VAGINAL CUFF CLOSURE: HOW TO MINIMIZE DEHISCENCE AND PROLAPSE

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LIGO Grad 2006
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OBJECTIVES

• Demonstrate the surgical steps and principles during colpotomy and suturing of the cuff in order to prevent dehiscence
• Diagnose vaginal cuff dehiscence
• Review management of cuff dehiscence
• Review steps to aid in support of vaginal vault and incorporate this as part of cuff closure
VAGINAL DEHISCENCE

• Defined as full thickness separation of the anterior from the posterior cuff
• Incidence 0% - 7.5%
• Symptoms include copious serous or sanguineous discharge, pain, diarrhea, pain after intercourse or protrusion of bowel through the vagina
• Risk factors: type of hyst, age, number of vaginal surgeries, atrophy, malignancy, chronic steroid uses, malnutrition, radiation therapy, chronic Valsalva conditions, postoperative cuff infection or cuff hematoma. (Ramirez et al. Obstet Gynecol Surv 2002.)

DEHISCENCE HAS INCREASED WITH MINIMALLY INVASIVE SURGERY

• Abdominal rate 0.21%
• Vaginal rate 0.13%
• Laparoscopic rate 0.64%
  • Trans vaginal suture rate 0.24%
• Robotic rate 1.64%

Ucella et al O & G 2012
**MANAGING DEHISCENCE**

- Can be closely watched and allowed to heal through secondary intention if no bowel in vagina.
- Can be closed in ER/office with figure of N suture if larger than 2 cm and no bowel is in vagina.
- Suspecting a dehiscence is key.

### Table 3. Inciting Events*

<table>
<thead>
<tr>
<th>Event</th>
<th>Clinical number/number with data reported (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coitus</td>
<td>1/12 (8)</td>
</tr>
<tr>
<td>Spontaneous</td>
<td>8/12 (67)</td>
</tr>
<tr>
<td>Defecation, voicing</td>
<td>1/12 (8)</td>
</tr>
<tr>
<td>Valsalva (cough, sneeze, lift)</td>
<td>1/12 (8)</td>
</tr>
<tr>
<td>Trauma</td>
<td>1/12 (8)</td>
</tr>
</tbody>
</table>

*Some patients in the historical group had more than 1 inciting event.*

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Croak et al, Obstet Gynecol, 2004
Treatment of Vaginal Cuff Evisceration

- Recent report of 4 cases managed through trans vaginal approach without complications
- Option for uninjured bowel without peritonitis
- Antibiotics, irrigation and debrided
- Full thickness closure with monofilament suture

Matthews O&G, 2014

BOWEL EVISCERATION

- Handle emergently as the bowel can become ischemic
- Moist pack bowel and irrigate copiously
- Antibiotic coverage ASAP
- No harm in calling general surgeon- ESPECIALLY if bowel is dusky
- When bowel reduced, check viability
- Freshen cuff edges prior to suturing
- May use foley bulb to displace bowel when suturing from below
- Use interrupted sutures
- Delayed absorbable monofilament – like V-loc
REMEMBER THIS

• Evisceration does not equal laparotomy or bowel resection
• Early diagnosis is key... so be suspicious
• Recurrence is possible
• Coitus may be inciting event... so your 6 week check needs to confirm intact cuff ready for penetration

TIPS TO AVOID DEHISCENCE: SUTURING IS KEY

• Suture cuff with same standards as open
  • Stitch every 5-8mm, 5mm deep
• Two layer closure may be better than single
• Consider closing the bladder peritoneum over the apex
• Use of monofilament suture seems to be favored
• Use of barbed suture is ok
• Use a sturdy driver –helps to prevent skewing of needle

O’Hanlan’s Suggestion N = 1924

- Use of suture that allows you to do the procedure
- 5mm x 5mm bites. Use of open standards
- Uterosacral ligament incorporation to aid in apical support
- Reperitonealization when possible

O’Hanlan et al. Minimally Invasive Surgery 2016

SUTURE CHOICE

Barbed vs. Standard suture

- 63 patients: no dehiscence, no difference in time to close, no difference in healing time, no difference in rate of dyspareunia

Einarsson et al JMG 2013

- Decreased incidence of vaginal cuff dehiscence after laparoscopic closure with bidirectional barbed suture
- N= 387, retrospective
- Compared barbed to “other methods” with non-barbed suture
- No dehiscence in barbed suture group and 4.2% in the other methods group
- Higher incidence of granulation tissue and cellulitis in the other method group

Siedhoff et al JMG 2011
Barbed suture
• One case report warns not to leave tail

Sturdy Driver

Endo Stitch – not needed... you can sew!
Colpotomy

TIPS TO MINIMIZE THERMAL DAMAGE AND BLEEDING AT CUFF

- Minimize energy at time of colpotomy
- Cut Vs. Coagulation
- Keep your energy moving
- Don’t dig into tissue, gently touch surface
- Stay in the “groove” you are creating
- The vessels are superficial. Coagulation on surface then cut the deeper tissue
- Make sure you have lateralized the uterine artery before colpotomy
- The “bladder pillars” will bleed. Look at 10 and 2.
- Tolerate some bleeding, suturing will stop it
DATA SUGGESTS

• Less wattage on colpotomy (30w)
• Use a uterine manipulator that presents the cervicovaginal margin
• Double layer closure ?
• Full thickness purchase 5mm deep x 5mm- CRUCIAL
• Use of monofilament barbed/unbarbed suture likely leads to less cuff problems
• Running the cuff leads to less granulation tissue
• NIV for 6 weeks with a 6 week “clearance” exam

NEEDLE MANAGEMENT

-Barbed suture on larger needle. Use asepto syringe in vagina to introduce. If you use a 10mm port, can pass. If patient is thin, can pass through skin.

-For removal: If needle hub placed completely in the “molars” of the needle driver, the needle will bend and be able to be removed from a 5mm port.

-Watch this happen, and don’t lose the needle.
Sew the cuff LAPAROSCOPICALLY!

- Randomized study to compare vaginal closure with laparoscopic closure
- N=1395 (695 and 700)
- Vaginal dehiscence 2.7% vs 1%
- Cuff complication 9.8% vs 4.7%
- Conclusion: close laparoscopically!

Ucella et al. AJOG 2018

WHI: Baseline data on pelvic support

<table>
<thead>
<tr>
<th></th>
<th>No hysterectomy n=16,616</th>
<th>Hysterectomy n=10,727</th>
</tr>
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<tbody>
<tr>
<td>Baseline incontinence</td>
<td>63%</td>
<td>65%</td>
</tr>
<tr>
<td>Stress</td>
<td>26%</td>
<td>24%</td>
</tr>
<tr>
<td>Urge</td>
<td>22%</td>
<td>14%</td>
</tr>
<tr>
<td>Mixed</td>
<td>15%</td>
<td>17%</td>
</tr>
<tr>
<td>Cystocele</td>
<td>34%</td>
<td>33%</td>
</tr>
<tr>
<td>Rectocele</td>
<td>19%</td>
<td>18%</td>
</tr>
</tbody>
</table>

No difference!!!

Hendrix, et al, JAMA, 2005
PROLAPSE AFTER HYSTERECTOMY

- Reoperation for prolapse after hysterectomy: 17%
- Likely an underestimate.
- Prolapse following hysterectomy OR 5.5x if done for prolapse, especially vaginal hysterectomy.
- Abdominal approach more protective against reoperation than vaginal. (0.37; P = .02)
- (Patient selection vs. technique?)
  - Denman et al AJOG 2008

UTEROVAGINAL PROLAPSE

- Before hysterectomy, evaluate patient for need of support procedure
- Close vagina with intention of providing apical support by specifically suturing USL to pubo-vaginal fascia
- Not doing so represents a missed opportunity to decrease need for future prolapse operation
- There is a code for uterovaginal prolapse and there is a code for colpopexy. Document findings and document repair that reflect these codes
No support to cuff from apex

Good support to cuff from apex.
CONCLUSION - Respect the Cuff

1. SUTURE CUFF ACCORDING TO OPEN STANDARDS... big bites, don’t over cook
2. BARBED SUTURE IS OK... no knot tying
3. RECOGNIZE DEHISCENCE AND MANAGE ACCORDINGLY
4. LOOK FOR OPPORTUNITIES TO PREVENT PROLAPSE... and be supportive to the cuff