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 mesentary
- 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
<table>
<thead>
<tr>
<th>Bladder</th>
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<tbody>
<tr>
<td>Bladder Dome – most injured</td>
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<tr>
<td>Trocar placement</td>
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<tr>
<td>Dissection – Stuck Uterus</td>
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<tr>
<td>Foley bag distended</td>
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<td>Retrograde filling</td>
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<td>Simple 2 layer closure with drainage</td>
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<td>Unrecognized – hematuria/suprapubic pain/ascities</td>
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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
  - Tramatic 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