Plenary 7: Pain Issues

MODERATORS
Joseph Maurice, MD
Tamer Seckin, MD
Ralph J. Turner, MD

DISCUSSANTS
Sawsan As-Sanie, MD, MPH
Nichole Mahnert, MD
Erin T. Carey, MD, MSCR
Ja Hyun Shin, MD, MS
Austin Findley, MD, MSCR
Mary Ellen Wechter, MD, MPH
Cathy K. Cui, MBBS
Nucelio Lemos, MD, PhD
Sara R. Till, MD, MPH
Christopher Eswar, MD
Jennifer Rosenbaum, MD
Stephen Wagner, MD
Target Audience
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Discussants: Sawsan As-Sanie, Erin T. Carey, Austin Findley, Nichole Mahnert, Ja Hyun Shin, Mary Ellen Wechter

Faculty: Cathy Cui, Christopher Eswar, Nucelio Lemos, Jennifer Rosenbaum, Sara R. Till, Stephen Wagner

This course provides participants with an update on new diagnostic modalities for evaluating and treating pain related to urogenital organs and the pelvic floor. The subject matter will include: evaluating pain from surgical complications; results of diagnostic and therapeutic interventions for pelvic floor dysfunction; endometriosis and dyspareunia.

Learning Objectives: At the conclusion of this course, the clinician will be able to: 1) Consider the role of 4D ultrasound, various hysterectomy techniques, and neuro-modulation devices in the chronic pain evaluation and treatment protocols.

Course Outline

2:15 Assessment of Pelvic Floor Musculature in Women With and Without Pelvic Pain Using Four Dimensional (4D) Ultrasound

C.K. Cui

2:21 Discussant

S. As-Sanie

2:25 Change in Sexual Function at One Year Among Women Undergoing Hysterectomy for Pain-Related Versus Non-Pain Indications

S.R. Till

2:31 Discussant

J.H. Shin

2:35 Ultrasonographic Investigation of the Mechanisms Involved in Menstrual Cramps

J. Rosenbaum

2:41 Discussant

E.T. Carey

2:45 Removal of Tension-Free Vaginal Tape-Obturator Mesh Arm for Persistent Groin Pain Following Vaginal Mesh Removal

C. Eswar

2:51 Discussant

N. Mahnert

2:55 Video: Laparoscopic Implantation of Electrodes for Bilateral Neurmodulation of the Pudendal Nerves and S3 Nerve Roots for the Treatment of Pelvic Pain and Voiding Dysfunction

N. Lemos

3:01 Discussant

A. Findley

3:05 Video: Laparoscopic Hysterectomy Complicated By Endometriosis and Bilateral Dermoid Cysts

S. Wagner

3:11 Discussant

M.E. Wechter

3:15 Adjourn
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Amber Bradshaw
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Other: Proctor: Intuitive Surgical
Erica Dun*
Frank D. Loffer, Medical Director, AAGL*
Linda Michels, Executive Director, AAGL*
Johnny Yi*

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Christopher Eswar*
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Stephen Wagner*
Mary Ellen Wechter*
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Assessment of Pelvic Floor Musculature in Women With and Without Pelvic Pain Using Four Dimensional (4D) Ultrasound

CATHY KEXIN CUI

University of New South Wales, Australia

• I have no financial relationships to disclose

OBJECTIVES

• Identify demographic and clinical factors affecting pelvic muscle morphology
• Discuss uses and limitations of 4D translabial ultrasound

Background

• 4D translabial ultrasound increasingly used to evaluate pelvic pathology
  – Incontinence
  – Prolapse
• Limited number of studies examining effect of pelvic pain on appearance of levator ani muscles on 4D ultrasound
  1,2
• Lack of normative data on pelvic muscle morphology

Methods

Non-pregnant female patients ≥18 years
  – Recruited consecutively at clinics
  – Excluded if known gynecological malignancy

Pre-scan interview to obtain
  – Demographics
  – Obstetric, gynecologic and surgical history
  – Pain symptoms
Methods

Five parameters
• Levator hiatus area
• Pubovisceral muscle length
• Pubovisceral muscle width
• Bladder neck descent (2D view)
• Presence of avulsion defects

U = Urethra, V = Vagina, R = Rectum

Results

228 valsala, 227 contraction, 204 rest volumes

Demographics:
• Caucasian
• Sexually active
• Mean age 40.3 years
• 47.4% (n=108) nulliparous
• 18.0% (n=41) prolapse symptoms
• 64.0% (n=146) current pelvic pain

Results

Current pelvic pain: Dysmenorrhoea, Non-menstrual pelvic pain, Dyspareunia, Dyschezia, Dysuria

\( n = 146 \)

\( 103 \) Pain requiring treatment
\( 95 \) Pain not requiring treatment
\( 89 \) No pain

\( 43 \) Pain requiring treatment
\( 30 \) Pain not requiring treatment

\( 46 \) No pain

Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pelvic pain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Requiring treatment</td>
</tr>
<tr>
<td>Age</td>
<td>( 33.18 \pm 8.44 )</td>
</tr>
<tr>
<td>BMI</td>
<td>( 25.23 \pm 5.63 )</td>
</tr>
<tr>
<td>Vaginally nulliparous</td>
<td>80.5%</td>
</tr>
<tr>
<td>Bladder neck descent, mm</td>
<td>0.90 ± 0.72</td>
</tr>
<tr>
<td>Levator avulsion</td>
<td>1.3%</td>
</tr>
<tr>
<td>Prolapse</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Regression Model for LH Area:
• Vaginal parity, prolapse and presence of levator avulsion explained effects on LH size
• No independent effect of pelvic pain on levator hiatus area
Conclusions

• Levator ani morphology is affected by multiple factors
• Pelvic pain appears to exert little independent effect on levator hiatus area

REFERENCES

Change in sexual function at one year among women undergoing hysterectomy for pain-related versus non-pain indications

Sara R. Till, MD, MPH
University of North Carolina at Chapel Hill

• Discuss how to counsel patients regarding outcomes for sexual function and dyspareunia following hysterectomy

Post-hysterectomy sexual function
• Conflicting data
  – Many women have improved overall sexual function, decreased dyspareunia1,2,3,4,5
  – Others have no change or decrease in sexual function1,3,6,7
  – Preoperative sexual dysfunction (dyspareunia, anorgasmia, vaginal dryness, low libido) associated with postoperative dysfunction
  – No prospective data on outcomes by surgical indication

Methods
• Secondary analysis of single-blind RCT
  – TLH for benign indications
  – Modified McCall culdoplasty vs standard closure
  – POP-Q and FSFI preoperatively and 12 months postoperatively
• Female Sexual Function Index (FSFI)
  – Desire, Arousal, Lubrication, Orgasm, Pain and Satisfaction

Methods
• Divided by surgical indication
  – Pain (eg, chronic pelvic pain, dyspareunia, dysmenorrhea)
  – Non-pain (eg, menorrhagia, fibroids, pelvic mass)
• Outcomes
  – Primary: Sexual function (FSFI)
  – Secondary: Dyspareunia
**Results**

- **Randomized**: 50
  - McCalls = 25
  - No Mc Calls = 25
- **Lost to follow up**: 17
- **Secondary analysis**: 23

**Pain indications**
- n = 17

**Non pain indications**
- n = 16

**Indication**

- Mean difference, two sample t-test

**Sexual dysfunction**

- Change in sexual function
- Change in dyspareunia

- Paired t-test

**Dyspareunia**

- **p = 0.04**

**Conclusion**

- **Dyspareunia may improve in patients with pain-related indications for surgery**
- **Patients with endometriosis appear to have greater improvement in sexual function**
- **Limitations** – secondary analysis, small sample size, small number with endometriosis, high proportion of sexual dysfunction
- **Indication for surgery may be an important predictor of post-hysterectomy sexual function and warrants further research**

**REFERENCES**

Ultrasonographic investigation of the mechanisms involved in menstrual cramps

Jennifer Rosenbaum, M.D.
University of Chicago Medical Center

I have no financial relationships to disclose.

• Summarize proposed etiologies of dysmenorrhea
• Discuss methodology used to understand etiologies
• Review relevant findings of study
• Explore future diagnostic and treatment protocols

Background
8-31 million of American women suffer from dysmenorrhea that is not resolved by over the counter pills such as NSAIDS (nonsteroidal anti-inflammatory drugs)

Study Objectives
Establish the relationship between menstrual cramps and abdominal-visceral or abdominal-motor activity with ultrasonography and electromyography

Methods
440mg Naproxen given at 1 hour
Continuous reporting using digital VAS meter
13 women with primary or secondary dysmenorrhea at the time of menstruation
Discussion

- Abdominal skeletal muscle as source of menstrual pain
- Future direction
  - Diagnostic MRI assessing uterine perfusion
  - Targeting treatment

References


Acknowledgements

- Caroline Kuhn
- Frank Tu, MD
- Kevin Hellman, PhD
Removal of tension-free vaginal tape-obturator mesh arm for persistent groin pain following vaginal mesh removal

Christopher Eswar MD
St. Josephs Hospital and Medical Center

I have no financial relationships to disclose.

To give providers an option for surgical intervention for patients with persistent groin pain following TVT-O mesh removal.

Introduction

• Stress urinary incontinence (SUI) affects up to 30% of women.1
• TVT-O remains a standard surgical treatment for stress urinary incontinence (SUI).2
• Groin pain in patients following TVT-O has been reported to be up to 3% at 1 year.3
• The rate of mesh related complications after SUI and pelvic organ prolapse repair has been reported up to 15-25%.4,5

Introduction

• Data is sparse in regards to the best treatment for patients with pelvic pain following TVT-O and other mesh placements
• It is unclear whether full mesh removal vs. partial mesh removal is necessary for treatment of pelvic pain
• Which technique to employ? Eg. Vaginal vs Laparoscopic or combo.

Methods:

Retrospective review of patients undergoing excision of TVT-O mesh via vaginal-transcutaneous approach for persistent groin pain following previous vaginal mesh removal over a 1 year period between 08/01/14 to 08/01/15 at a community based academic hospital.
Results

- A total of 11 patients and 13 procedures were collected. A visual analog score (VAS) was taken pre-operatively and 3 months post-operatively.
- In two procedures, mesh could not be identified (15%).
- In 8 of 13 procedures, one or both mesh were found and completely excised from the obturator foramen (61.5%).

Results Cont.

- Persistent leg adductor weakness was reported in 1 patient.
- Three patients had complete resolution of their pain (27.2%).
- Four patients had a 50% or greater reduction in reported pain between their pre-op and post-op VAS scores (30.7%).

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Patient</th>
<th>Date of Procedure</th>
<th>Surgical side</th>
<th>Surgical procedure</th>
<th>Pre-op VAS</th>
<th>Post-op VAS</th>
<th>Complications</th>
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<td>1</td>
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<td>8/21/14</td>
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<td>Left mesh arm</td>
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<td>3</td>
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<tr>
<td>3</td>
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<td>12/4/14</td>
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<td>8</td>
<td>3</td>
<td>None</td>
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<tr>
<td>4</td>
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<td>10</td>
<td>2</td>
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<tr>
<td>5</td>
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<td>2/12/15</td>
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<td>Right mesh arm</td>
<td>10</td>
<td>8</td>
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<td>6</td>
<td>6</td>
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<td>Right adductor weakness</td>
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<td>5/11/15</td>
<td>Right mesh arm</td>
<td>Right mesh arm</td>
<td>10</td>
<td>6</td>
<td>Allodynia</td>
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<td>8</td>
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<td>3/21/15</td>
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<td>8</td>
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<td>6/10/15</td>
<td>Right mesh arm</td>
<td>Right mesh arm</td>
<td>10</td>
<td>1</td>
<td>None</td>
</tr>
<tr>
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<td>6/22/15</td>
<td>Left mesh arm</td>
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<td>9</td>
<td>2</td>
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<tr>
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<td>6/29/15</td>
<td>Right mesh arm</td>
<td>Right mesh arm</td>
<td>7</td>
<td>0</td>
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</tr>
</tbody>
</table>

Discussion

- We observed an improvement in pain following full removal of TOT-O mesh.
- Full mesh removal can be completed using the vaginal approach.
- Although mesh was not found in 2 patients, improvement in VAS scores can be attributed to releasing scar tissue.
- With the introduction of the TVT-Abbrevo, patients may have less pain due to mesh not coursing through the Adductor Magnus.

Conclusions

- Removal of vaginal mesh arm from TVT-O sling may be a treatment option for patients with persistent groin pain following vaginal mesh removal.
- Patients may benefit from removal of the TVT-O mesh arm, although further study is needed.

References

2. Post-operative groin pain and success rates
Laparoscopic Implantation of Electrodes for Bilateral Neurmodulation of the Pudendal Nerves and S3 Nerve Roots for the Treatment of Pelvic Pain and Voiding Dysfunction

Nucelio Lemos, MD, PhD
Sao Paulo, Brazil

**Objective:** To describe the laparoscopic implantation of electrodes for bilateral neuromodulation of S3 and pudendal nerves.

**Design:** Case report

**Setting:** Tertiary referral Center

**Interventions:** 48 year-old woman with a 14-year history of intense acyclic pelvic pain, which worsened during micturition and on the minutes following it. She also complained of urinary hesitation and intermittent flow.

A quadripolar electrode was inserted into the Alcock’s canal and attached to the pelvic pectineal line. Another lead was placed juxtaneurally to S3. The same procedure was performed on the contralateral side.

On post-operative evolution, the patient developed an acute thrombosis of the external iliac artery, which was treated endovascularly. Complete resolution of pain was observed with simultaneous S3 and pudendal and pudendal stimulation is turned off for voiding.

**Conclusion:** The laparoscopic implantation of neuromodulation electrodes allows for simultaneous stimulation of S3 and pudendal nerves, allowing for more programming options and possibly increasing success rates in complex pelvic floor dysfunction cases, even when bilateral S3 stimulation has failed.
Total Laparoscopic Hysterectomy in a Patient with Bilateral Dermoid Cysts

Stephen Wagner, MD  
Penn State Hershey Medical Center, Hershey, Pennsylvania

**Objective:** To show how multiple procedures can be safely managed during a single operation.

**Design:** Stepwise demonstration of the technique with narrated video footage.

**Setting:** Endometriosis is present in approximately 10% of women and can cause severe pelvic pain. Following failure of medical management and proper counseling definitive treatment is surgical and can include hysterectomy. ACOG supports coincidental appendectomies in patients undergoing hysterectomies for endometriosis. Dermoid cysts are the most common form of ovarian neoplasm and often present with pelvic pain as well. Symptomatic dermoids are managed surgically.

**Interventions:** Total laparoscopic approach to a patient with chronic pelvic pain from multiple etiologies

1) Bilateral dermoid cystectomy with storage in endocatch bags prior to removal
2) Total laparoscopic hysterectomy and bilateral salpingectomy
3) Coincidental appendectomy with storage in endocatch bag prior to removal
4) Excision of endometrial nodules

**Conclusion:** When presented with a complex patient who possesses numerous etiologies for pelvic pain it is possible to complete multiple procedures in a single operation in a methodical stepwise manner.
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.

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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.