Didactic (Live Cadaveric Demo): Advanced Urogynecology: Overcoming Challenges in the Patient with Pelvic Organ Prolapse

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Target Audience
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This is a ½-day didactics course focusing on building an in-depth understanding of pelvic organ prolapse and its treatment.

This course is targeted to the advanced pelvic surgeon who treats patients with pelvic organ prolapse but is looking to understand the three dimensional anatomy that plays a role in pelvic support. This course will begin with a detailed anatomic discussion of pelvic support. Then experts will discuss their approach and techniques for treating prolapse. A step-by-step explanation of the sacral colpopexy, including each expert’s tips and tricks will be presented.

The unique design of this course includes an interactive cadaveric demonstration of robotic sacral colpopexy. Clinical pearls and experts technique will be demonstrated live.

Patient selection, tips for shortening the learning curve, technique nuances, and prevention / management of complications will be covered.

Learning Objectives: At the conclusion of this course, the clinician will be able to: 1) Discuss the anatomy of pelvic organ support including the ischio-anal fossa, deep pelvic spaces, space of Retzius, and presacral space; 2) discuss the current theories of pelvic support and how to apply these for individual patients; 3) identify the selection criteria for sacral colpopexy; 4) articulate the complications associated with pelvic organ prolapse procedures; and 5) identify steps to avoid and manage complications of prolapse surgery.

Course Outline

7:00 Welcome, Introductions and Course Overview  
K.J.E. Stepp

7:10 Anatomy of Pelvic Organ Support  
K.J.E. Stepp

7:35 Approach to Pelvic Organ Prolapse – Patient Selection  
P.J. Culligan

8:00 What about Retropubic Surgery? Paravaginal Repairs – When and How?  
B. Taylor

8:25 Complications of Laparoscopic Repairs – How to Manage Laparoscopically  
N. Siddiqui

8:50 Future Trends for Prolapse Surgery  
C.A. Matthews

9:15 Break

9:25 Pearls for Sacral Colpopexy  
M. Clark

- Techniques for Difficult Anterior Dissection

9:45 Pearls for Sacral Colpopexy  
N. Siddiqui

- Techniques for Posterior Dissection – How Far Do I Go?

10:05 Pearls for Sacral Colpopexy  
C.A. Matthews

- What about the Patient with a Uterus?

10:25 Pearls for Sacral Colpopexy  
M. Clark

- Techniques for Sacrum Exposure and Tensioning the Mesh

10:45 Panel Discussion / Tricks of the Trade:  
All Faculty

- Surgical Nuances
- New Technology
- Same Day Surgery?

11:00 Adjourn
PLANNER DISCLOSURE
The following members of AAGL have been involved in the educational planning of this workshop and have no conflict of interest to disclose (in alphabetical order by last name).
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Kimberly A. Kho*
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Patrick J. Culligan
Grants/Research: American Medical Systems, Intuitive Surgical
Consultant: Boston Scientific Corp. Inc., Bard Urological Division
Other: Stock Ownership: Origami Surgical
Catherine A. Matthews
Grants/Research: Boston Scientific Corp. Inc.
Nazema Siddiqui
Other: Honorarium: Intuitive Surgical
Grants/Research: Medtronic
Kevin J.E. Stepp  
Consultant: CONMED Corporation, Teleflex  
Other: Stock Ownership: Titan Medical  
Bernard Taylor  
Speakers Bureau: American Medical Systems, Boston Scientific Corp. Inc., Intuitive Surgical

Asterisk (*) denotes no financial relationships to disclose.
Objectives

- Discuss endopelvic fascia network and supportive structures.
- How do they interact to maintain pelvic organ support?
- Understand the levels of pelvic support and goals for reconstructive surgery.
Role of Levator Ani

- Main mechanism of support
- Maintains constant tone
- Rapid contraction with cough, etc.
- Relaxation with defecation/urination

Role of the endopelvic fascia and supportive ligaments
- Normal axis of vagina
  - Upper 2/3 – Nearly horizontal
  - Distal 1/3 – Nearly vertical
- Endopelvic fascia is responsible for maintaining position of pelvic organs over the levator plate so that they may be supported.

**Endopelvic Fascia**
- Collagen, elastin, adipose tissue, nerves, vessels, lymph channels, and smooth muscle
- Provide stabilization and support yet allow for the mobility

**The Dry Dock Analogy**

**Failure of Level 1 support**
Endopelvic Fascia

- Arcus Tendineous Levator Ani

- Arcus Tendineous Fascia Pelvis

- Arcus Tendineous Rectovaginalis
Endopelvic Fascia

- Arcus Tendineous Fascia Pelvis

Failure of Level 2 support

Failure of Level 3 support

Posterior Support Defects

- Rectocele, Perineocele
Female analogue of Denovilliers' Fascia

Rectovaginal Fascia

Restore Level III Support

Is all prolapse treated equally?

Sacral Colpopexy

Carolina Medical Center
Advanced Surgical Specialties for Women
Patient Selection
Patrick J. Culligan, M.D., FACOG, FACS
Urogynecology Division & Fellowship Director
Atlantic Health System, Morristown & Summit, New Jersey
Professor of Obstetrics, Gynecology & Reproductive Science
Mount Sinai School of Medicine
New York, NY

Disclosure
Grants/Research: American Medical Systems, Intuitive Surgical
Consultant: Boston Scientific Corp. Inc., Bard Urological
Division
Other: Stock Ownership: Origami Surgical

Sacrocolpopexy Key Elements
When uterus present:
Supracervical Hysterectomy
- Anterior dissection to level of trigone
- Posterior dissection to perineum
- Vaginal sutures – CV4 GoreTex
  6 to 10 per compartment
- Sacral Sutures - Two CV4 GoreTex
- Re-peritonealization (Zero Monocryl)

In my opinion, this is not a true Sacrocolpopexy
- If you’re just fixing the mesh to the apex,
you’re not taking advantage of the possibilities of the sacrocolpopexy procedure.
- Worse yet – your mesh may be too light for this technique

Some Perspective...

My progression to robotic surgery
My approach to reconstructive prolapse surgery before 2011

What is the age and activity level of the patient?

"Younger" "Very Active"

"Aging"

"Older" "Less Active"

Laser/Excision (w/- haemorrhoidectomy)

Vaginal Mesh Placement (probably no hysterectomy)

Current approach to reconstructive prolapse surgery

- Offer Native Tissue AND Sacrocolpopexy to all
- At this point (for me) operative times are the same
- Vaginal surgery is “less invasive” – but only technically speaking
- Offer Vaginal Mesh to “older, less active” patients as always
- Very few takers these days
- Offer isolated defect repairs as appropriate
- (simple cystocele or rectoceles repairs without mesh)

Patient Selection

Recent Case – 130 minutes

75 years old, vibrant, active, otherwise healthy

1st prolapse operation 1985 - TVH & A&P repair
2nd Prolapse operation - Vaginal mesh 2006 (me)
3rd Prolapse operation - Robotic Sacrocolpopexy

Isolated Cystocele

Perfect Sacrocolpopexy Patient
Perfect Patient for Native Tissue Repair (or Colpocleisis)

Perineal Decent (Think Sacrocolpopexy or Vaginal Mesh)

Could go either way (She chose sacrocolpopexy)
What About Retropubic Surgery: Paravaginal Repairs – When and How?

Bernard Taylor, MD
Assistant Clinical Professor
Associate Program Director
Female Pelvic Medicine and Reconstructive Surgery
Department of Obstetrics and Gynecology
Carolinas Medical Center

Cystocele
A Radical Cure by Suturing Lateral Sulci of Vagina to White Line of Pelvic Fascia


A New Look at Pelvic Relaxation

• Introduced concept that cystoceles result from isolated defects in connective tissue
• Identified 4 defects of the anterior compartment – Lateral (Paravaginal), Midline, Transverse, and Pubourethral ligament defect
• Surgical management consist of direct defect closure – Paravaginal Repair
• Initial experience – 63 patients with PVD/SUI treated with PVD repair – Results: Excellent 91.7%; Improved 5%; Failure 3%


Anterior Compartment Fascial Defects

Central Defect

Lateral Defect

Transverse

A.C. Richardson

Disclosures
Speakers Bureau: American Medical Systems, Boston Scientific Corp. Inc., Intuitive Surgical
Pelvic Organ Support
- Level I
  - Uterosacral – Cardiac Ligament Complex
- Level II
  - Pars Endopelvina Faciae Pelvis
- Level III
  - Perineal body

Paravaginal Defect
Detachment of Arcus Tendineus Fascia

Paravaginal Defect
Detachment of Arcus Tendineus Fascia

Abdominal Paravaginal Defect

Normal Anterior Compartment

Paravaginal Defect
Clinical Paravaginal Defect

video

Paravaginal Defect Repair
Treatment for SUI?

- Initial indications were for anatomic and functional repair of patients with anterior compartment prolapse and SUI
- Initial results for both correction of prolapse and incontinence were 80-90% at up to 2 years
- Objective results (postoperative Urodynamics) reveal only 61% success rate for treatment of SUI

Richardson AC. AJOG. 1976;126(5):568-573.

Anterior Vaginal Wall Prolapse
Paravaginal Defect

Paravaginal Defect Repair


Abdominal Approach …

- Total Abdominal Hysterectomy +/- BSO
- Sacral Colpopexy
- Paravaginal repair
- Burch Colposuspension
- Posterior repair/perineorrhaphy

Indications for MIV Gynecologic Surgery

- Adoption of Robotic/Laparoscopic sacral colpopexy parallels other MIV gynecologic procedures

Intuitive Surgical
Robotic Sacral Colpopexy

Abdominal Paravaginal Defect

Paravaginal Anatomy

Paravaginal Defect Repair
Step by Step …

- The apical suspension procedure is completed
- The abdominal wall peritoneum above the bladder is transversely incised between the medial umbilical ligaments and the rectopubic space is developed opened
- Dissection of the the retropubic space is carried to the pubic symphysis and then to the paravaginal space lateral to the bladder
- A vaginal probe is placed to assure proper lateral vaginal suture placement
- Beginning just distal to the ischial spine and progressing toward the pubic symphysis 3 to 4 sutures are placed reapproximating the detached vaginal fascia endopelvina to the obturator internus fascia
- The repair is performed bilaterally
- After completion of the PVDR perform cystoscopy

Robotic assisted Laparoscopic Paravaginal Defect Repair

Cystoscopy
Laparoscopic and Robotic Assisted Paravaginal Repair

- Laparoscopic PVDR associated with low complication rate
- Success rate at 2-5 years 76-80%
- Initially laparoscopic experience was limited to a small group of expert laparoscopic urogynecologists
- Recent popularity of robotic assisted laparoscopic prolapse surgery has renewed interest in PVDR

References

Sacrocolpopexy complications

Disclosures

Other: Honorarium: Intuitive Surgical
Grants/Research: Medtronic

MIS Sacrocolpopexy

Potential Complications

- Intraoperative risks
  ✓ Injury to bladder/ureters
  ✓ Injury to bowel/rectum
  ✓ Pre-sacral bleeding

- Postoperative risks
  ✓ Sacral discitis/osteomyelitis
  ✓ Mesh erosion

Intraoperative Risks

- Intraoperative risks
  ✓ Injury to bladder/ureters
  ✓ Injury to bowel/rectum
  ✓ Pre-sacral bleeding
Vascular anatomy of the presacral space in unembalmed female cadavers

Cecilia K. Wieslander, MD, David D. Rufer, MD, Donald D. McIntyre, PhD, Seydamon J. Harkins, MD, Clifford D. Mac, MD, Joseph J. Schaffner, MD, Murahara M. Corton, MD

Division of Urogynecology and Reconstructive Surgery, Department of Obstetrics and Gynecology, University of Texas Southwestern Medical Center, Dallas, TX

Received for publication January 17, 2006; revised July 1, 2006; accepted July 18, 2006

Vascular boundaries and contents of the presacral space:

- LCIV: left common iliac vein
- MSA: middle sacral artery
- MSV: middle sacral vein
- LSV: lateral sacral veins
- *: midsacral promontory

Wieslander et al.; AJOG 2006

27 mm between left common iliac vein and midsacral promontory

Wieslander et al.; AJOG 2006

Fresh frozen cadaver - blind suture placement

Flynn et al; AJOG 2005
Vascular Anatomy

Fresh frozen cadaver - blind suture placement
✓ Vascular injury in 5/10 cadavers (50%)
✓ 4 sutures through middle sacral artery
✓ 1 suture through left common iliac vein

Basics of surgery:
Open and dissect the presacral space

Avoiding injury:
Thorough dissection
Know where you are

Tips & Tricks
✓ Understand your midline
✓ Get under the fat pad early!!!
✓ Small amounts of monopolar cautery and blunt dissection to get to the ligament
✓ Use bipolar on small vessels
✓ Complete the presacral dissection before opening the remainder of the peritoneum (reduces need for assistant)

What if there is bleeding?
✓ PAUSE if you can and don’t lose your cool
✓ Use the heel of an instrument to tamponade
✓ Bipolar cautery (parallel to vessel)
✓ Can use FloSeal +/- Raytec

Postoperative Risks
Potential Complications

- Postoperative risks
  - Sacral discitis/osteomyelitis
  - Mesh erosion

Sacral discitis/osteomyelitis

Managing Mesh Erosion

✓ Try to avoid it!!!

Mesh Erosion

✓ Good surgical technique
  - Wise use of cautery on vagina
  - Avoid vaginotomy (...or cystotomy, or proctotomy...)

✓ Consider the type of synthetic material you use

✓ Consider patient factors

Type of Mesh

CARE trial (Brubaker et al. NEJM 2006):

- 322 abdominal sacrocolpopexies

✓ Surgeons could choose type of mesh

✓ Interim analysis higher rates of erosion with GoreTex mesh

✓ Investigators stopped using GoreTex mesh
Type of Mesh

Based on the pare size, meshes can be classified into 4 types

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type I</td>
<td>Monofilament, non-absorbable</td>
</tr>
<tr>
<td>Type II</td>
<td>Braided, non-absorbable</td>
</tr>
<tr>
<td>Type III</td>
<td>Monofilament, absorbable</td>
</tr>
<tr>
<td>Type IV</td>
<td>Braided, absorbable</td>
</tr>
</tbody>
</table>

Type I meshes are preferable over other types of meshes.

Mesh Erosion

- Good surgical technique
  - Wise use of cautery on vagina
  - Avoid vaginotomy (or cystotomy, or proctotomy...)
- Consider the type of synthetic material you use
- Consider patient factors

Risk factors for mesh erosion in CARE (ASC in 322 women):
- Smoking (OR 5.2)
- Concomitant hysterectomy (OR 4.9)
- Gore-Tex mesh (OR 4.2)

Overall 6% mesh erosion 2 years after ASC

E-CARE (7 years of follow up): mesh erosion 10.5%

Avoiding Mesh Erosion

- Good surgical technique
- Use Type I polypropylene mesh
- Consider patient factors (smoking, concomitant total hysterectomy) that you might be able to avoid
- COUNSEL patients on possibility of mesh erosion
Future trends for prolapse surgery

Catherine A. Matthews MD, FACOG, FACS
Associate Professor and Division Chief
Urogynecology and Reconstructive Pelvic Surgery
University of North Carolina
Chapel Hill, NC

DISCLOSURES
Grants/Research: Boston Scientific Corp. Inc.

Objectives
- At the conclusion of this activity, the participant will be able to understand the following:
  - Projected rates of pelvic floor disorders over the next 3 decades
  - Current rates of prolapse surgery in the US
  - Short and Long term outcomes of prolapse repairs
  - Risk factors for surgical failure
  - Future trends for prolapse surgery with regards to machines, materials, and methods

People are living longer...

And they are getting progressively heavier...
**PFDs in the Future**

# Older adults

- 2010: 40.2 million
- 2030: 72.1 million
- 2050: 88.5 million

U.S. Census Bureau, Population Projections, 2008

**Lifetime Risk of Surgery (SUI or POP)**

- 80 yrs: 20.2%
- 60 yrs: 11.4%
- 1 in 5 women will undergo surgery for stress incontinence or prolapse by the age of 80

Wu et al. Obstet Gynecol, 2009

Wu et al. AUGS, Oct 2013.

Age-specific Incidence Rates

Incident surgery rate per 1,000 p-yr

Cumulative Lifetime Risk

Cumulative incidence (%)

Age (years)

Either: 20.2%
(95%CI: 19.2, 21.2)

SUI: 14.5%
(95%CI: 13.4, 15.5)

POP: 13.7%
(95%CI: 12.6, 14.8)

We’re going to be doing a lot of surgery…

• How long can anything last?
• What is the “right” operation?

Apical Prolapse: Options

Vaginal (+/- Hysterectomy)
• Uterosacral Ligament Suspension
• Sacrospinous Fixation
• Manchester Repair
• Mesh procedure
• Colpocolisis

Sacrocolpopexy +/-
• TAH
• SCH
• No TAH

Effacy

Morbidity

Cost
Primary Outcome

- Surgical "Success" at 24 months defined as absence of all the following:
  - Prolapse of anterior or posterior vaginal wall beyond the hymen (POPQ point Aa, Ba, Ap, Bp > 0)
  - Descent of the vaginal apex more than 1/3 of vaginal length (POPQ point C>-2/3 TVL)
  - Bothersome vaginal bulge symptoms
  - Retreatment for POP with either pessary or surgery

Surgical Success at 24 Months

<table>
<thead>
<tr>
<th>ULS</th>
<th>SSL</th>
<th>(95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>90/154</td>
<td>90/152</td>
<td>58.4%</td>
</tr>
<tr>
<td>60.5%</td>
<td></td>
<td>0.9 (0.6-1.4)</td>
</tr>
</tbody>
</table>

18% were symptomatic
17.5% had prolapse beyond the hymen
5% retreatment

30% recurrence; 10% mesh exposure

Bulge symptoms

- 17% recurrence
- 3% reoperation rate
2012 Cochrane review: Surgical management of Pelvic Organ Prolapse

Schmid C, Feiner, B, Baessler K, Glazener C, Maher C
IUGA 2012

Results of 2012 Review
• 54 RCTs totaling 5775 women
• 10 major updates of prior work (Borstad 2010; Carey 2009; Costantini 2008; Culligan 2005; Dietz 2010; Guerette 2009; Natale 2010; Nieminen 2008; Pantazis 2011 abstract; Sokol2011)

ASC \( \uparrow \) success rate, \( \downarrow \) dyspareunia
\( \uparrow \) operating & recovery time & cost

Apical (upper) Compartment
3 RCT: Benson 1996; Lo 1998, Maher 2004

Vaginal Approach
Abdominal Approach

RCT: TVM vs LSCP
• Prospectively compare Total vaginal mesh (Prolift) and Lap sacral colpopexy for vaginal vault prolapse
• Short & Long-term symptomatic & Objective Follow-up
• All pelvic floor symptoms
• Validated condition specific & QoL question
• Cost Analysis

Maher et al. AJOG 2010

Conclusion Vault study
LSC
\( \uparrow \) operating time
\( \downarrow \) blood loss, admission days, quicker RADL
improved findings at all POPq sites
> TVL
> patient satisfaction
\( \downarrow \) reoperation rate
As compared to total prolift

Maher 2010 AJOG

Who is likely to fail surgical repair?
• Anatomic risk factors?
• Genetic risk factors?
• Epidemiologic risk factors?
Risk factors for prolapse recurrence after vaginal repair

James L. Whiteside, MD,⁎ Anne M. Weber, MD, MS,⁎ Leslie A. Meyn, MS,⁎
Mark D. Walters, MD

Department of Obstetrics and Gynecology, The Cleveland Clinic Foundation, Cleveland, Ohio, and Department of Obstetrics and Gynecology, Roger Williams Hospital, Providence, RI

Accepted for publication February 11, 2006; revised May 20, 2006; accepted June 29, 2006

Whiteside et. al.

• 1 year post-op, 58% had ≥ Stage II recurrent POP
• Identified risk factors:
  • Age < 60: OR 3.2; 95% CI 1.6-6.4
  • Stage III or IV pre-op POP: OR 2.7; 95% CI 1.3-5.3

Salvatore study

• N= 360
• Mean follow up of 26 months
• 10% had ≥ recurrent Stage II POP
• Only identified risk factor: Pre-op ≥ Stage III POP: OR 2.4, 95% CI 1.1-5.1

Main risk factor was advanced prolapse (Grade 3,4)
Risk factors of reoperation

- Cumulative incidence 5.6%
- Risk factors:
  - POP in > 2 vaginal compartments: OR 5.2, 95% CI 2.8-9.7
  - Sexual activity: OR 2.0; 95% CI 1.5-7.1

Summary: The data tells us that

- SCP is superior to a native tissue and a vaginal mesh repair for VAULT prolapse: Unless significant intraperitoneal risk factors exist, use SCP for all VVP
- The data for UTERINE prolapse is largely unknown
- The greatest risk factors of recurrent prolapse with native tissue repair is YOUNG AGE and > Stage II prolapse
- Should one consider SCP as primary approach in these patients or “save” the SCP for a 2nd operation?
My Current Approach to Prolapse Surgery

What is the age and activity level of the patient?

- **Younger**
  - Very Active
- **Older**
  - Less Active

Laparoscopic Sacral Colpopexy

Vaginal surgery

Mesh for recurrent anterior compartment only

---

### Table 2. Operative Times and Hospital Data

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Laparoscopic Sacrocolpopexy</th>
<th>Robotic Sacrocolpopexy</th>
<th>Median Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laparoscopic sacrocolpopexy</td>
<td>62.41</td>
<td>60.09</td>
<td>-2.32 (49.6-184)</td>
</tr>
<tr>
<td>Robotic sacrocolpopexy</td>
<td>58.35</td>
<td>56.45</td>
<td>-1.90 (30.3-184)</td>
</tr>
<tr>
<td>Median operating time (min)</td>
<td>36.15</td>
<td>34.25</td>
<td>-1.90 (30.3-184)</td>
</tr>
<tr>
<td>Median duration (min)</td>
<td>46.05</td>
<td>44.15</td>
<td>-1.90 (30.3-184)</td>
</tr>
</tbody>
</table>

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**Performance Times**

First 10 Cases vs Later Cases

- Peritoneal Closure: 11 vs 23
- Sacral Mesh Attachment: 12 vs 17
- Ant Mesh Attachment: 15 vs 21
- Sacral Arm: 13 vs 24

---

**Analysis of Robotic Performance Times to Improve Operative Efficiency**

Elizabeth J. Geller, MD
Catherine A. Matthews, MD

J Min Invasive Gynecol. 2012 Nov 8
Performance Times
First 10 Cases vs Later Cases

Trends in machines

Robots are big and expensive

Materials?
- Is ultra-lightweight Type 1 mesh the answer? Probably not
- Is permanent suture for mesh attachment the answer? Probably not
- I suspect that future trends will see the use of new graft materials

WEIGHT: 2.2 LBS (1 KG)
PRICE: $4000
Conclusions

- Future trend will likely be more native tissue repairs for primary prolapse
- Robotic surgery will have to be cost equivalent to sustain use
- Mesh materials will evolve beyond polypropylene
- SCP will remain a good operation, but it’s not fail-proof

References

“Pearls for sacrocolpopexy - Techniques for difficult anterior dissection”

Matthew H Clark MD
Hoag Hospital
Newport Beach, CA

Objectives
• Learn about difficult dissections
• Demonstrate how to repair cystotomy
• See the cystocele

Learning Objectives: Anterior dissection challenges
• Learn how to handle scarred
  – S/P C section, hysterectomy or prolapse repair
• See how to surgically treat large cystocele
• Demonstrate how to avoid cystotomy

Anterior dissection challenges
• Scarred
  – Technique similar regardless the cause of the scarring
  • See the bladder / vaginal border by filling the bladder or pulling the Foley bulb or tube
  • Vaginal dilator
  • Pull the vaginal wall tight
  • Start with sharp dissection to establish the plane

Anterior dissection challenges
• Scarred
  – Technique similar regardless the cause of the scarring
  • Right hand with scissors
  • Left with grasper
  • Lift up the bladder flap with assistant
  • Scissor tip 90 degree to the vagina and push forward and spread and pull backward.
• Cadaveric Demonstration Live

Cystotomy

• Mechanical or cautery?
  – Mechanical should heal without concerns
  – Cautery beware of poor healing

• Where?
  – At dome or the superior border (not in contact with mesh) Vs. between the bladder and vagina

Cystotomy

• Repair multilayer, tension free and using 2-0 vicryl
• Drain bladder x days
  – Dependent vs. Non dependent
• I do not place mesh in direct contact with the cystotomy repair
• Confirm Ureter is not involved

• Cadaveric Demonstration Live of cystotomy and repair

Large Cystocele

• Cystocele is the most likely location for a Colpopexy to fail
• FDA transvaginal mesh warning pushing providers and patients to avoid TVM for repairs
• Extended the indications for ASC to include large cystocele dominate prolapse
Evolving indications for dVSC in light of the FDA mesh warning letters

• Challenge of ASC:
  Controlling the Cystocele
  Recurrent ‘slide off cystocele’

Cystocele with ASC

Seeing the Cystocele

• Pull on anterior wall
  – Without a Lucite rod

• Release the anterior wall
  – Without a Lucite rod
  – “see the cystocele”

Cystocele with ASC

• Video vs Live demonstration: seeing the cystocele and sewing the anterior mesh
**Posterior Wall Dissection**

Posterior Wall Dissection

- Use a manipulator to distend the posterior fornix
- Incise the peritoneum
- Small pulses of electrocautery with blunt dissection
- Stay on the back of the vagina
- Consider a small manipulator (e.g. EEA sizer) if unsure of rectal anatomy

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**Disclosures**

Other: Honorarium: Intuitive Surgical
Grants/Research: Medtronic

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**MIS Sacrocolpopexy**

- Use a manipulator to distend the posterior fornix
- Incise the peritoneum
- Small pulses of electrocautery with blunt dissection
- Stay on the back of the vagina
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**Posterior Wall Dissection**

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Pearls for Sacral Colpopexy: What about the patient with a uterus?

Catherine A. Matthews, MD
Associate Professor and Division Chief
Urogynecology and Reconstructive Pelvic Surgery
University of North Carolina
Chapel Hill, NC

Objectives
• At the end of this presentation, the audience is expected to understand the following:
  • Rate of unanticipated uterine pathology in women undergoing surgery for POP
  • Risks and benefits of uterine preserving surgery
  • Comparative outcomes of uterine preserving surgery
  • Appropriate pre-operative case selection for hysteropexy

Case
• 57 yo with Stage III uterine prolapse
• Wants “the best” surgical treatment
• Had episode of PMP VB which was evaluated with EMBx- benign
• Should she have:
  • Sacrohysteropexy
  • SCH + SCP
  • TLH + SCP
  • TVH/USS

Not all uterine prolapse is created equally

Effect of concurrent hysterectomy
• Does concurrent hysterectomy affect recurrence rates?
• Does concurrent hysterectomy affect mesh exposure rates?
• Is there a difference between total and supracervical hysterectomy in anatomic outcomes?
• What is the risk of unanticipated uterine pathology?
• If the uterus is left in situ, what is the risk of developing future uterine pathology?

DISCLOSURES
Grants/Research: Boston Scientific Corp. Inc.
Total laparoscopic hysterectomy

Supracervical hysterectomy

Total laparoscopic hysterectomy

Hysteropexy

Uterine pathology
Cervical elongation
Compromised result

Patient preference
Lower mesh erosion
Decreased blood loss
Lower OR time

Risks of mesh exposure

Rates of mesh exposure with supracervical hysterectomy + cervicosacropexy = 0%

<table>
<thead>
<tr>
<th>AUTHOR</th>
<th>Subjects</th>
<th>Overall mesh exposure</th>
<th>OR TAH</th>
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<tr>
<td>Cundiff, 2008</td>
<td>322</td>
<td>6%</td>
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<td>Marinkovic, 2008</td>
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<td>No diff</td>
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</table>

OVERALL RATE OF MESH EXPOSURE ASCF 3.4%
RATES OF MESH EXPOSURE RANGE FROM 0-33%

Conclusions regarding mesh exposure with concurrent TLH

- TLH does increase the risk, but to what degree?
- Mesh materials play a big role: Impact of lighter weight Type 1 polypropylene?
- Sutures seem to play a big role too: Permanent vs delayed absorbable suture material?
- RCT funded
Unanticipated uterine pathology
Frick et al. AJOG 2010

- Preoperative assessment:
  - Endometrial biopsy
    - Pipelle (aspiration) endometrial sampling device
    - Detection rates of 67-92%
      - Observed in symptomatic women with known endometrial malignancy
    - Total surface area sampled is low: average 4% (0-12%)
    - 20% of postmenopausal women can have uterine pathology with specimen "insufficient" for analysis
    - High rate of false negatives in patients with tumors less than 50% of endometrial surface area

- Preoperative assessment:
  - Transvaginal US
    - University of Pisa, Gambacciani et al.
    - Retrospective review of 850 postmenopausal women taking hormone therapy who underwent hysteroscopy
    - 148 asymptomatic patients who underwent hysteroscopy secondary to transvaginal US stripe >4.5mm
    - Adenocarcinoma - 1 (0.7%) patient
    - Transvaginal Ultrasound generated 93% false positive rate

Ramm et al. Int Urogynecol J, 2012
N = 708

97.1% no concerning pathology
(2.9%) Unanticipated premalignant or malignant pathology
Regarding uterine pathology

- There is no good way to screen for it pre-operatively
- Expect a 3% rate over time
- New patient awareness regarding morcellation complicates your pre-operative discussion
- Management once disease is detected is challenging and controversial

Cervical elongation

5/8 (62.5%) had cervical elongation by 12 months

Efficacy?

- TLH vs SCH / Hysteropexy

Anterior failure noted in 55% of ASH
Subsequent uterine pathology in 22%

Abdominal Sacral Hysterectomy: A Pilot Study Comparing Sacral Hysterectomy to Sacral Coagulopexy With Hysterectomy

Gracia Chuck, MD*; Rosee Gofigor, MD; and Gregory W. Gourley, MD
Higher failure rate in hysteropexy group

Summary of data

- Do not do SCH in a PMP woman with any vaginal bleeding
- Counsel all women regarding the overall 3% risk of unanticipated uterine pathology
- Recognize that this rate is similar to rates of mesh exposure: Individualize risk/benefit ratio
- Only offer SCH to women with a small cervix
- Think about native tissue repair or TLH/SCP with large anterior wall prolapse

Conclusions

- Carefully consider the unique risks of SCP when counseling for use as a primary operation for young women with advanced uterovaginal prolapse
- Don’t leave a big, bulky cervix behind
- Practice any minimally-invasive technique and do it often: volume and repetition count

References

Pearls for sacral colpopexy - Techniques for sacrum exposure and securing the mesh.

Matthew H Clark MD
Hoag Hospital
Newport Beach, CA

Disclosure
Grants/Research: American Medical Systems
Speakers Bureau: Allergan, American Medical Systems, Bard Medical Division, Intuitive Surgical

Objectives
Learn the Anatomy
Review the Timing
Teach Technique
Talk about Tying

Anatomy Pearls
• Bones
• Lumbar Disc
• Vessels
  – Large: IVC-Aorta to the common iliac
  – Small: Middle Sacral
• Ureter
• Sigmoid Colon

Anatomy Pearls
• Video vs. Live demo of anatomy of sacrum
Technique Pearls

• Find the correct place to start the dissection
  – Avoid the sigmoid colon mesentery
  – 30 down scope if steep sacrum
  – Depth sound
  – Look up then down
  – Look lateral then in

Technique Pearls

• Video Vs Live demo of Depth sounding and posterior dissection

Technique Pearls

• Dissection
  – Pick up and cut and spread
  – Pick up fat, vessels don’t usually follow
  – Expose the promontory first
  – Move down the sacrum
  – Cauterize middle sacral vessels
  – Stuff a raytec if needed to dry up mild oozing

Technique Pearls

• Cadaveric Live Demonstration

Timing Pearls

• Timing
  – Always look first to see if possible
  – If patient is having a subtotal hysterectomy
    sacrum is my last space dissected
  – If patient has post op hysterectomy prolapse then
    sacrum is the first space dissected

Tying Pearls

• Suture
  – Permanent braided vs. monofilament
  – 90 degrees, then skim the bone, then turn up
  – Loop vessels
• Placement
  – Anterior longitudinal ligament
  – Two separate sutures if both are solid, Three if needed
  – Sacral body one and two
**Tying Pearls**

- **Tying**
  - Slip knot or pulley stitch
  - Pull up on the tail or push up the prolapse

- **Tensioning**
  - Check below
  - 1-2 cm draw.

**Tying Pearls**

- Video of Pulley Suture vs. Live Cadaveric Demonstration

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**Challenges**

- **History of**
  - Diverticular Disease
  - Sigmoid resection
  - Rectopexy
  - Lumbosacral fusion

- **Obese**

- **Low riding great vessels**
CULTURAL AND LINGUISTIC COMPETENCY

Governor Arnold Schwarzenegger signed into law AB 1195 (eff. 7/1/06) requiring local CME providers, such as the AAGL, to assist in enhancing the cultural and linguistic competency of California’s physicians (researchers and doctors without patient contact are exempt). This mandate follows the federal Civil Rights Act of 1964, Executive Order 13166 (2000) and the Dymally-Alatorre Bilingual Services Act (1973), all of which recognize, as confirmed by the US Census Bureau, that substantial numbers of patients possess limited English proficiency (LEP).

California Business & Professions Code §2190.1(c)(3) requires a review and explanation of the laws identified above so as to fulfill AAGL’s obligations pursuant to California law. Additional guidance is provided by the Institute for Medical Quality at http://www.imq.org.

Title VI of the Civil Rights Act of 1964 prohibits recipients of federal financial assistance from discriminating against or otherwise excluding individuals on the basis of race, color, or national origin in any of their activities. In 1974, the US Supreme Court recognized LEP individuals as potential victims of national origin discrimination. In all situations, federal agencies are required to assess the number or proportion of LEP individuals in the eligible service population, the frequency with which they come into contact with the program, the importance of the services, and the resources available to the recipient, including the mix of oral and written language services. Additional details may be found in the Department of Justice Policy Guidance Document: Enforcement of Title VI of the Civil Rights Act of 1964 http://www.usdoj.gov/crt/cor/pubs.htm.

Executive Order 13166, “Improving Access to Services for Persons with Limited English Proficiency”, signed by the President on August 11, 2000 http://www.usdoj.gov/crt/cor/13166.htm was the genesis of the Guidance Document mentioned above. The Executive Order requires all federal agencies, including those which provide federal financial assistance, to examine the services they provide, identify any need for services to LEP individuals, and develop and implement a system to provide those services so LEP persons can have meaningful access.

Dymally-Alatorre Bilingual Services Act (California Government Code §7290 et seq.) requires every California state agency which either provides information to, or has contact with, the public to provide bilingual interpreters as well as translated materials explaining those services whenever the local agency serves LEP members of a group whose numbers exceed 5% of the general population.

~

If you add staff to assist with LEP patients, confirm their translation skills, not just their language skills. A 2007 Northern California study from Sutter Health confirmed that being bilingual does not guarantee competence as a medical interpreter. http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2078538.