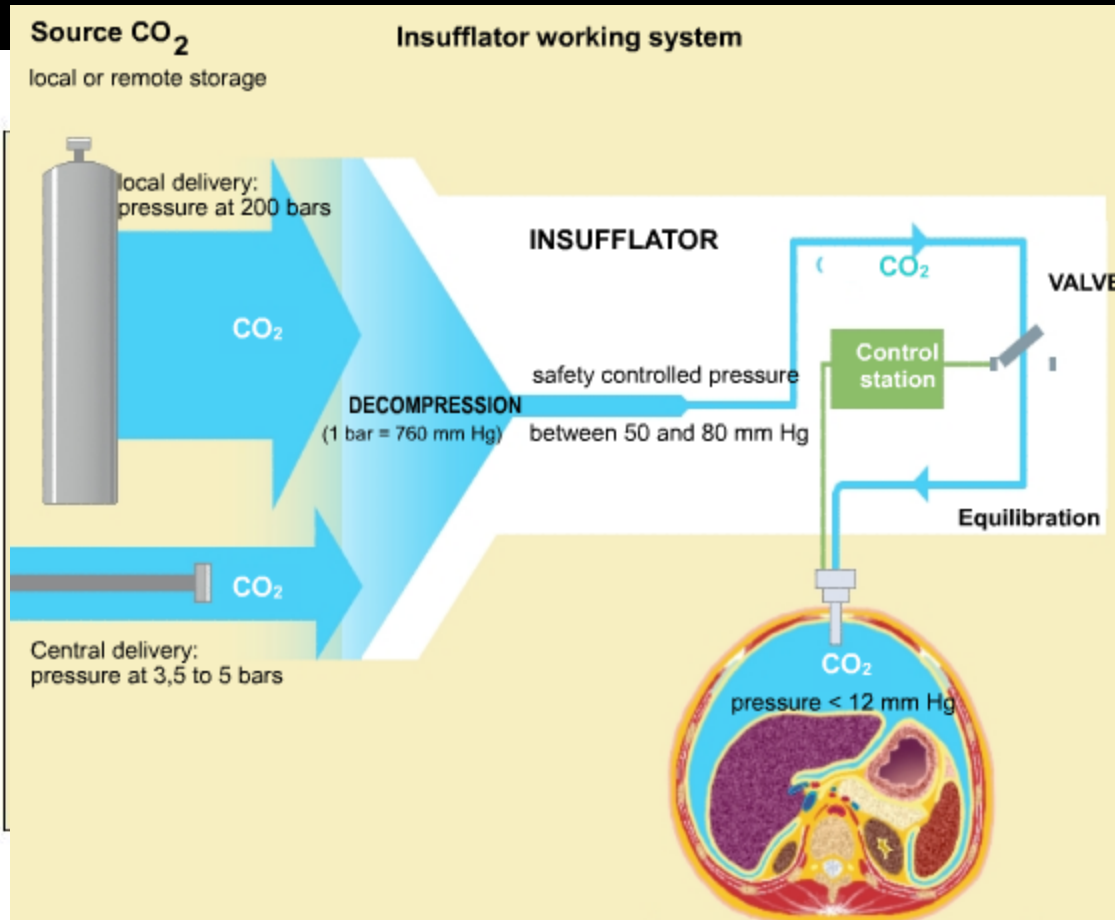
Patient Selection and Preparation

- Preoperative Evaluation:
 - Cardiopulmonary disease
- Specific factors:
 - Prior incisions, umbilical abnormalities, positioning limitations, ascites, Hx of DVT
- Preparation:
 - Pre-op antibiotics
 - DVT prophylaxis
 - Premedication

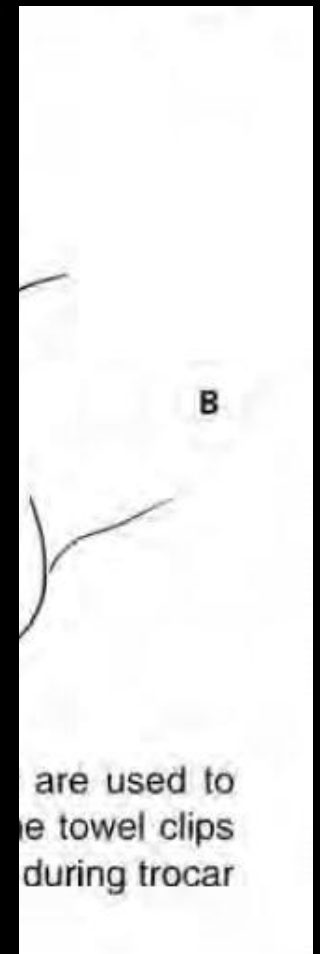
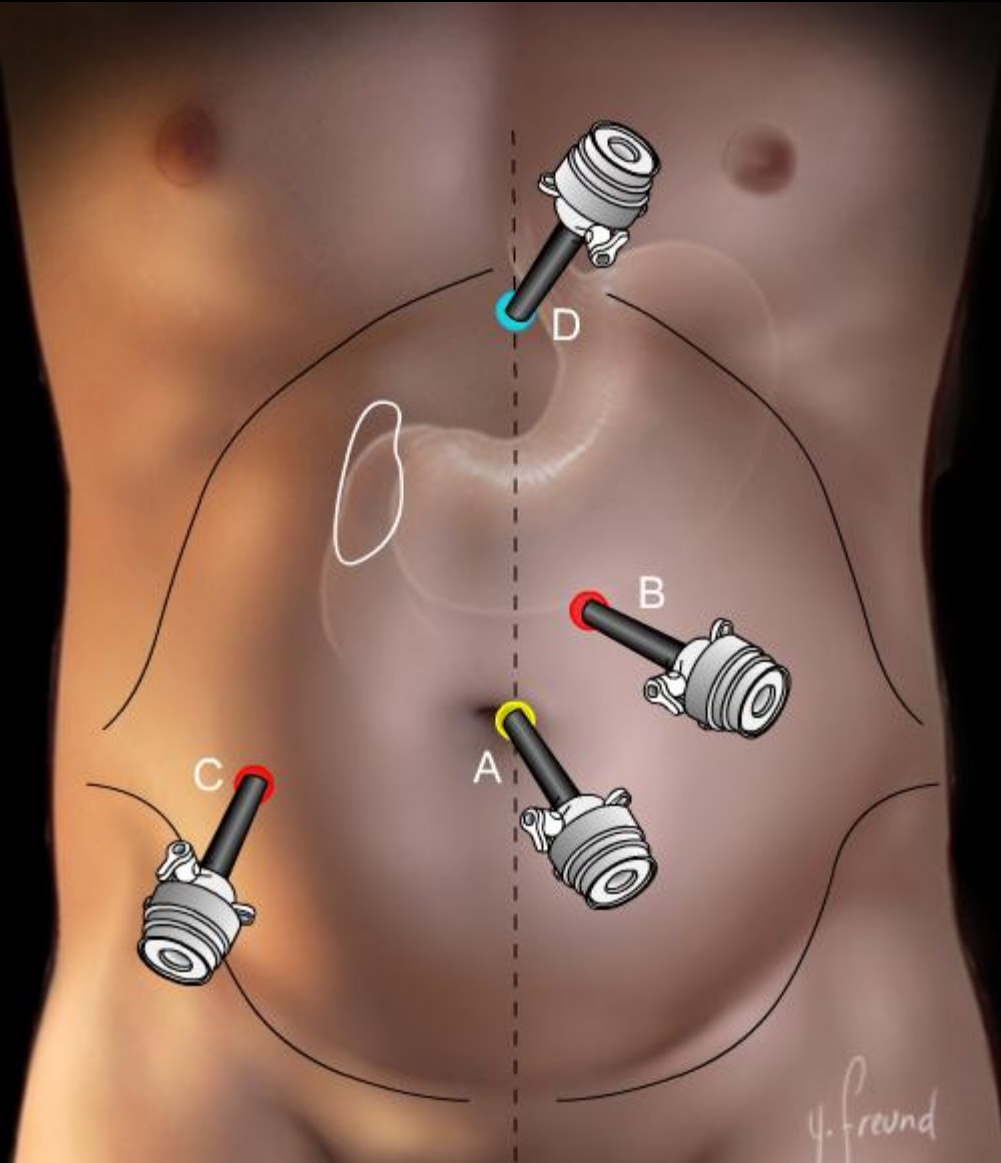
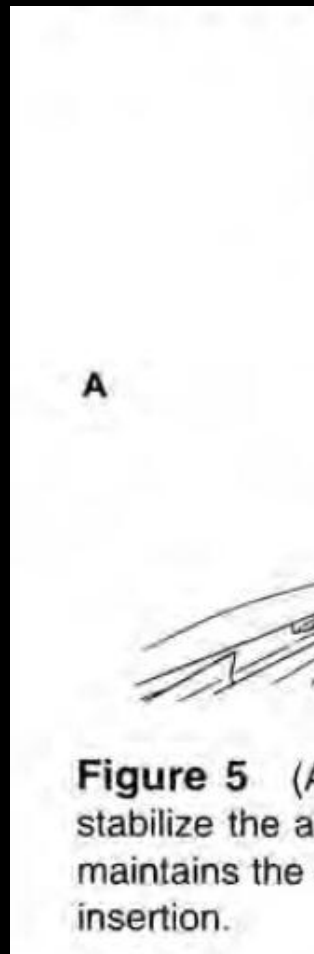
Pre-operative Preparation

- Basic equipment:
 - Insufflation device
 - Imaging system
 - Irrigation/aspiration unit
 - Electrocautery unit

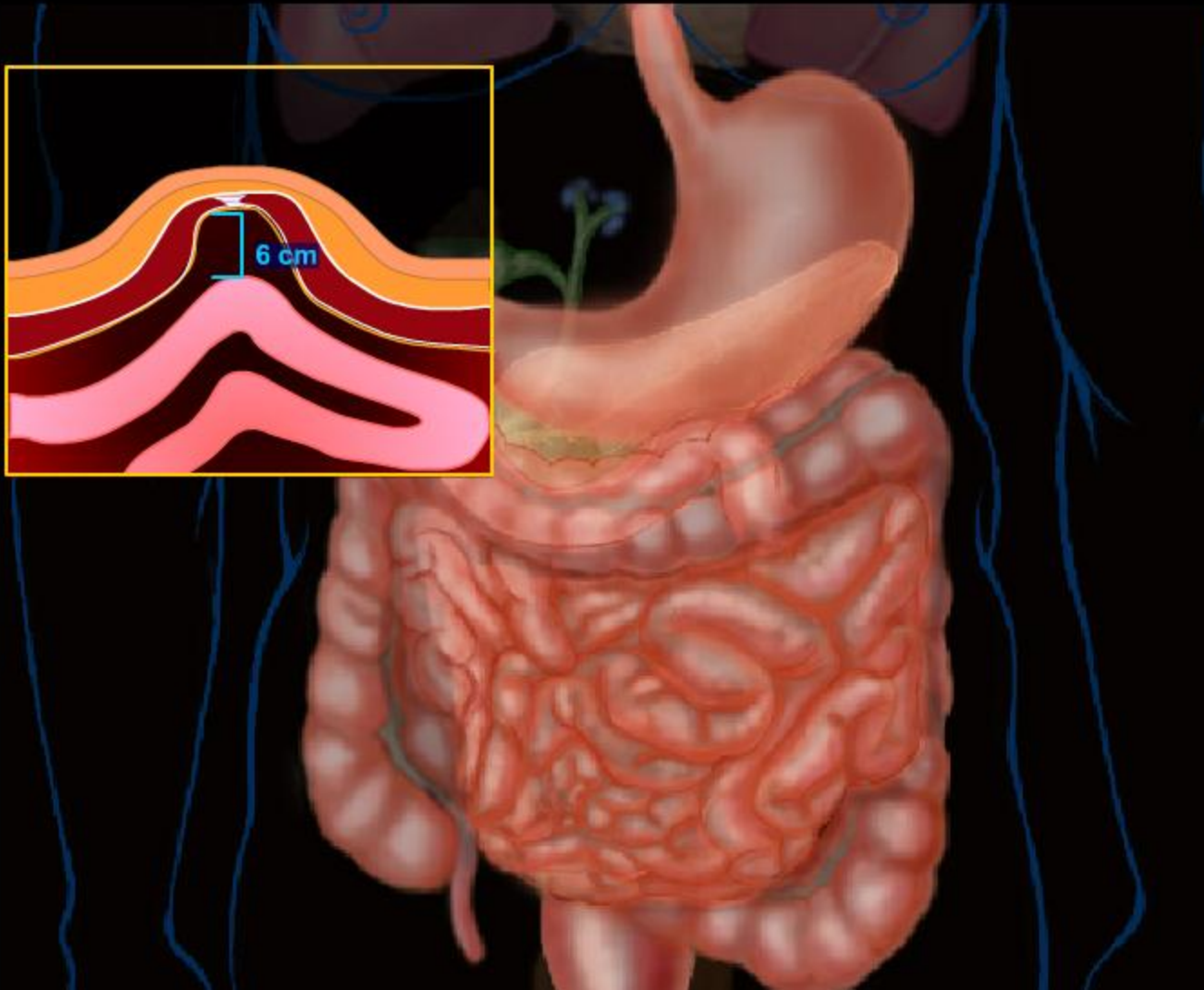
The 'Insufflator'



Access and Port Placement



Access and Port Placement



Anaesthetic Issues

- Effects of pneumoperitoneum
 - Haemodynamic changes
 - Respiratory changes
- Heat loss
- End-organ perfusion
 - ↓ circulatory support to intra-abdominal organs
 - ↓ renal $f(x)$ and urine output
- Neurological

Complications

**309 vascular injuries were reported
(Chandler et al., 2001)**

Iliac artery	32.3% (110)
Iliac or other retroperitoneal vein	16.8% (52)
Mesenteric vessels	13.9% (43)
Aorta	12.6% (39)
Abdominal wall vessels	9.3% (29)
Inferior vena cava	8.4% (26)
Major visceral vessels	3.2% (10)

Complications

- Structural injuries
 - Vascular (epigastric vessels > greater omentum)
 - Visceral (Small bowel > Large bowel > Liver)
- Gas embolism (< 0.6%)
- Pneumothorax/mediastinum/pericardium
 - More common in upper-GI surgery

Post-operative Care

- PONV (↑ incidence)
 - Ondansetron and other serotonin-receptor antagonists
 - Dexamethasone 5 – 10 mg as a prophylactic
- Incisional pain
 - > 3 days need to consider infection/hernia
- Shoulder pain
- Post-operative hydroceles
 - Post-laparoscopic hernia repairs and pelvic LN dissections.

In Summary

- Advantages of laparoscopic surgery
- Special considerations in pre-operative workup
- Post-operative Cx and considerations

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Room Setup

- 1) Radiological unit (optional)
- 2) Laparoscopic unit
- 3) Anaesthetic unit
- 4) Laparoscopic unit – extra monitors
- 5) Instrument table
- 6) Electrocautery
- 7) Operating table

