

Warm Up Package BGES 8 April 2011.

Basic technical key points in
laparoscopy. Diagnostic staging
laparoscopy. Robotic Surgery.

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Laparoscopy

Science or a tool ?

Benefit ?

Outcome ?

Today's issues

- Is laparoscopy a good idea for this patient?
- The ideal position , approach .
- How to get in the abdomen.
- Which instruments will I use ?
- Help.

Am I going to do a laparoscopy in this case ?

- Are there contraindications ?
 - - Previous operations
 - - Obstruction ?
 - - Incisional hernia's
 - - Portal hypertension
 - - Shock
 - - The hostile abdomen.



Indications

- It all comes down to :
 - - personal experience
 - - common sense
- Never feel obliged to do so “ because it looks cool “.

Patient positioning

- Exposure is the key to good surgery.
- Gravity
- Table tilting
- Collision of instruments
- “Beach chair” position for upper GI.

Beach chair



The first cut is the deepest .

We need SPACE

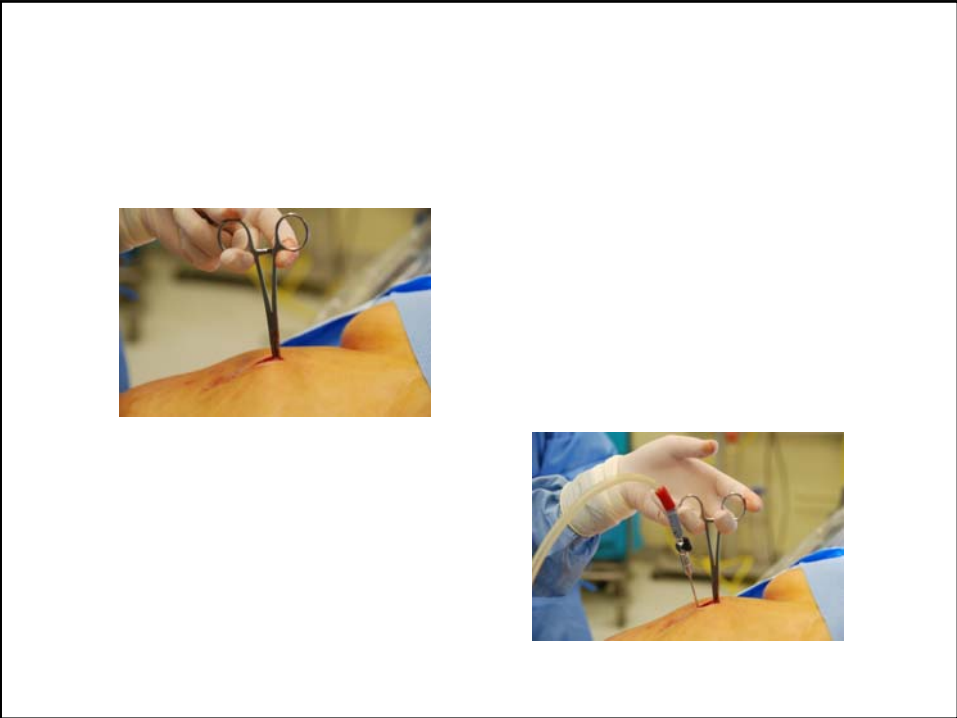
- Who 1) uses a Verres needle ?
2) an open approach ?
- Do you do a test ?
1) Yes of course
2) no just place it & do a percussion

What kind of testing ?

- Aspiration
- Droplet
- Check intraabdominal pressure
- other

Insertion of the verres needle

- Umbilicus or subcostal?
- Umbilicus ; grasp the fascia with a Kocher and lift it up.
- Hold the needle at lower 1/3
- Double "Click" cave slim patients
- Normal intra-abdominal pressure 5-8 mmHg. Cave obese : 9-11 mmHg.



“High pressure” alarm

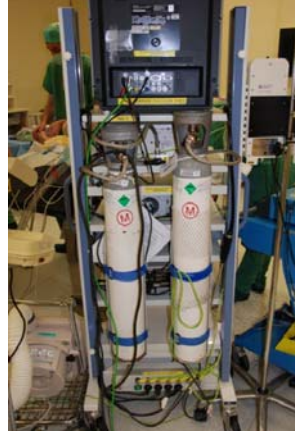
- Check trocar valve
- Check kinking of insufflation
- Check presence of anesthetist.
- Reposition verres needle.

Insufflation

- Create
- Maintain
- Control
- Renew pneumoperitoneum.



- Check the availability and reserve of your CO2.



Insufflation flow

- Verres needle : 2-3 lit/ min.
- Trocar valve : 6-7 lit/min.



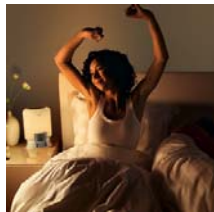
Operative pressure

- Early days : up to 30 mmHg.
- Present : 12-15 mmHg.

Parietal venous hemostasis (cave when desufflating).

Parietal rigidity.

Per operative hyper pressure



Patient



anesthesiologist

Cardiac in & outflow problems
Subcutaneous emphysema
CO2 embolism

Trocar placement



- Safety shield
- Length of incision
- Do not trust the nurse
- Cave slim patients.

Trocar placement

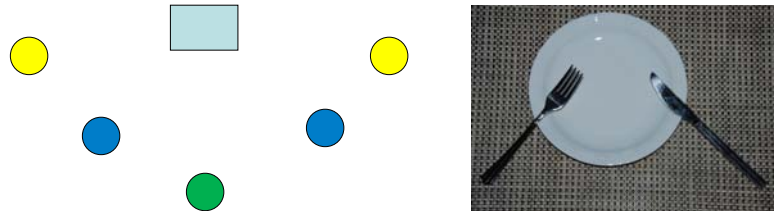


- Avoid gliding over the fascia



- Aim at the operating field.

TRIANGULATION



Optic



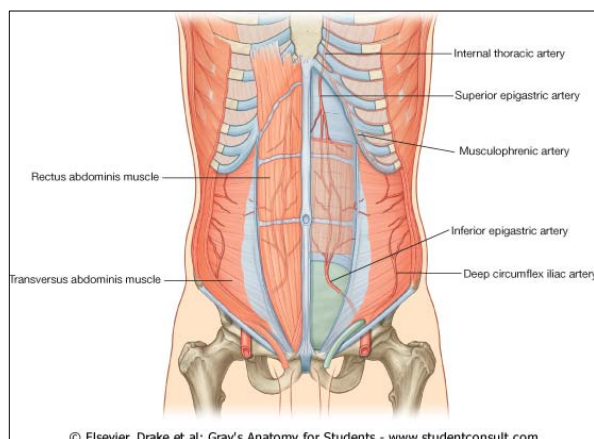
Operator



Retractors



No trocar zone



SCARS

- Open insertion.
- Hasson Trocar
- Verres left hypochonder.



Troublesome bleeding

- The necessary equipment within reach.
- DO NOT :
 - Drop the tissue & reach for suction.
 - Start coagulating/ clipping wildly & blindly.
 - Keep staring and sucking.

Troublesome bleeding

- DO
 - Keep exposure
 - Apply pressure (gauzes).
 - Place a clip above and below.
 - Rinse with saline.
 - Check your own pulse !

Diagnostic laparoscopy

- Malignancy : Pancreatic , upper GI
Hepatobiliary , ovarian
- Trauma

The role of staging laparoscopy for intraabdominal cancers : an evidence based review Chang Surg Endoscop (2009) 23:231-241.

- 62 y old male
- Routine CT.
- Small lesion in the pancreatic head.
- No vascular involvement.



Diagnostic laparoscopy?

- 1 Yes immediately before laparotomy.
- 2 Yes but well before the eventual operation.
- 3 No it's no use.
- 4 No , I don't know how.

Pancreatic cancer

- Diagnostic tools : Spiral CT, Pet , endo-US +fna , MRI.
 - diagnosis in 95-100%
 - unresectability is accurately predicted.
- Falsely predicted in 20 - 48 %
 - Small peritoneal implants.
 - Unexpected Ln deposits
 - Vascular invasion

Stefanidis et al Ann of Oncolog 2006 17: 189-199



Staging Laparoscopy

- Theoretically able to detect small peritoneal mets or liver mets.
- Is limited in detection of deep liver mets and vascular invasion.

Studies evaluating the role of Is in pts with pancreatic ca found to be resectable on non invasive staging

Author	N	Laps	unresec	Potent resec	resected	Correct predict.	Avoid Tomy
Bemelman	73	72	12	58	29	50%	18%
John	40	40	24	14	12	85%	45%
Reed	26	26	6	20	18	90%	23%
Gallery	50	50	22	28	26	92%	34%

Staging laparoscopy + LUS

- The addition of laparoscopic ultrasound gives a benefit of 12-15 % ; demonstrating unresectability.

Doran 2004 Dig Surg.
Vollmer 2002 Ann Surg

Preoperative variables ?

- Tumor size : > 3 cm on non-invasive staging significant more unsuspected mets.
- CA 19-9 levels > 150 U/ml significantly more unresectable disease.

Morganti Ann Surg Oncol 2005
Schliemann Arch Surg 2003

Impact of tumor location

- No use in periampullary cancers.
- Tumors of the body and tail are more likely to have unsuspected mets.

Vollmer Ann Surg 2002

Traverso Surg Endosc 2005

Other tumors

- Nieveen van Dijkum > 400 cases with upper GI or hepatobiliary cancers.
 - Overall : 20 % avoided laparotomy
 - Esophageal tumors 5%
 - Cardia tumors 20%
 - Biliary duct ca 40 %
 - Hepatic ca 35 %
 - Gastric ca 20 %

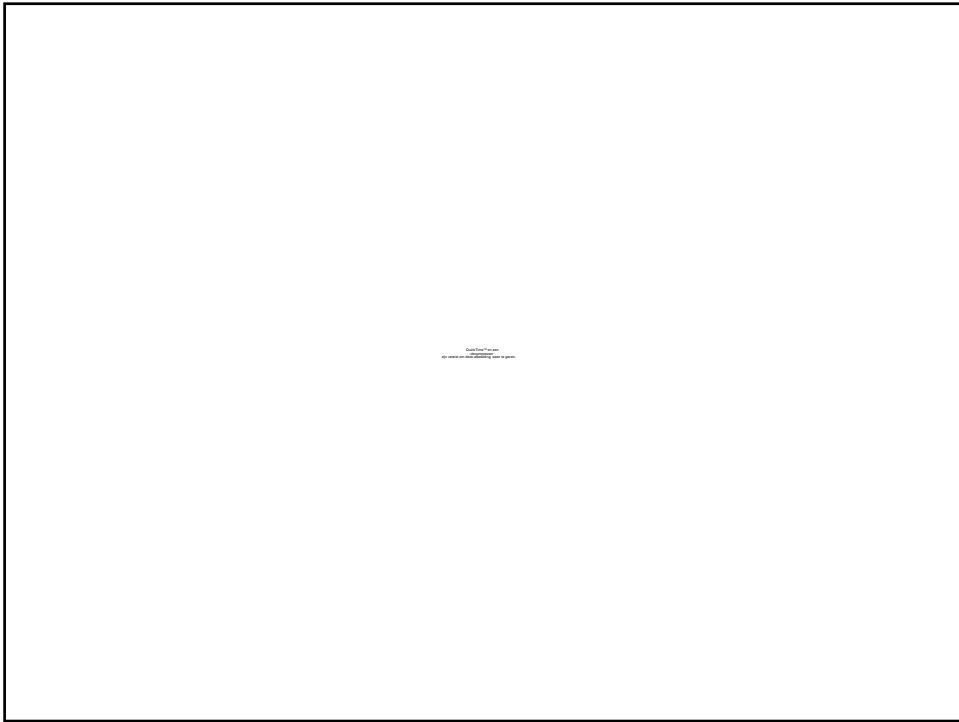
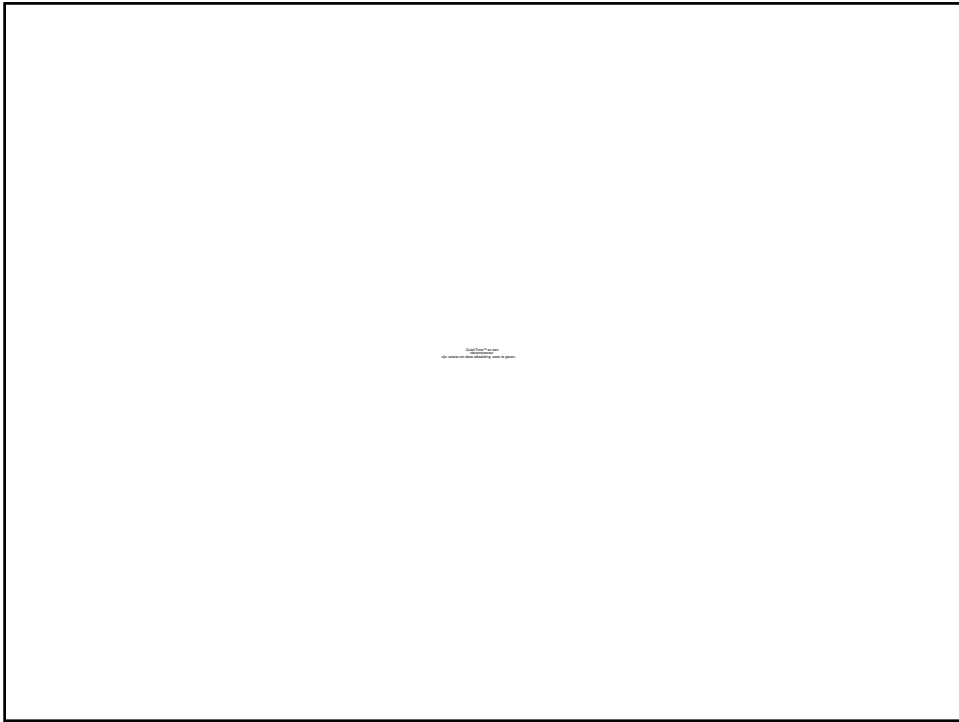
J. Am Coll Surg 1999 Vol 189 459-465

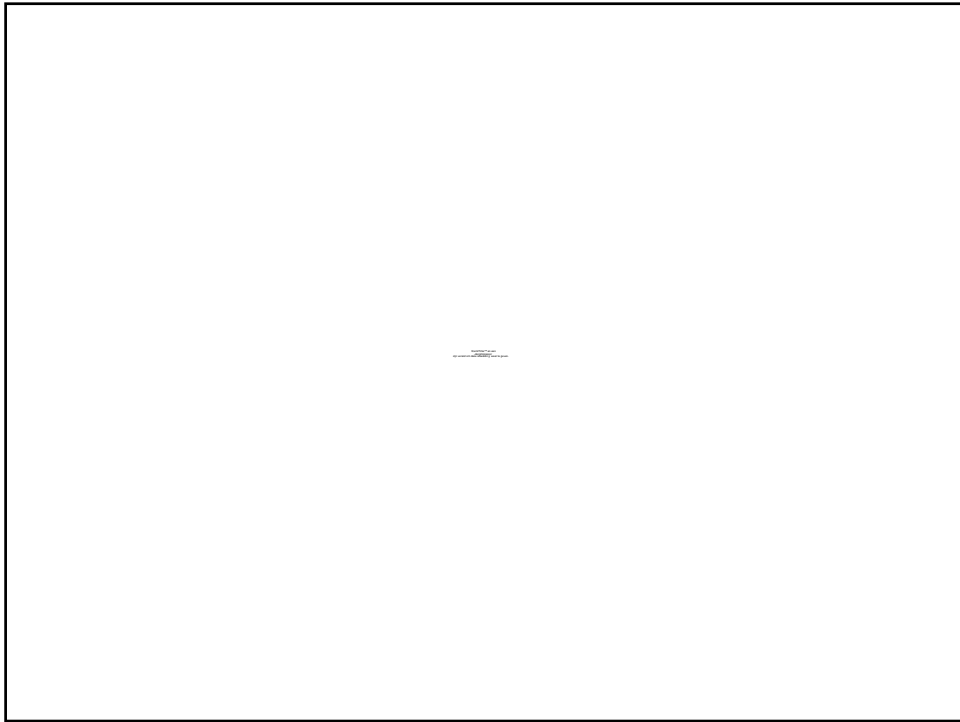
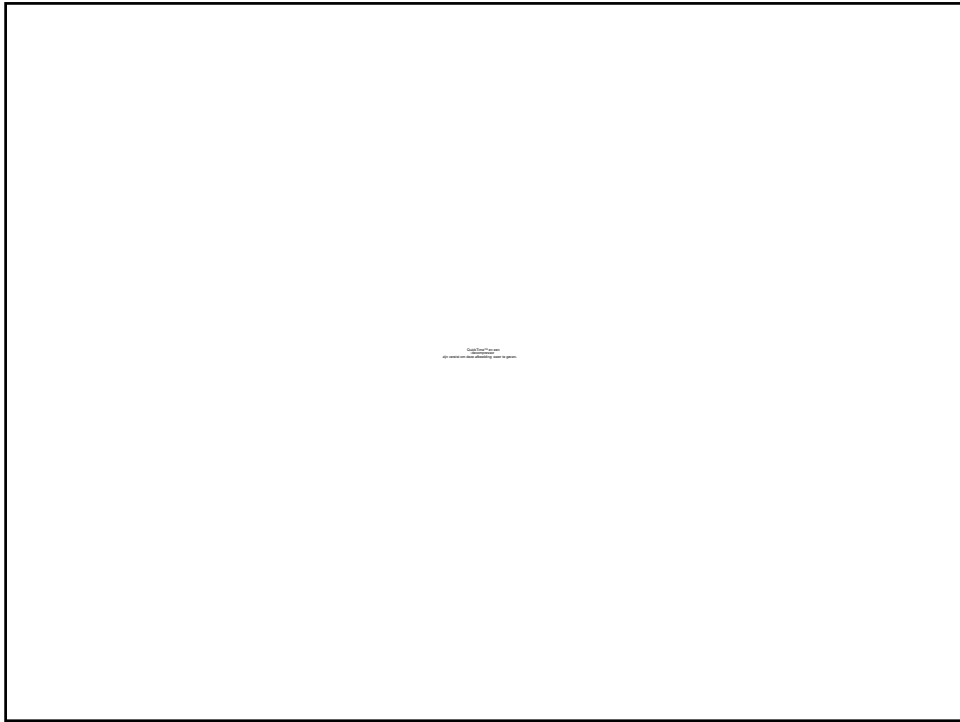
Conclusions

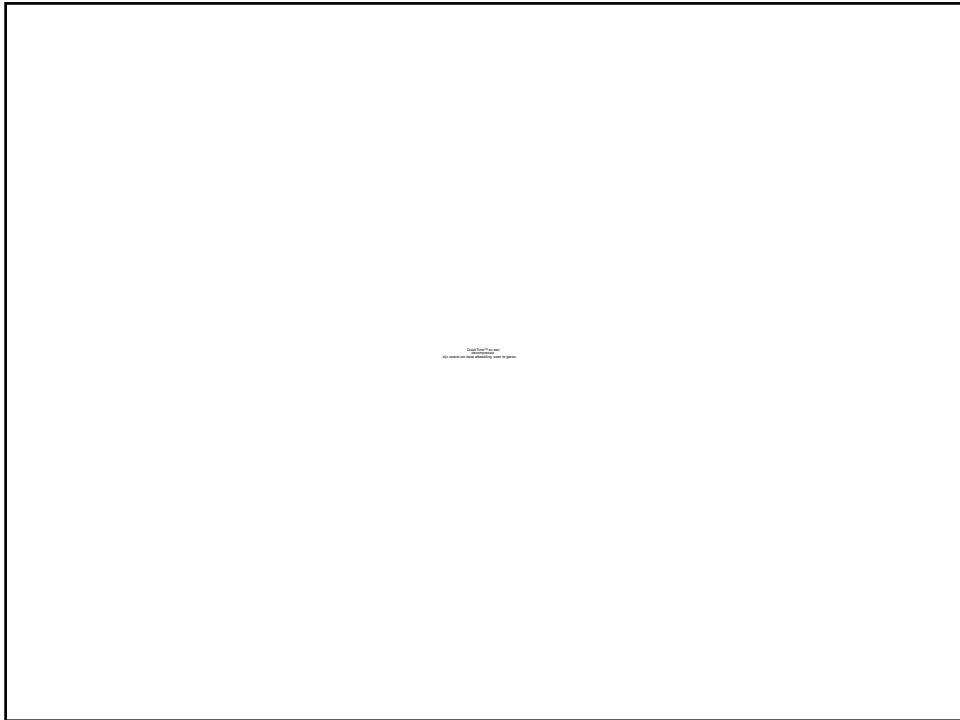
- Laparoscopy is a diagnostic tool .
- Prevents unnecessary laparotomies.
- Especially usefull in the detection of peritoneal and small liver mets.
- Addition of laparoscopic ultrasound enhances the possibilities of laparoscopy.

Robot surgery

- Everything has been done.
- Ergonomy of the operator.
- 3 D vision.
- Rotating of the instruments.







But

- Expensive.
- Second operator at the table.
- Consumes time.
- Trauma on the abdominal wall.
- Force on the tissues.
- No proven clinical advantage in abdominal surgery (prostate , thorax).