RISKS OF LAPAROSCOPY

WHY LAPAROSCOPY WAS THE UGLY DUCKLING OF GYNECOLOGY FOR 30 YEARS

POTENTIAL LAPAROSCOPIC COMPLICATIONS - INFORMED CONSENT (WHY I WORRIED ABOUT BRINGING LAPAROSCOPY TO HAITI)

Table I. Summary of complications of laparoscopic gynecologic surgery.

Complication	Rate (%)	Cause of Complication	Clinical Presentation	Management
Abdominal wall vascular injury	0.5	Entry related	Intraoperative blood dropping to operation field Postoperative hemorrhage and hematoma	Coagulation Tamponade Suturing
Intestinal injury	0-0.5	Entry related (laceration) Operative (thermal)	Usually diagnosed postoperatively with peritonitis-like findings.	Most cases required conversion to laparotomy. Thermal injury: bowel resection Trocar injury: Primary repair or resection related with localization, extension and bowel preparation. Veress injury: can be managed expectantly
Ureteral injury	0.025-2	Electrocautery (leading cause) Other (i.e. trocar, laser, dissection, staples, suturing)	Intraoperative diagnosis is very rare. Presentation may be delayed by the several weeks especially in thermal injury. Symptoms are variable.	Intraoperative diagnosed patients: Intraoperative laparoscopic repair, double J-shaped catheter for focal injury Postoperative diagnosed patients: Laparotomic end-to-end anastomosis, ureteral implantation, ureteral reconstruction or ureteroneocystostomy
Bladder injury	0.02-8.3	Entry related Thermal During dissection	Most of cases diagnosed intraoperatively. Abdominal discomfort and oliguria are major findings postoperatively.	Based on localization, extension and type of injury; Conservative management Surgical repair
Major vascular injury	0.04-0.5	Entry related Energy source Operative	Bleeding from trocar or Veress Observation via laparoscope Retroperitoneal hematoma	Laparotomic vessel repair without removing Veress or trocar Laparoscopic repair also reported.
Hernia at trocar site	0.17-0.2	Entry related	Bowel obstruction findings Incarceration	Laparoscopic or laparotomic hernia repair Bowel resection in incarcerated cases
Subcutaneous emphysema	2.3	Co_2 presence in subcutaneous tissue.	Subcutaneous emphysema	Resolve spontaneously
Hypercarbia	5.5	Longer operative times High end-tidal CO_2 Older patient age	Acidosis	Ventilation
Cardiac arrhythmia	27	-	Sinus tachycardia, bradycardia, ventricular, tachycardia, and asystole	Stopping gas in-flow Anticholinergic agent for bradycardia Reinsufflation after the arrhythmia settles down
Pneumothorax/ pneumomediastinum	0.2-1.9	Pneumoperitoneum Diaphragmatic defect	Respiratory related symptoms	Discharging CO_2 from peritoneal cavity Inhalation with 100% O_2 Thorax tube
Port-site metastasis	1.1-2.3	Pneumoperitoneum and CO_2 related	Postoperative port-site tumor	Resection, chemotherapy, radiotherapy

CONTRAINDICATIONS TO LAPAROSCOPY

- Trauma with known or suspected Epidural or Subdural Hematoma
- Abdominal Injury associated with Spine or Thoracic Injury
- Hemodynamic Instability
- Difficult Intubation- ? Body Habitus or Mandibular Structure/OSA
- ?Pregnancy- unknown pregnancy particularly - style points
- Uncontrolled Coagulopathy
- Multiple Previous Abdominal Surgeries??
- Massive Intestinal Distension/Severe Ileus

VERESS NEEDLE INJURY – CLOSED TECHNIQUE

Incidence is 1/10000

Developed in 1930 by Veress

Most commonly used in gynaecology

Sharp outer sheath

- blunt stylet
  - retracts when passing through
- springs forward when tissue resistance drops

STEPS FOR INSERTION

check the spring mechanism, open tap for air entry

patient flat level on the table

adequate skin incision

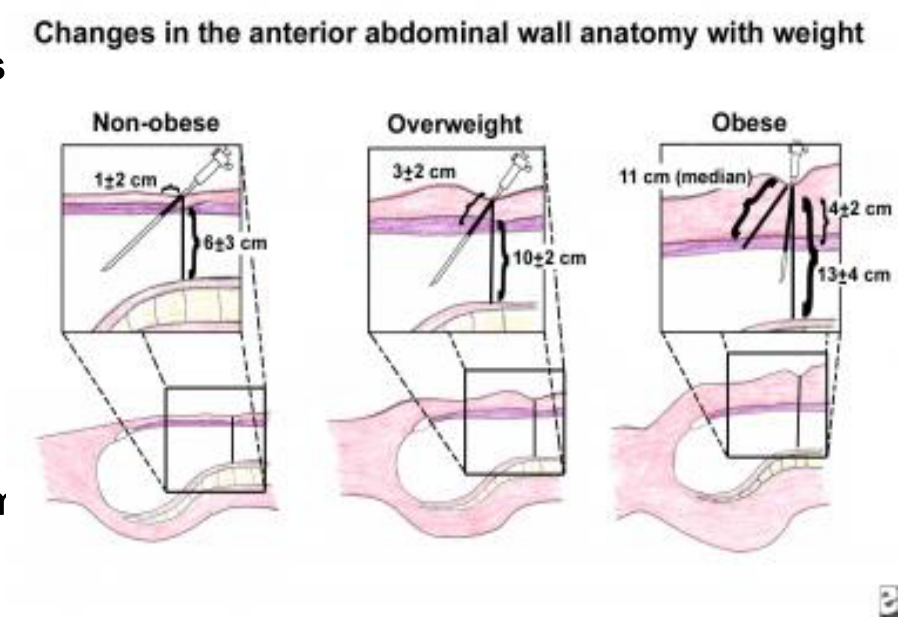
- lift the abdominal wall away from vessels

insert in the lower part of the umbilicus

angle depends on BMI

2 audible clicks - rectus sheath, peritoneum

safety tests



SAFETY TEST OPTIONS

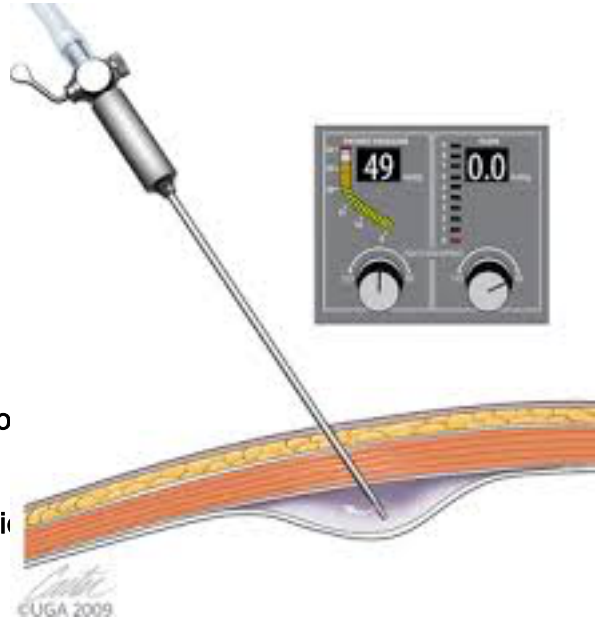
Aspiration test (1)

- syringewithsaline(Palmer'stest)orair • aspiration
- contains bowel contents or urine – remove!
- *if blood is aspirated.....* • needle is left in place
  - exploratory laparotomy • ? vascular injury

Aspiration test (2)

- no material aspirated
  - 5 mL of saline
  - reattempt to aspirate
  - no fluid is what we want (the fluid dropped into
- if the saline is removed

Likely the needle is in pre-peritoneal space – Repositi



Hanging Drop Test

hanging drop test drop of water

abdominal wall is elevated
water should disappear down the shaft

OPEN LAPAROSCOPY- MY FIRST CHOICE

- Decrease the risk of Entrance Structure Injury with Trocar or Veress Needle
- Stay Sutures on the Fascia at the time of Insertion will Facilitate Easy Fascial Closure at the Completion of the Surgery and Decrease Hernia formation.

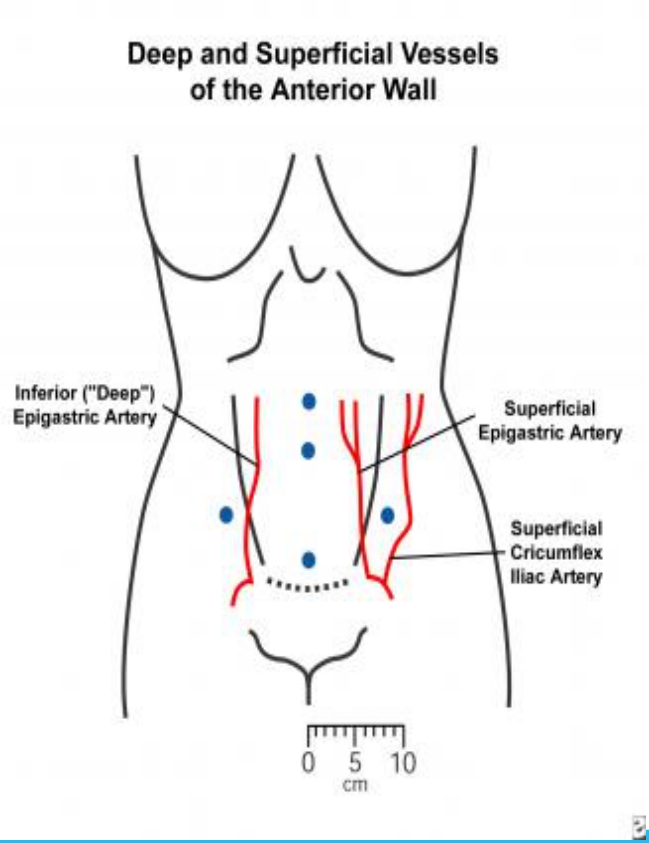
- SemiLunar Skin Incision and Vertical Fascia Incision

  https://youtu.be/JdcBCVfNtXI

- Vertical Skin Incision

  https://youtu.be/RZWmfYxVYHM

AVOIDING THE "RED LINES" VASCULAR INJURY



IMPORTANT PREOP HISTORICAL EVALUATION FOR PREVENTION OF COMPLICATIONS

Age Gravid/Para (fertility desires)

Menstrual morbidity- does she need an Ultrasound/ D&C/Hysterectomy at the same time

Pertinent medical history

- Rx allergies
- Current medications- stop aspirin, NSAIDs
- Hiatal hernia/GERD (coffee/cola/citrus in Haiti also chocolate, alcohol)
- Heart issues that preclude general anesthesia
- Back/Knee/Hip problems
- Steroid dependent diseases
- Other infection predisposition (HIV, skin infection etc)
- Hx of PID/gyn infection
- s/s sleep apnea ? Intubation risk
- PID/chlamydia/GC
- Hx of TB/asthma
- Gingival bleeding / hx of menorrhagia/postpartum hemorrhage

Any previous imaging or abdominal procedures- ?appy, CS, ovary cysts (? Get the xray films/op notes/path reports)

Family History – Anesthesia Complications/Endometriosis/ Bleeding Disorders or Bleeding Complications with Deliveries or Surgery/ Cancer

PERTINENT PHYSICAL EXAMINATION FINDINGS

- ? Look at the airway? Difficult intubation?
- Breast exam to rule out breast malignancy – especially for women with adnexal masses
- Check for heart murmurs or gallops
- Chest clear -? TB, uncontrolled asthma, pneumonia
- Abdominal scars, distension, organomegaly
- Range of Motion of Hips, back and knees- dorsolithotomy position
- Distal pedal evaluation for pulses and edema.
- Pap and pelvic exam for nodularity suggestive of malignancy, endometriosis; tenderness
- Pelvic ultrasound: rule out malignancy, missed pregnancy, adnexal and uterine findings (is she booked for the correct surgery and consented appropriately)

PREVENTION OF INJURY ALWAYS SAVES TIME

WAS ABSTINENCE THE SAFEST THING FOR HAITI

- https://youtu.be/N9TRMRxYEFk

- OPEN INSERTION WITH FASCIAL SUTURES-
  - takes a little longer on the way in, but less injury, fewer surgical interventions for bowel/vascular repair, faster fascial closure at the end
  - Fewer postoperative hernia formations
- BIPOLAR CAUTERY-
  - monopolar cautery will cause lateral burn of the adjacent tissue with an increase in bowel or bladder defects/fistulae, scarring of the ureter
  - Take care to lift the area of cautery away from the adjacent organs or don't cauterize.
  - IF monopolar cautery is necessary make sure the benefits outweigh the risks and try to use equipment with teflon manufactured into the active portion of the device.