

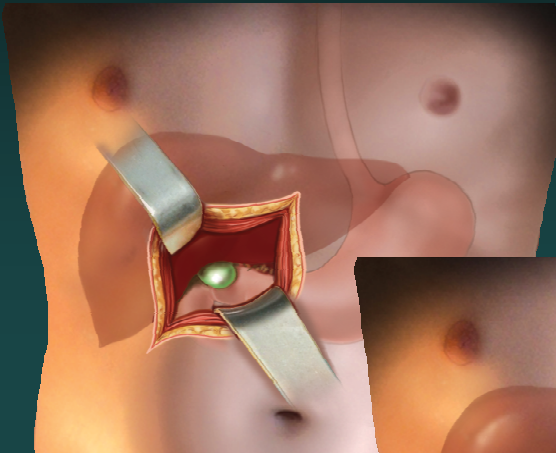
Problématiques de Recherche en Chirurgie Abdominale

Bernard Dallemagne, M.D

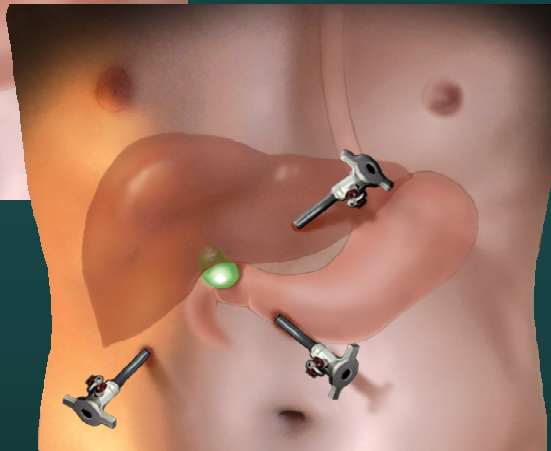
*Department of Surgery
& IRCAD
University Hospital of Strasbourg,
France*

Minimal Access Surgery

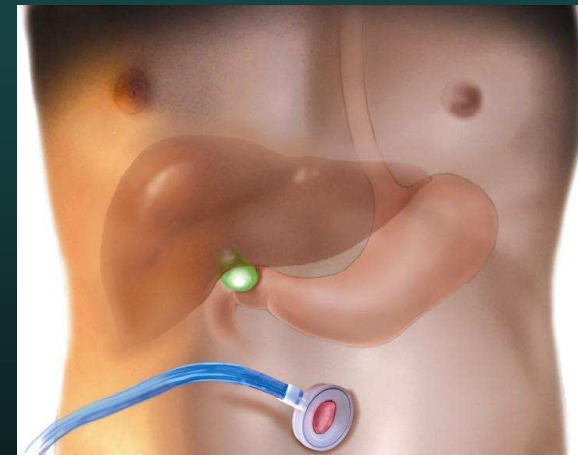
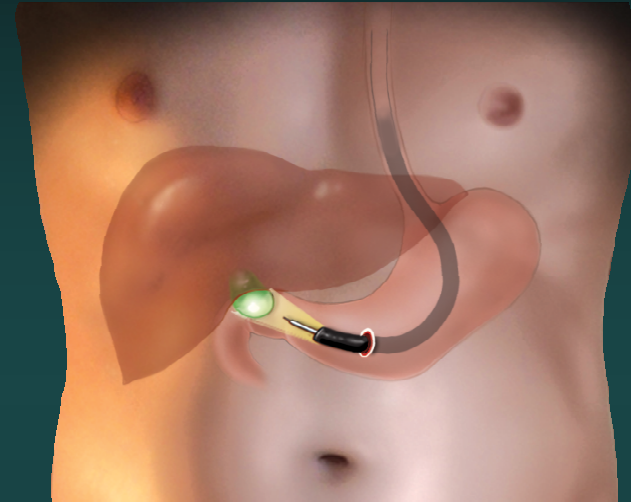
1886



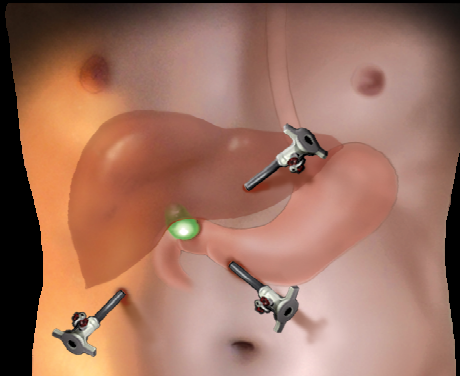
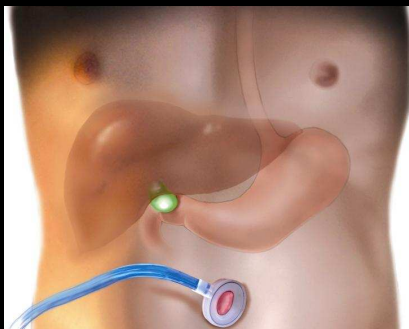
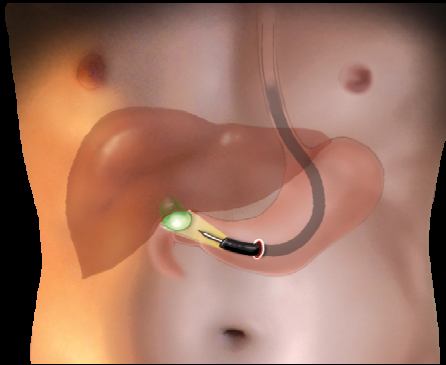
1987



2010



NOTES : NO SCAR surgery

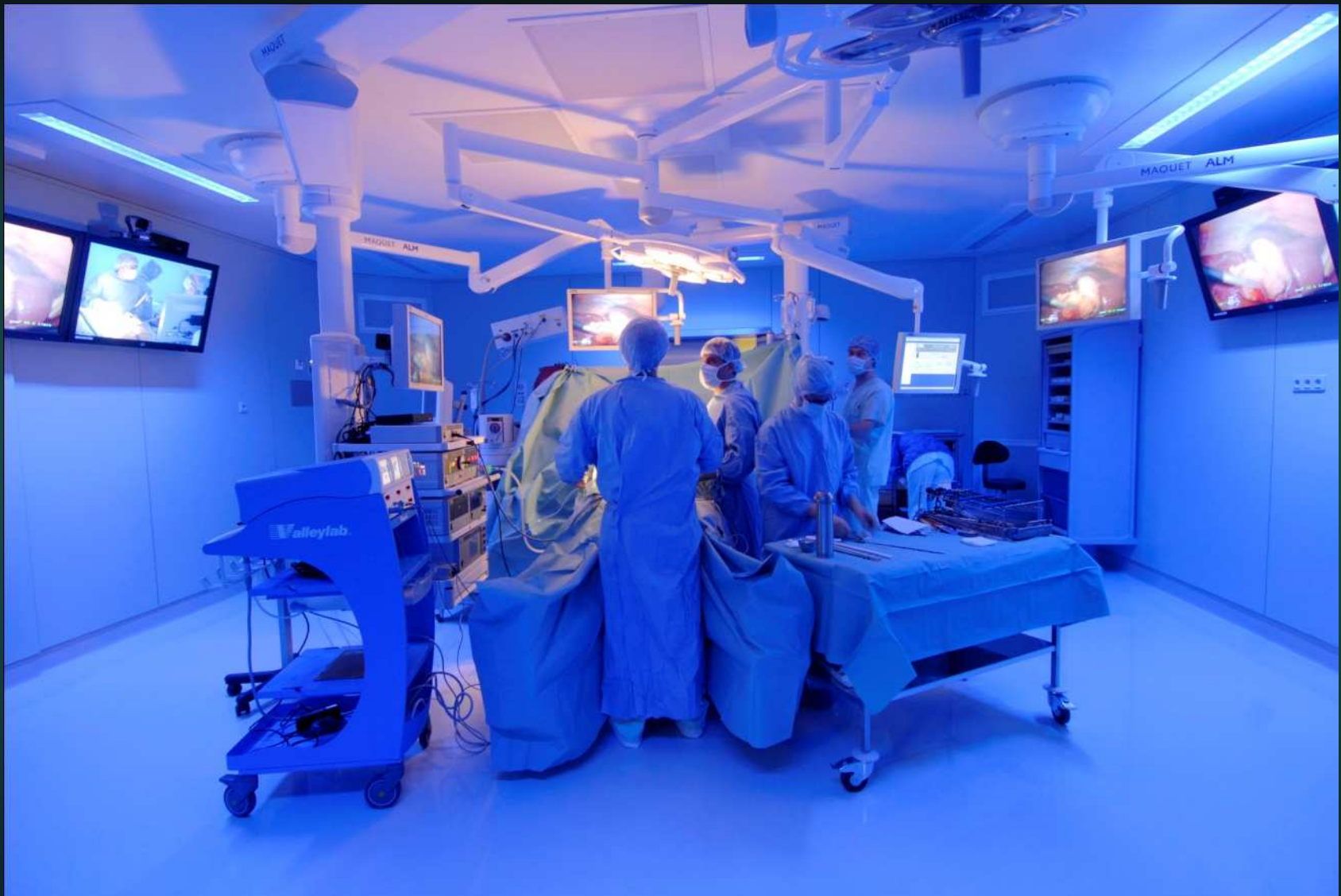


- Less (no) abdominal wall incision
 - scars
 - wound infection
 - incisional hernias
- Less physiologic stress ?
- Faster recovery ?

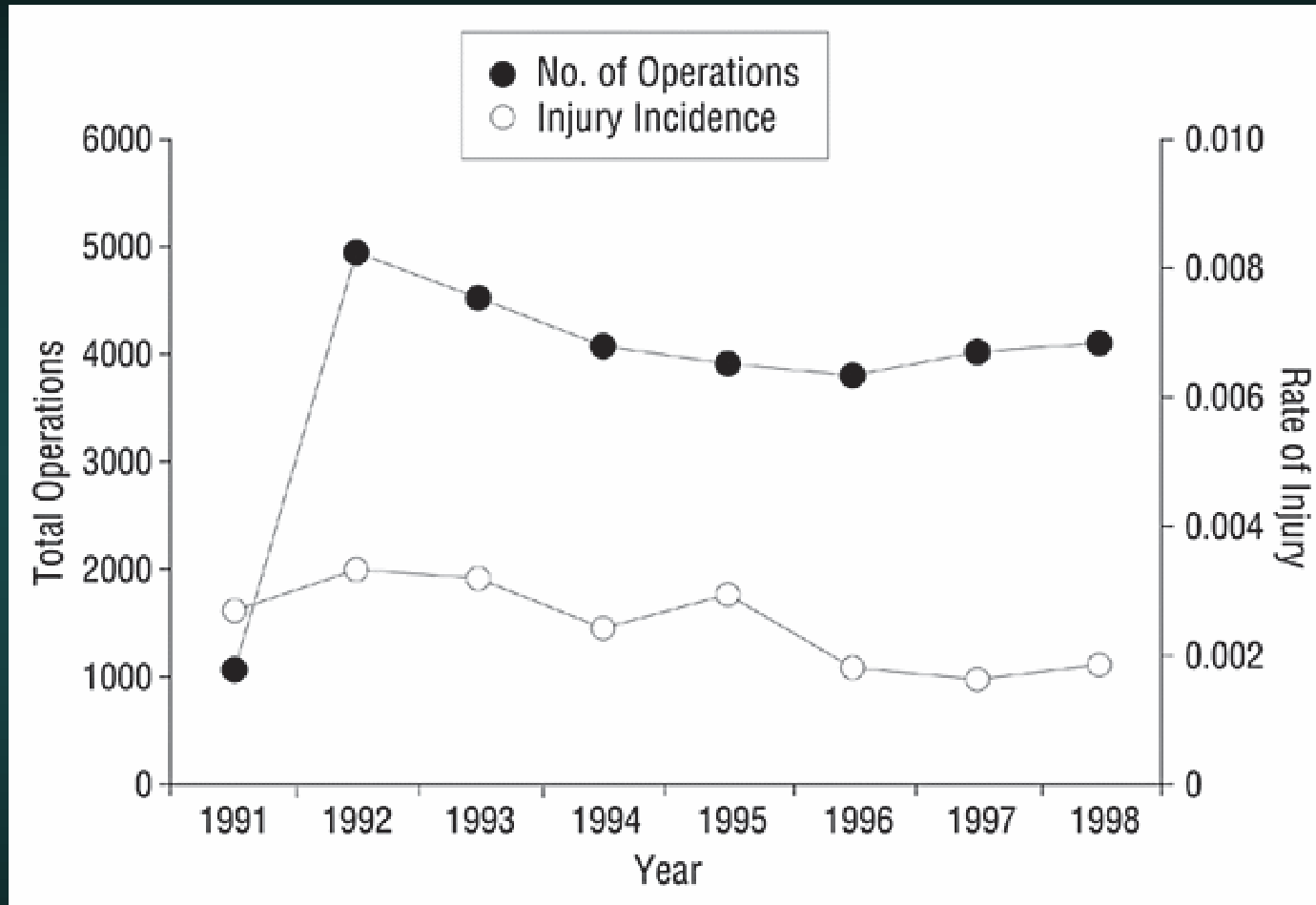
Minimal Access Surgery: Challenges

- Physical separation of the visual and physical aspects of the operation
- Loss of tactile sensation
- Fixed-position of entry ports
- Degrees-of-freedom of movements
- Organ retraction
- Triangulation

www.videosdahora.com.br



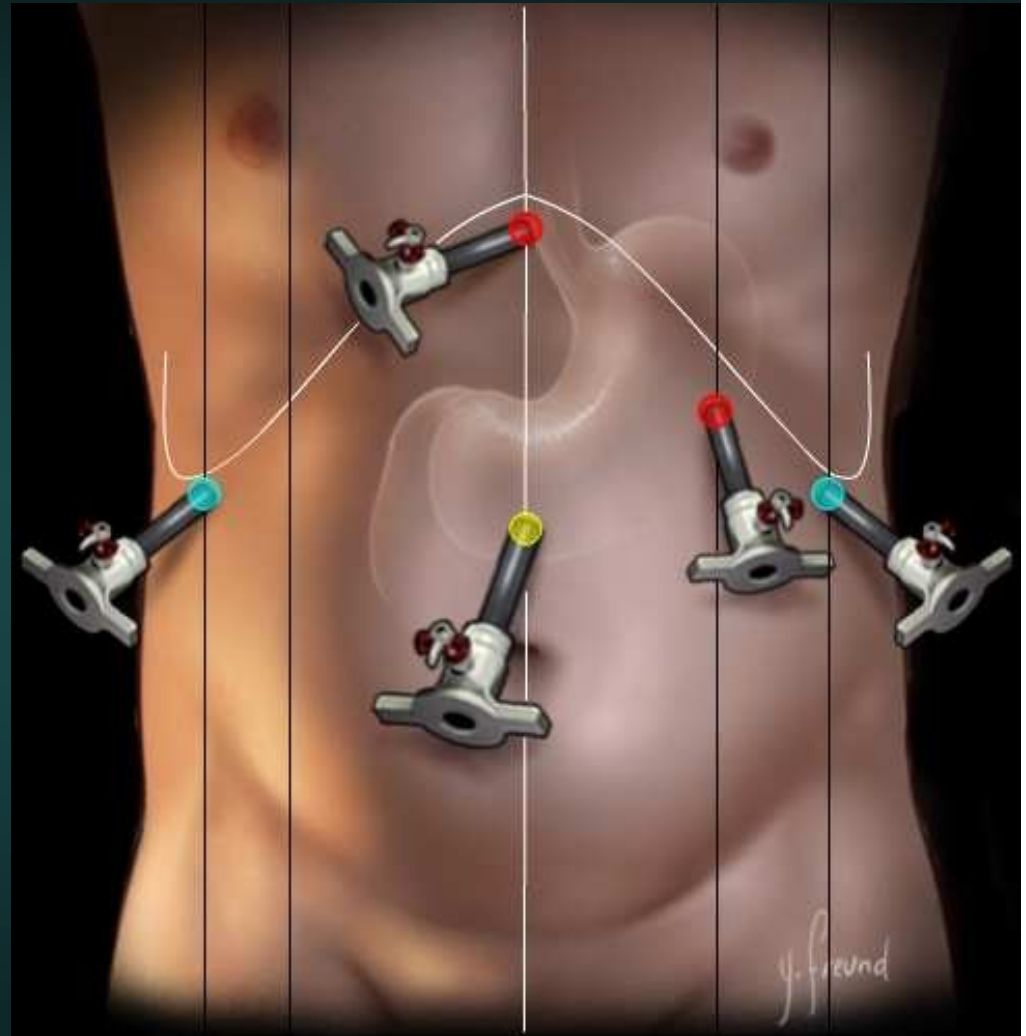
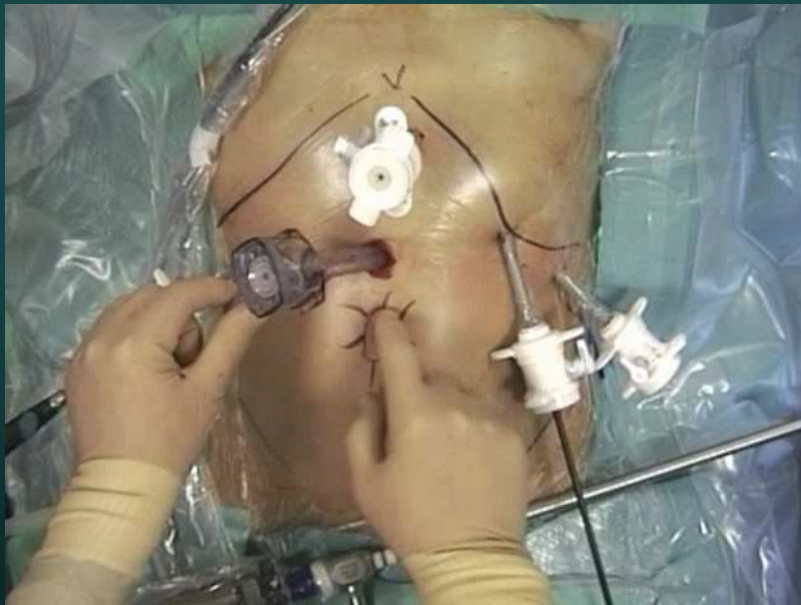
Number of patients undergoing laparoscopic cholecystectomy and rate of common bile duct injury from 1991 through 1998 (Washington state : 30630 LC)



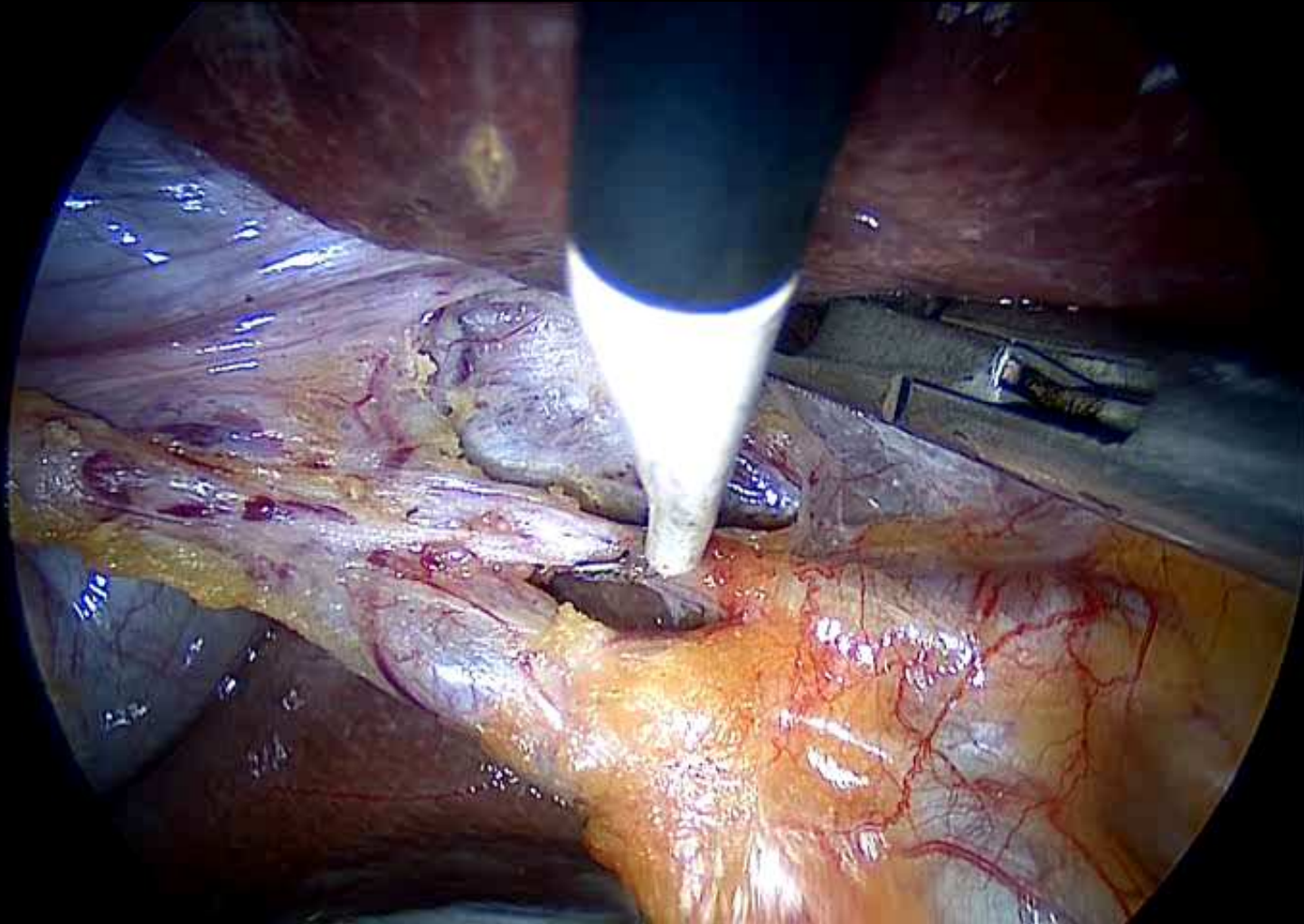
Flum, D. R. et al. Arch Surg 2001;136:1287-1292.

Triangulation

- trocars placement
- dissection of the GE junction
- Length of the abdominal esophagus
- crural repair
- fundic mobilisation (SG vessels)
- architecture of the fundoplication







Single Port Laparoscopic Surgery

TROCARS

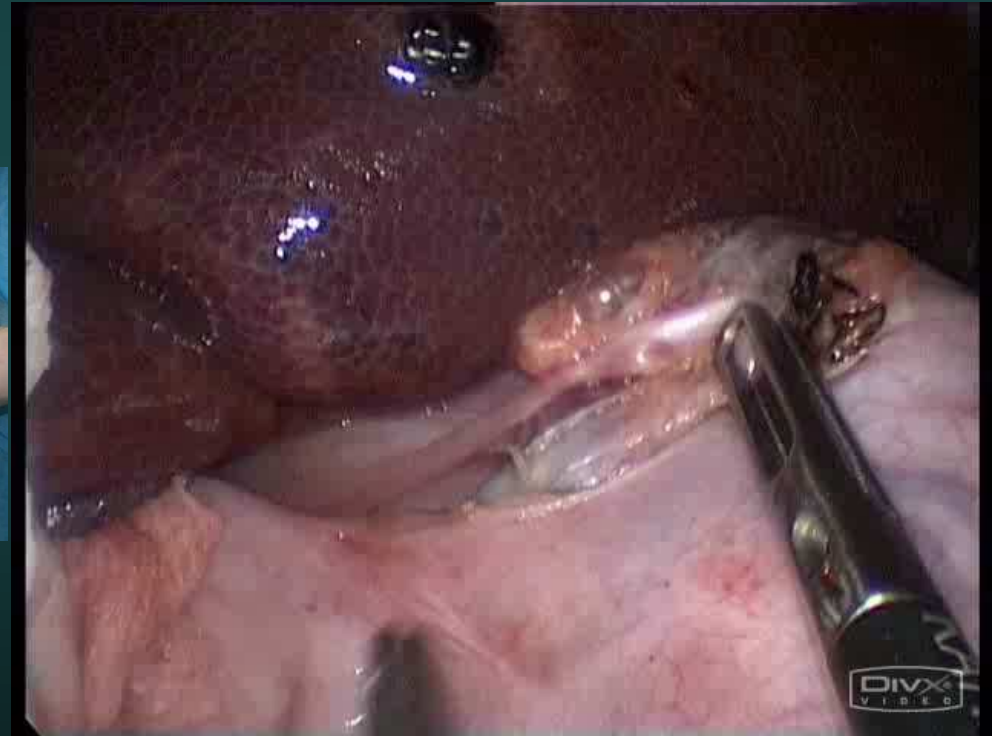


SILS™ Covidien

Single Port Laparoscopic Surgery

Potential Drawbacks

- Loss of triangulation of instruments
- Limitation of surgical movements



Single Port Laparoscopic Surgery

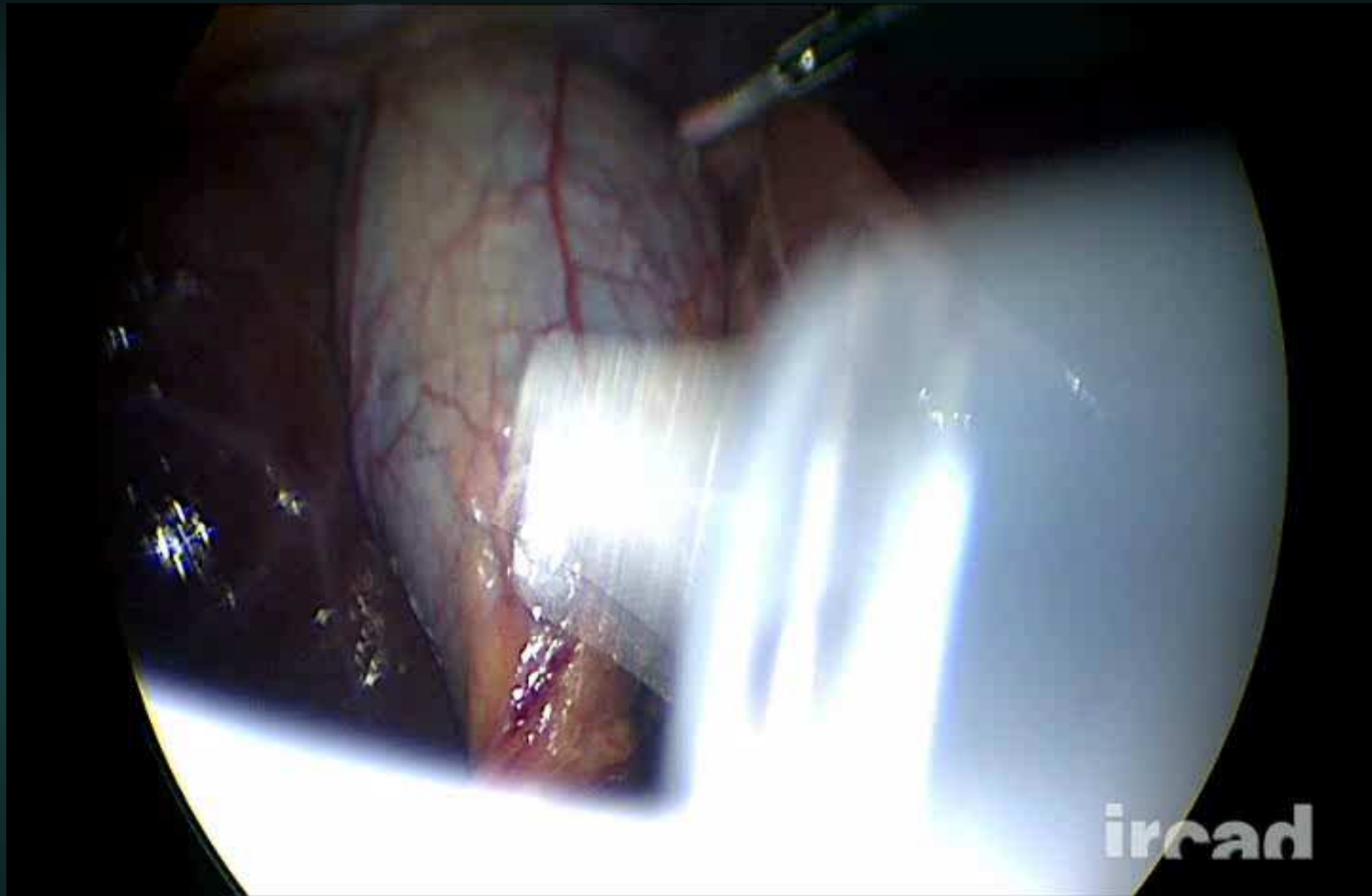


SILS™ Covidien

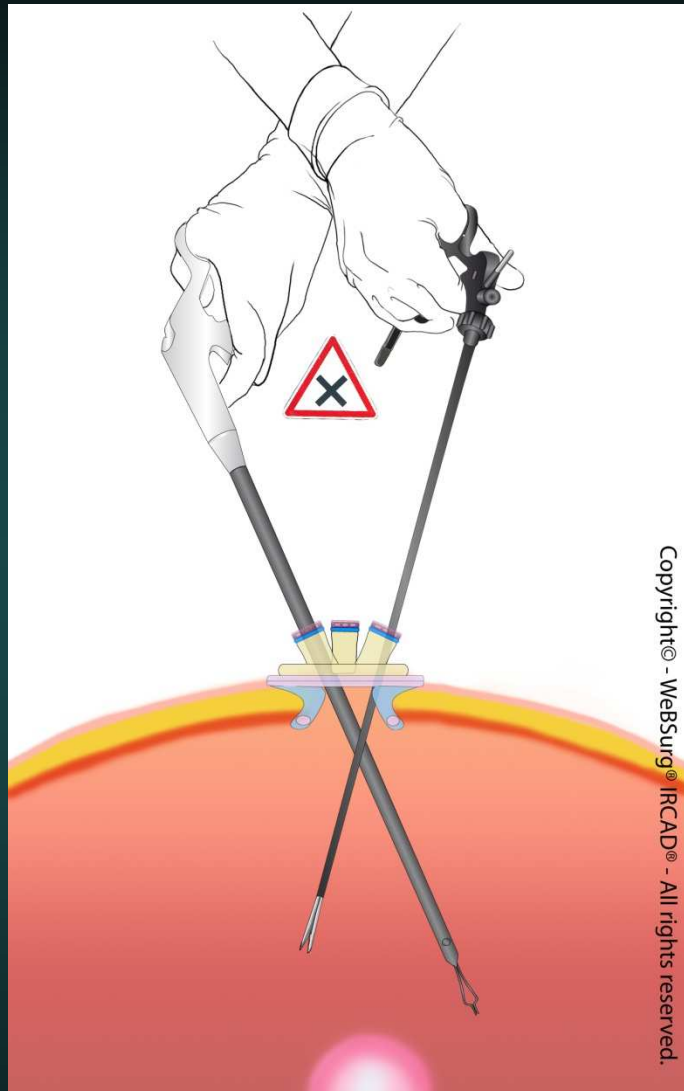
TROCARS



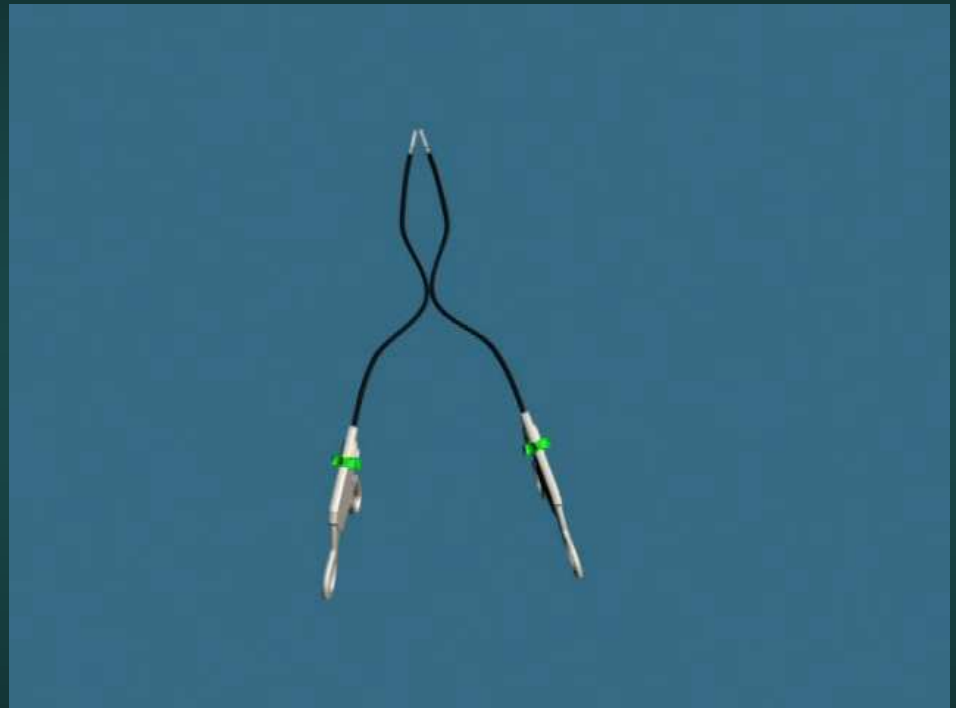
SINGLE PORT: Challenges

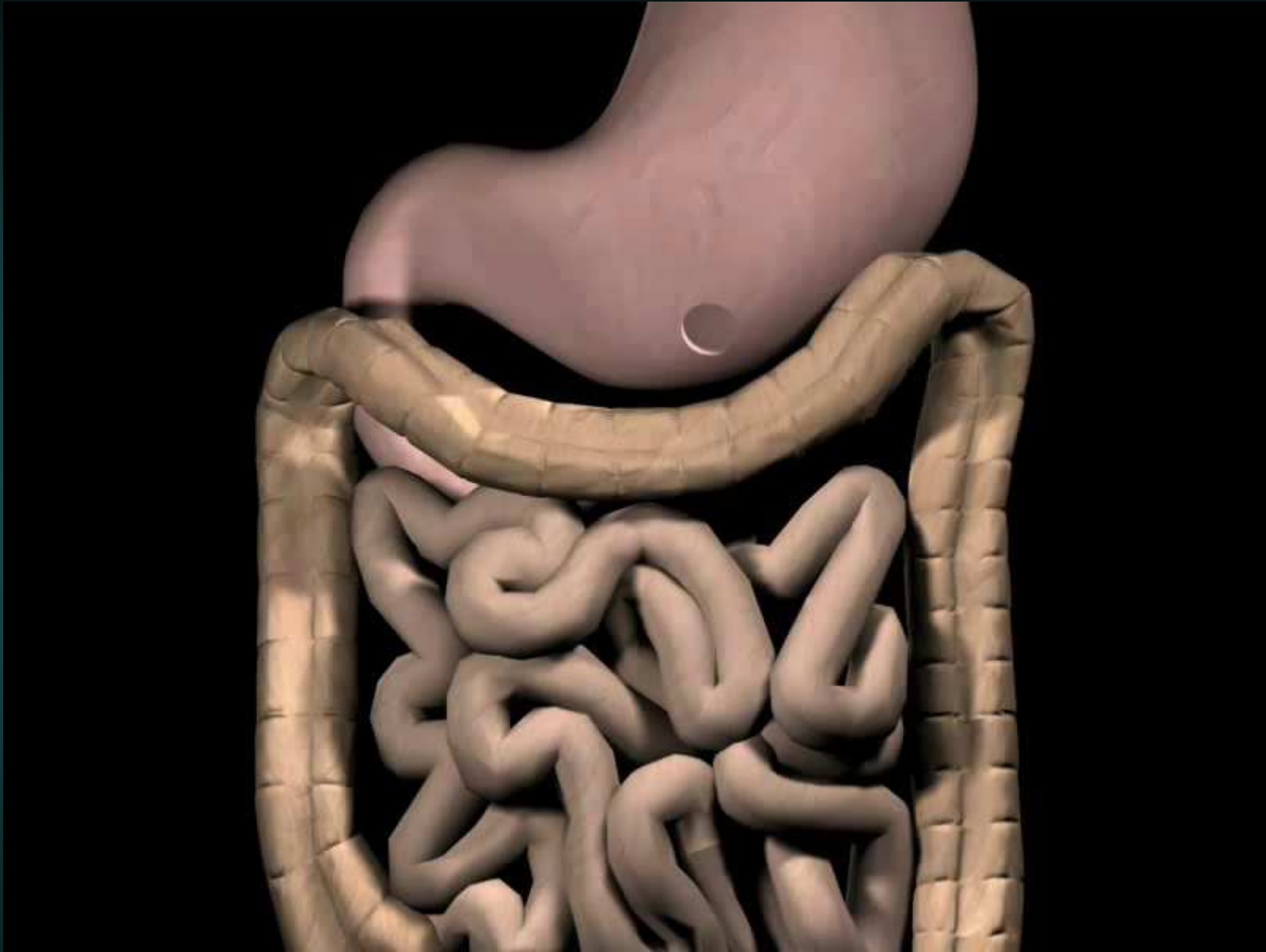


Single Port Laparoscopic Surgery



INSTRUMENTS





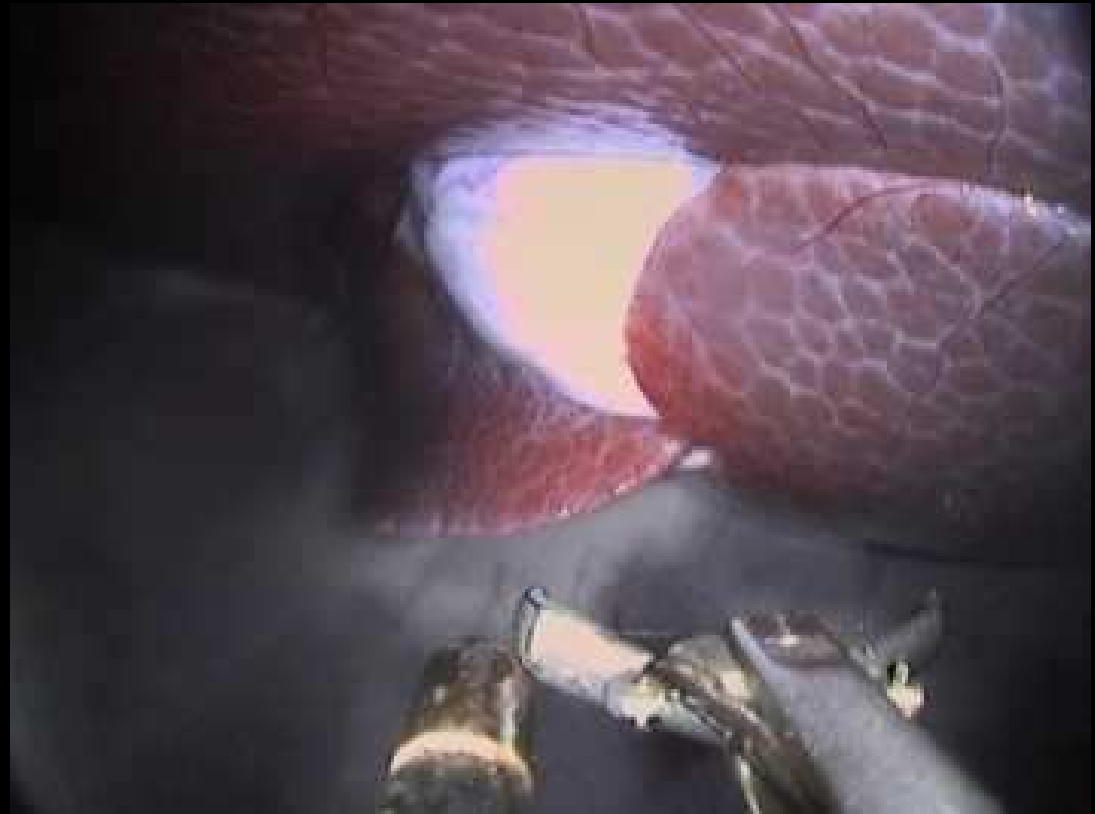
N.O.T.E.S: Exposure & Retraction **Dual Scope Technique**



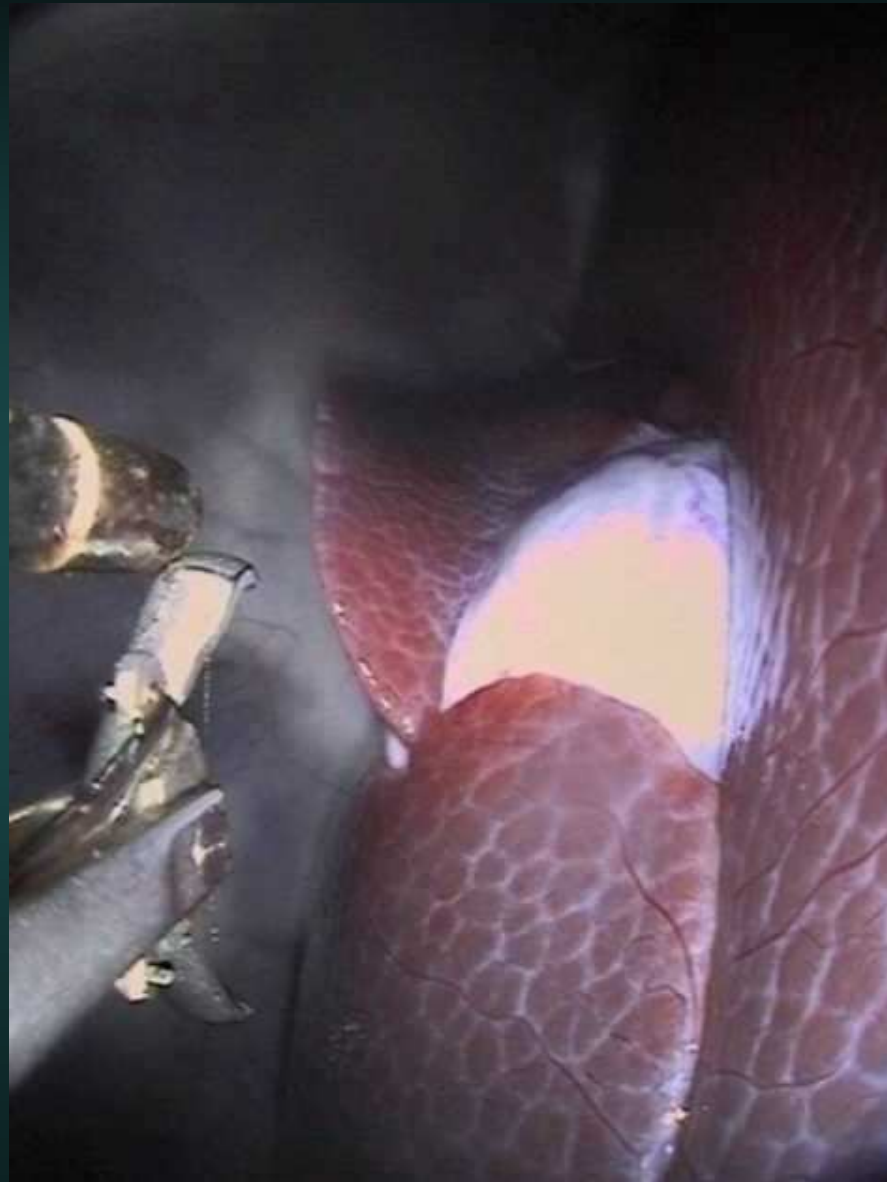
Transgastric cholecystectomy: Vision

The Challenges

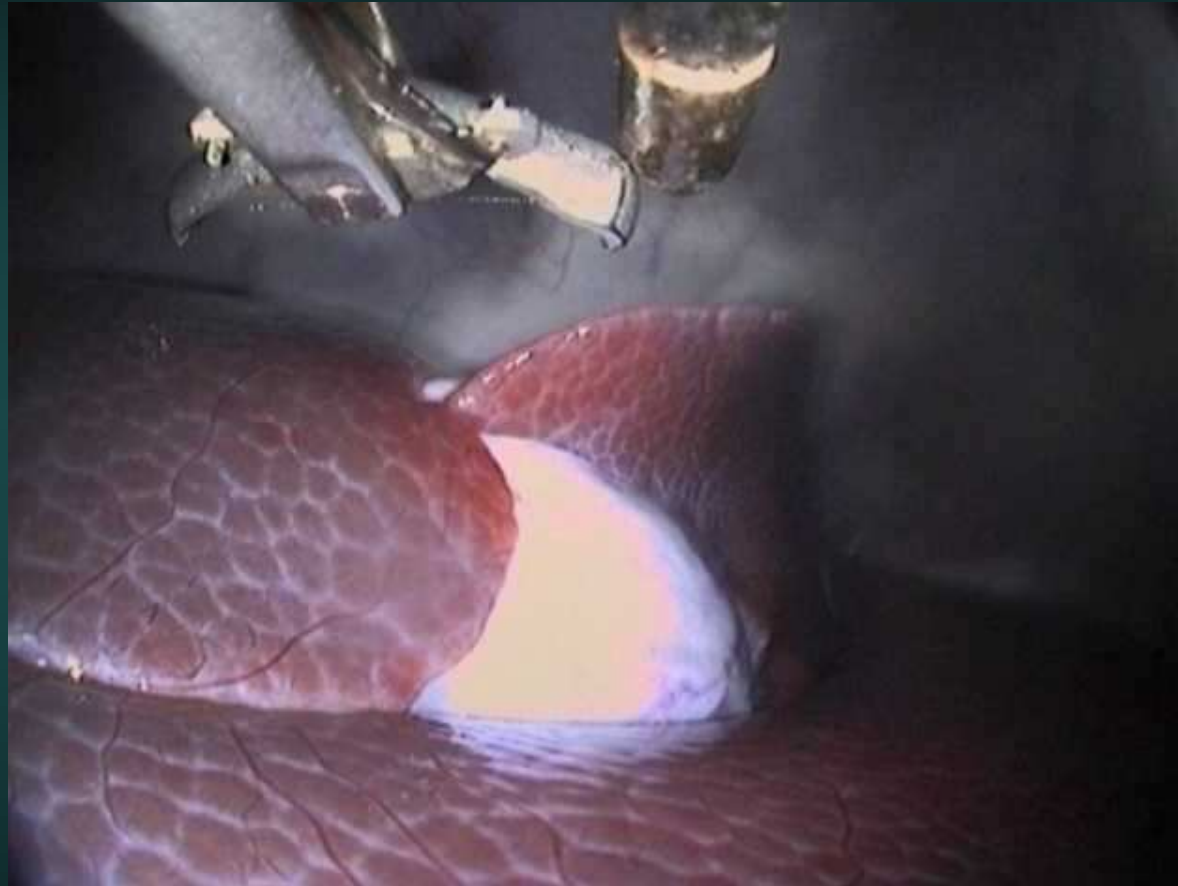
- ✓ Gastrotomy
- ✓ **Vision**
- ✓ Exposure
- ✓ Dissection
- ✓ Closure



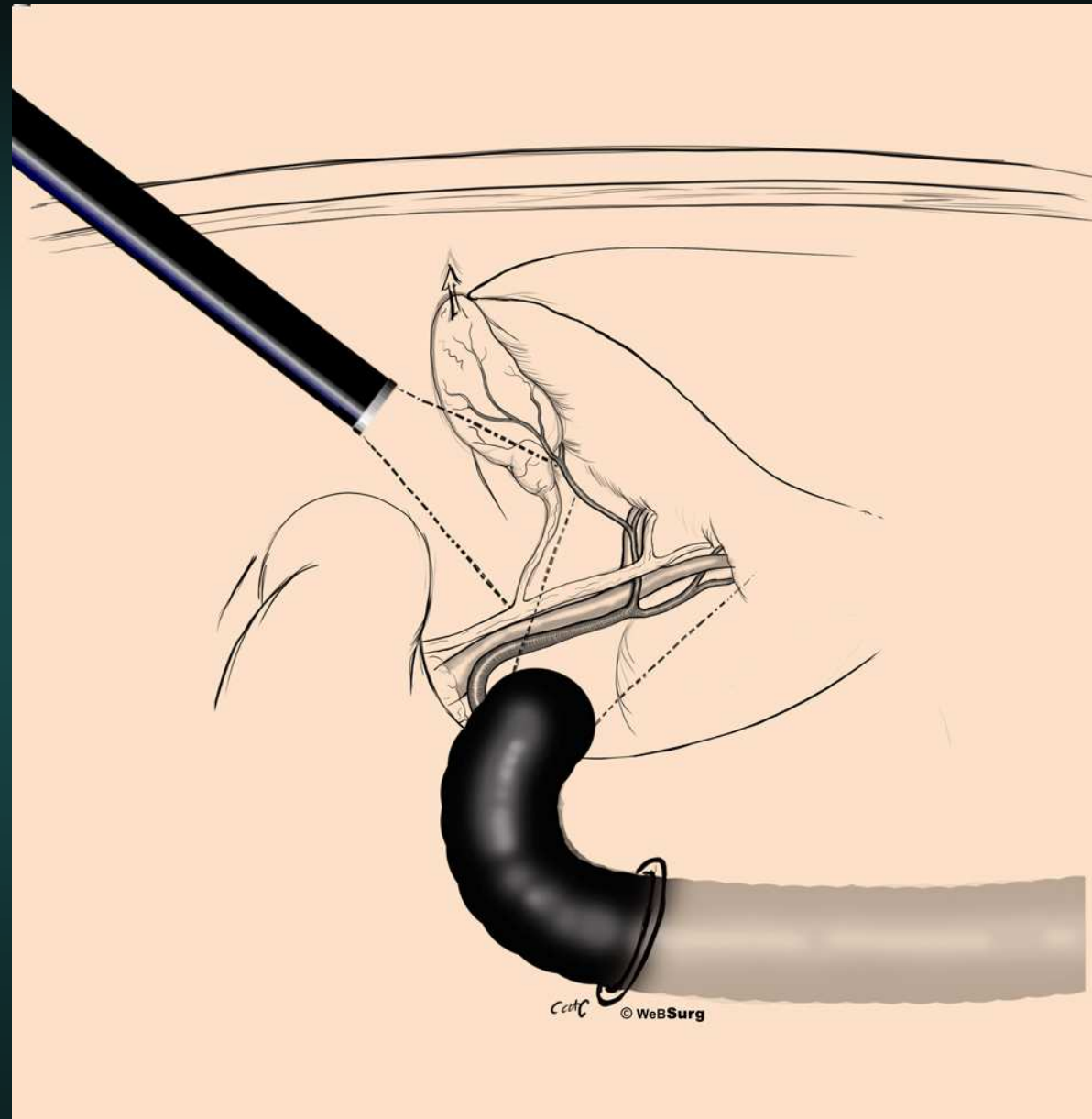
Transgastric Cholecystectomy



Transgastric Cholecystectomy



Transgastric Hybrid Cholecystectomy



NOTES : Challenges



ircad

ircad

NOTES : Challenges

ircad

ircad

Minimal Access Surgery: Challenges

- Physical separation of the visual and physical aspects of the operation
- Fixed-position of entry ports
- Degrees-of-freedom of movements
- Organ retraction
- Triangulation
- **Loss of tactile sensation**

Image Guided Surgery

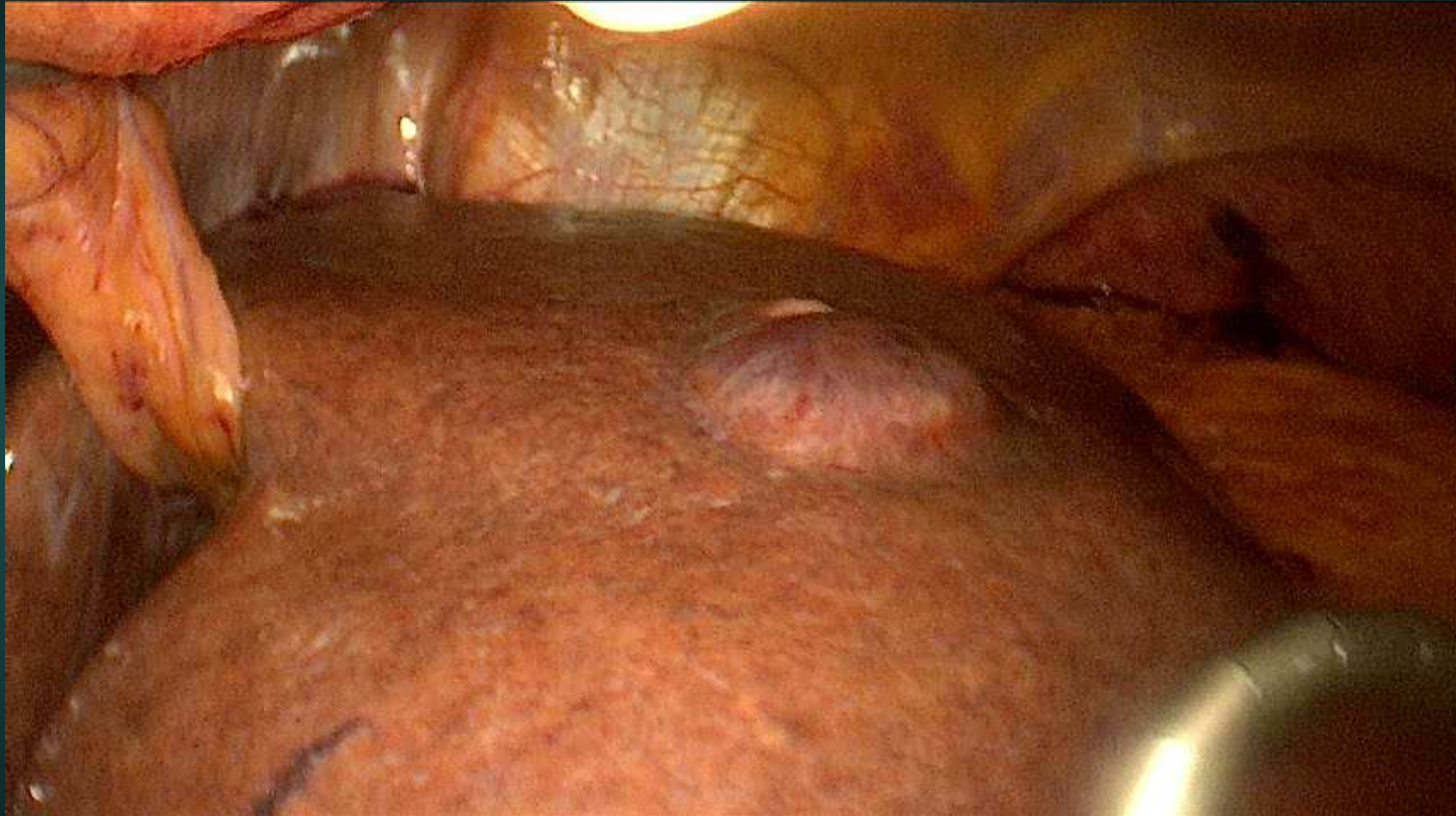
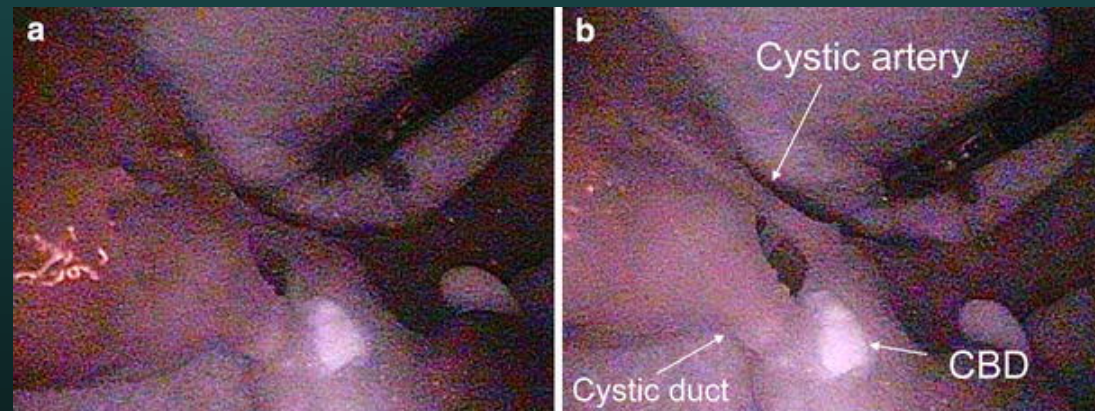
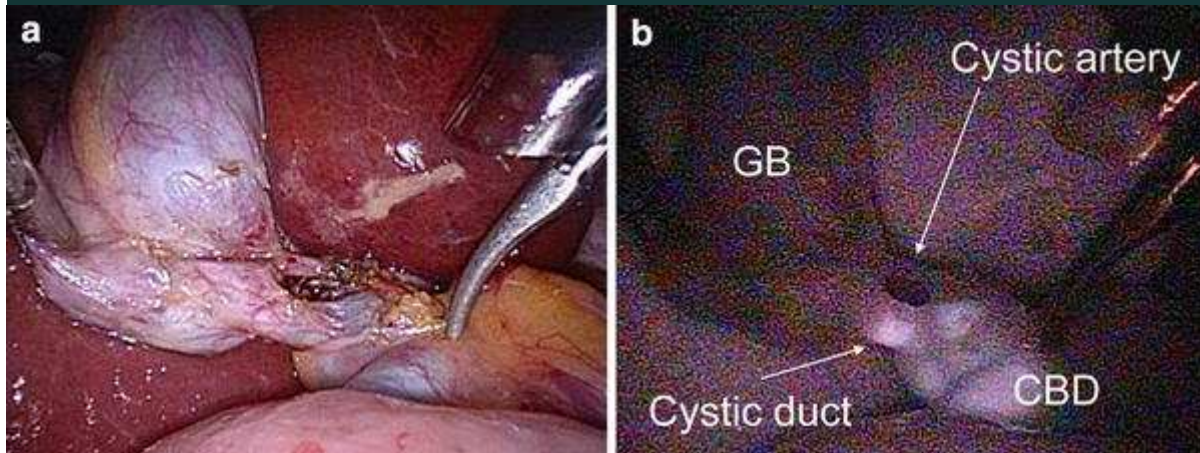


Image Guidance - Fluorescence

- Biliary Surgery

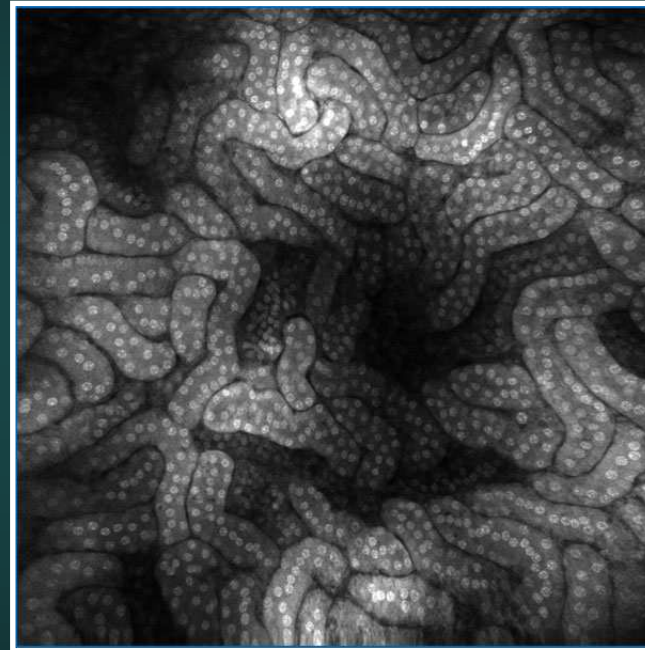
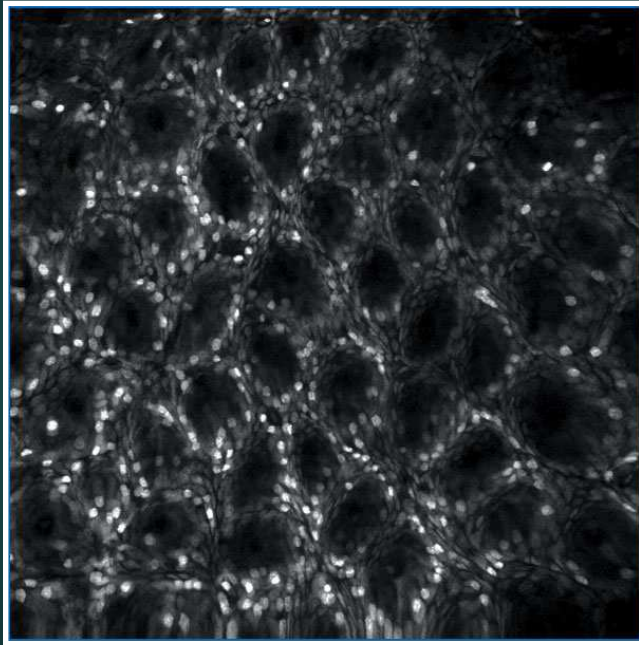


Tagaya et al. Surg Endosc 2009

Image Guided Surgery: sentinel node



In-Vivo Microscopy



Minimal Access Surgery: Challenges

- Physical separation of the visual and physical aspects of the operation
- Image: HD, 3D, orientation, stability,
- Loss of tactile sensation