COMPLICATIONS OF PELVIC PROLAPSE SURGERY
COMPLICATIONS

• Ureteral Injury and Obstruction
• Hemorrhage
• Bowel Injury
• Neurologic and Pain Complications
URETERAL INJURY AND OBSTRUCTION

• Incidence: 11%

• Obstruction can be minimized by performing cystoscopy at the end of the procedure.
## Ureteral Injury

<table>
<thead>
<tr>
<th></th>
<th>Number of procedures Performed</th>
<th>Ureteral obstruction</th>
<th>Ureteral injury</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>% (95% CI)</td>
<td>N</td>
</tr>
<tr>
<td><strong>Uterosacral vaginal vault ligament suspension</strong></td>
<td><strong>355</strong></td>
<td><strong>21</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>Proximal McCall culdeplasty</td>
<td><strong>204</strong></td>
<td><strong>9</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>Colpocleisis</td>
<td><strong>48</strong></td>
<td><strong>2</strong></td>
<td>0</td>
</tr>
<tr>
<td>Distal McCall culdeplasty</td>
<td><strong>185</strong></td>
<td><strong>1</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>Anterior colporrhaphy</strong></td>
<td><strong>574</strong></td>
<td><strong>2</strong></td>
<td>0</td>
</tr>
<tr>
<td>Indeterminate</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>700</strong></td>
<td><strong>36</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

URETERAL OBSTRUCTION: POST OPERATIVE

- Delayed Obstruction can be observed due to excessive scarring between the uterosacral plication and distal ureter due to compromise in blood flow
- Signs and symptoms
  - Flank pain
  - Nausea/Vomiting
  - Potentially Fever
- Diagnosis
  - CT Urography
- Treatment:
  - In acute postoperative period (7 days), cutting the offending colpopexy sutures may relieve the obstruction.
  - Placement of ureteral stents
  - For delayed presentation or failure to unobstruct, open abdominal or laparoscopic ureterolysis and reimplant may be necessary.
B) WIRE WAS SUCCESSFULLY PASSED

C) OVER WHICH A STENT WAS PLACED
HEMORRHAGE

- Sacrospinous Ligament Colpopexy or Hysteropexy

- More common with this approach
- Due to the ligament delicate anatomic location
- The superior gluteal vessel, inferior gluteal vessel and internal pudendal vessels are in close proximity
- Dissection and suture placement should be avoided in the cephalad border of the sacrospinous ligament in order to minimize risk to the gluteal vessels and sciatic nerve
- Placing suspension sutures in the middle or medial third of the ligament, pudendal neurovascular bundle and sciatic nerve damage can be avoided.
BLEEDING MANAGEMENT

• Small, slow venous bleeds where source cannot be visualized can be managed by completing the operation, closing and sufficiently packing the vagina so the pressure can be managed overnight.

• If bleeding is considerable or if there is hemodynamic compromise, definite management is angiography either via an interventional radiologist or, if an interventionalist is not available, a vascular surgeon.
HEMORRHAGE

- Iliococcygeus Vaginal Vault Suspension
  
  - Usually less hemorrhage with this approach
  - One comparative study of illeococcygeal vs sacrospinous fixation found similar rate of
    - Hemorrhage
    - Transfusion
  - Another study found
    - Mean EBL: 358 mL
    - 3/110 patients hemorrhage >750mL
HEMORRHAGE

• Uterosacral Vaginal Vault Suspension
  • 1.3% requiring blood transfusion
  • Most common source may be the vascular pedicles if a concomitant vaginal hysteroscopy is performed.
  • Distal uterosacral ligament lies close to the uterine vessels, and therefore targeting suspension sutures towards the middle or proximal uterosacral ligament can minimize bleeding
BOWEL INJURY

• Sacrospinous Ligament Fixation and Iliococcygeal suspension
  
  • Less risk of small bowel and colonic injury, since these are extraperitoneal operations
  • 0.4-4% of SSLF cause rectal laceration/perforation
  • Most common injury is to distal anterior rectum on initial incision
  • Small < 2cm
  • Managed with primary closure in 2-3 layers, copious irrigation and post operative bowel rest for 2-3 days
BOWEL INJURY

• Uterosacral Vaginal Vault Suspension

• Less than 1% of cases reported, despite it being intraperitoneal in nature.
• Small bowel obstruction is rare and presents as nausea and vomiting on postoperative days 1-4
• Manage the patients conservatively and if symptoms still persist, laparoscopy should be performed.
NEUROLOGICAL AND PAIN COMPLICATIONS

• Sacrospinous Ligament Fixation
  • Suture placement
    • middle third of the sacrospinous ligament avoids pudendal nerve
    • Caudad to the greater sciatic foramen avoids the sciatic nerve.

• Buttock and tailbone pain seen in about 6-14% of patients after SSLF, is due to the involvement of the peripheral nervous branches or to the tension on the ligament.
• Persistent pelvic and perineal pain should raise suspension of potential pudendal nerve entrapment.
NEUROLOGICAL AND PAIN COMPLICATIONS

- Uterosacral Vaginal Vault Suspension
  - Assessing the position of the ischial spine allows the avoidance of the pudendal nerve.
  - Sacral nerve routes are most susceptible during USVVS
  - The sacral nerve roots as well as the intrapelvic portion of the sciatic nerve are vulnerable to entrapment during the uterosacral suspension leading to post operative pain
SACROCOLPOPEXY
COMPLICATIONS

- Systematic review and meta-analysis of 13 studies by Hudson et al, 2014.

- Mesh erosion/exposure 4.1% (95% CI 1.4-6.9%)

- The most common surgical complication (excluding mesh erosion):
  - 1) Cystotomy 2.8%
  - 2) Wound infection 2.4%
Sacral colpopexy can be considered a proven use of mesh with acceptable risk vs benefit ratio for repair of prolapse.
<table>
<thead>
<tr>
<th></th>
<th>Open Sacral Colpopexy*</th>
<th>Laparoscopic Sacral Colpopexy*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>46</td>
<td>53</td>
</tr>
<tr>
<td>Surgical time (in minutes)</td>
<td>106</td>
<td>97</td>
</tr>
<tr>
<td>Blood loss (ml)</td>
<td>362</td>
<td>100</td>
</tr>
<tr>
<td>Inpatient days</td>
<td>5.4</td>
<td>2</td>
</tr>
<tr>
<td>Days to return to performing ADLs</td>
<td>34</td>
<td>21</td>
</tr>
<tr>
<td>Transfusions</td>
<td>One</td>
<td>One</td>
</tr>
<tr>
<td>Intraoperative complications</td>
<td>One cystotomy</td>
<td>One cystotomy, one enterotomY</td>
</tr>
<tr>
<td>Complications reoperation</td>
<td>Two incisional hernia, one removed mesh, two POP surgeries</td>
<td>One trocar hernia, one mesh erosion, one TVT</td>
</tr>
<tr>
<td>Mesh erosions</td>
<td>One</td>
<td>One</td>
</tr>
<tr>
<td>Patient satisfaction</td>
<td>85</td>
<td>87</td>
</tr>
<tr>
<td>Overall success rate</td>
<td>76%</td>
<td>77%</td>
</tr>
<tr>
<td>Length of review</td>
<td>24 months</td>
<td>24 months</td>
</tr>
</tbody>
</table>

ADLs, Activities of daily living; LSC, laparoscopic sacral colpopexy, POP, pelvic organ prolapse; TVT, tension-free vaginal tape.

ANTERIOR VAGINAL WALL PROLAPSE
Elevate mesh, anterior placement
(pelvic view from above)
ANTERIOR REPAIR  COMPLICATIONS

- Bladder injury is very rare.
- Injury should be closed in 2 layers with absorbable sutures.
- If mesh involved, the practice is to abort and continue traditional repair
- Ureteral injuries
- Mesh complications
- Hemorrhage is a rare complication
- De Novo Stress Urinary Incontinence, higher with mesh kits
POSTERIOR REPAIR

Traditional Posterior Colporrhaphy
SITE SPECIFIC REPAIR
COMPLICATIONS OF PR

• Hemorrhage
• Dyspareunia
• Rectal injury
• Mesh complications
• Fistula formation
I have a friend with a really cool job. He's a doctor. But NOT a regular doctor...

He's a Vagina Reconstructive Surgeon. So ladies, if you're in a tragic vagina-accident...

Hey! It could happen! You fall off a bicycle and...

So yeah, my friend re-con structs vaginas. His motto is: "If you build it... they will come."