

Laparoscopic Complications and Management

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Objectives

- Review the areas and incidence of complications of Laparoscopy.
- Discuss preventative measures for the major complications.
- Discuss how to recognize and repair injuries.

Conflicts of Interest

- Preceptor for Ethicon Womens Health and Urology
- I will not be discussing any products from Johnson and Johnson

Injury – Where/When

- Abdominal Entry
 - Vascular Injury
 - Bowel Injury
- Assistant Post Placement
 - Vascular Injury
 - Urinary Tract Injury
- Procedure
 - Vascular Injury
 - Bowel Injury
 - Urinary Tract Injury

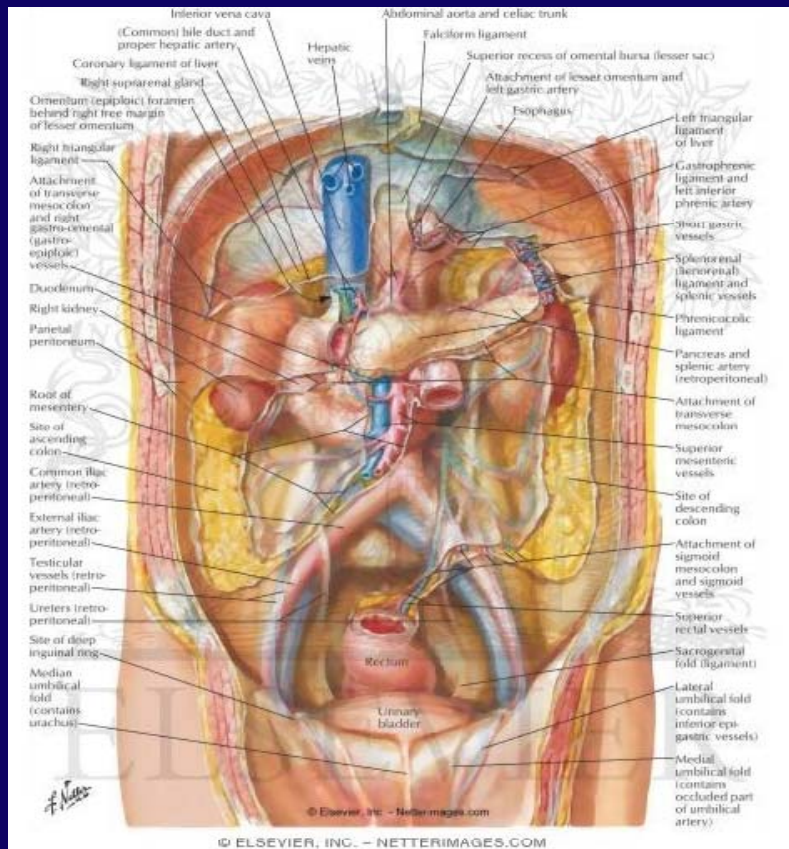
Abdominal Entry

- Accounts for 40% of laparoscopic complications
- Injury to bowel and great vessels
- Incidence is 1.25 – 8/1000 cases
- Underreported
- Open technique/ Visi-ports/Disposable trocars have not consistently shown benefit.

Abdominal Entry

- Veres needle injury accounts for 8% of all complications
- Proper technique
- Patient in flat position
- Angle of insertion – 45 degrees
- Midline
- Obesity and thin patient issues

Anatomy



- In most patients bifurcation is superior to umbilicus
- Insertion is an arc Vertical at skin 45 degrees at fascia/peritoneal level

Prior Surgery?

- Palmers Point
- Midclavicular line 2cm below rib in left upper quadrant
- Anesthesia is your friend
- NG or OG tube
- No nitrous

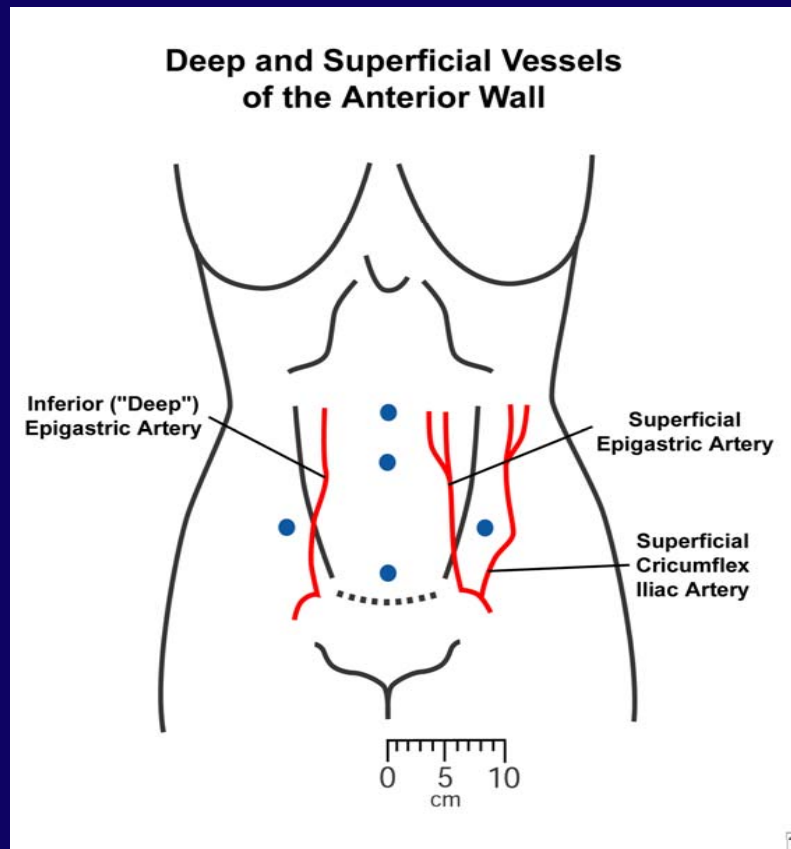
Visceral Injury

- Small Bowel
- Can include mesentery
- Through and through
- Diagnosis
 - Look back at initial trocar
 - Repair – Laparoscopically versus Laparotomy
- Visceral injuries should almost never occur from secondary trocar placement.

Vascular Injury

- Most catastrophic
- 0.04% - 0.5%
- Underreporting
- Venous more than arterial
- Rapid recognition
 - Laparotomy – Midline!
 - Trauma/Vascular Surgeon
 - Anesthesia

Secondary/ Assistant Trocar



- Inferior Epigastric laceration
 - Most common trocar vascular injury
 - Leave trocar in place
 - Tie cephalad and caudad
- Urinary bladder laceration
 - Foley bag

Thermal Damage

- Monopolar versus Bipolar
- Four Causes
 - Inadvertent tissue contact
 - Insulation breaks
 - Probe coupling
 - Capacitative Coupling
- Delayed presentation

Urinary Tract

- Incidence 1% - 2.2%
- Underreported
- Ranges increases with complexity
- LAVH/TLH – 0.02% - 8.3%
- Recognized in 50% of cases

Bladder

- Bladder Dome – most injured
- Trocar placement
- Dissection – Stuck Uterus
- Foley bag distended
- Retrograde filling
- Simple 2 layer closure with drainage
- Unrecognized – hematuria/suprapubic pain/ascities

Ureteral Injuries



- Anatomy
- Medial wall
- Visualized either transperitoneally or via dissection
- Endometriosis
- TLH/LAVH
- Stricture/Transsection
- Lateral release

Ureteral Injury

- Complication of a complication
- Symptoms similar to laparotomy/vaginal
- Ascities
- B.U.N./Creat increase
- Flank pain
- Radiographic studies
- Urologic Repair

PostOperative

- Smaller Incisions, Less Pain
- Wound Complication
 - Infection to Dehiscence
 - Can be seen in office next day
- Pain
 - Ant wall hematoma
 - Bowel Injury
 - Urinary tract injury

PostOperative

- Hematoma
 - Pain
 - Discoloration
 - Swelling
 - Bleeding from the wound
- Rarely hypovolemia
- Rarely re-operation
- Expectant management

PostOperative

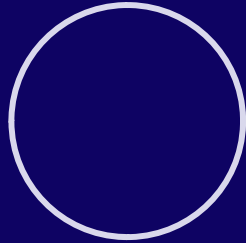
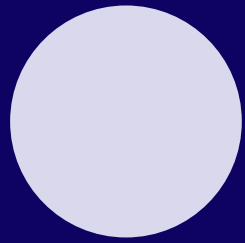
- Breakthrough pain – ER Eval
- Undiagnosed bowel – Most serious
 - Entrapment
 - Traumatic Injury
 - Thermal Injury
- Traumatic – 12 to 36 hrs
- Thermal Injury – 4 to 10 days
- Herniation – Immediate to Delayed

PostOperative

- Bladder/Ureter
 - Suprapubic pain
 - Hematuria
 - BUN/Creat abn
 - Back pain
 - Ascities
- Protect the Kidney

The Controversy

- Should we cysto everybody?
- Pro
 - Recognize and repair
 - Trained in cystoscopy
- Con
 - Not all injuries identified
 - Risk is low, not effective tool
- Dardarian/ Randall Study



Video

